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THE RUSSIAN REVOLUTION OF 1917 THROUGH THE PRISM OF DEMOGRAPHIC MODERNIZATION *

BORIS MIRONOV

In late imperial Russia demographic indicators improved, the efficiency of population replacement increased somewhat, a certain rationalization of demographic behavior occurred, and intra-familial relations were humanized. But arguably the most important changes were that a significant part of the population began to differentiate sexual, matrimonial, and reproductive behavior and to develop individual birth control, changes regarded in demography as criteria for the first demographic transition. The primary explanation for these positive changes lies in the participation in this demographic revolution of approximately 14 percent of Russian citizens, mainly from the educated and affluent population living in large cities, as well as Jewish, Catholic, and Protestant residents of the western regions. The majority of the rural and urban population, of Orthodox, Muslim, pagan, and other non-Christian religious affiliations (approximately 86 percent of the entire population), was superficially affected by the new trends. People who were actively and consciously drawn into the demographic transition, who had been transformed psychologically, mentally, and culturally, were also receptive to innovation in the social, political, cultural, and economic spheres and were the most prepared for and willing to refashion social life on a bourgeois-democratic basis. Their numbers were sufficient for the slow, gradual, overall modernization of the country, but inadequate for rapid and profound revolutionary bourgeois-democratic transformations. Consequently, the Revolution of 1917 proved premature. Political midwives hurried and artificially hastened the birth of a new Russia. The newborn was born preterm. As a result, the revolution could not meet the challenges set by its leaders and organizers.

Key words: nuptiality, fertility, mortality, efficiency of population replacement, birth control, illegitimate children, premarital sex, abortion, contraception, divorce, demographic transition.

The purpose of this article is to sum up the results of demographic modernization in late imperial Russia and, based on these results, to assess the population's readiness for the radical bourgeois-democratic transformations of society that the revolution of 1917 aimed to bring about.

Analysis of the main demographic processes in imperial Russia show that, in the 18th and the first half of the 19th century, marriage and fertility rates were at extremely high levels, mortality was also high, and all indicators, though they varied significantly in certain years, showed no clear tendency either to increase or decrease, conforming to the typical model of traditional population replacement (Table 1).

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Table 1. Crude rates of nuptiality, fertility, mortality and natural population increase in European Russia in the 18th-early 20th century, per thousand

Demographic processes	18 th century*	Years						
		1801- 1860 *	1861- 1870	1871- 1880	1881- 1890	1891- 1900	1901- 1910	1911- 1914
Whole population:								
nuptiality	9.9	10.2	10.3	9.5	9.1	9.0	8.4	8.0
fertility	51.0	50.0	50.3	50.4	50.4	49.2	46.8	43.9
mortality	37.0	36.0	36.9	36.4	35.5	34.2	30.3	27.1
natural increase	14.0	14.0	13.3	14.0	14.9	15.1	16.5	16.8

* Only the Orthodox population.

Sources: [Dvizhenie naseleniya... 1865; Mironov 2014: vol.1: 533-534; 1990: 259-260; Novoselsky 1916a: 36-37; Sifman 1977; Statistical Yearbook ... 1915: 2; Statistical yearbook ... 1918: 193].

Ten years after the abolition of serfdom the marriage rate began to decline steadily, and fertility and mortality began to decline a decade after that (starting in the 1880s). The decline in demographic indicators after the Great Reforms of the 1860s was in fact more pronounced than the data indicates, due to the improvement in the quality of demographic record-keeping, which contributed to an increase in the absolute value of demographic indicators. Two trends - a decrease in the absolute value of crude rates and an improvement in the quality of accounting (especially in the case of mortality) - cancelled each other out, and as a result the true picture was somewhat distorted. As a result of a more significant drop in mortality than in fertility, the already high rates of natural population growth began to increase, and on the eve of the First World War increased by 3.5 points - from 13.3 to 16.8 per thousand, reaching a maximum for the entire period of the empire, although during the war years these figures naturally decreased [Boyarskiy 1975]. The intensification of pressure on resources together with overall growth in the cultural level of the population created the prerequisites for a transition from the traditional to the modern model of demographic reproduction.

MARRIAGE AND FAMILY

The model of nuptiality changed during the the 18th and first half of the 19th century due to a rise in the age of marriage, and in the post-reform period due to an increase in the number of persons who did not marry, the growth of divorces, and a reduction in the number of people who remarried. In the second half of the 19th century, the population became more tolerant than before of celibacy and delayed marriage and divorce, while so-called common-law marriages, i.e., prolonged cohabitation of men and women not registered by the church (among the nobility and intellectuals this meant "free love"), and marriages registered abroad became somewhat more widespread [Veremenko 2007: 49-50].

Between 1780 and 1850 the modal age of brides grew from 15-16 to 18-20 years, and of bridegrooms - from 16-18 to 20-21 years [Mironov 2014: v.1: 564]. In the post-reform period, the mean age at marriage stabilized¹ [Tolts 1977: 139], but there was a slight upward trend: from 1867

¹The mean age of all Russian brides who entered a first marriage in 1867-1910 was 21.4 years, of grooms - 24.2 years.

to 1910, this age increased by about half a year. However, the mean age of married men in urban areas decreased as a result of the immense migration of peasants who, as was customary in the countryside, married early (Table 2).

Table 2. Mean age at marriage of the urban and rural population of European Russia in 1867 and 1910, in years

Population	Men		Women	
	1867	1910	1867	1910
Rural	24.3	24.8	21.3	21.6
Urban	29.2	27.4	23.6	23.7
Total	24.8	25.2	21.5	21.9

Sources: [Population Movement... 1872: 40-407, 412-415; Population Movement... 1916: 88-89].

The relative stability of the mean age concealed the changes in the age structure of married couples: the share of those married before age 21 and after age 30 decreased, and of those between 21 and 30 increased (Table 3).

Table 3. Distribution by age group of those marrying in European Russia in 1867-1910, %

Years	Age of grooms, years					
	20 and under	21 - 25	25 - 30	30 - 40	40 - 50	51 and over
1867- 1871	37.8	31.0	10.9	12.6	5.9	1.8
1872- 1876	37.7	30.7	13.0	11.5	5.2	1.9
1877- 1881	37.2	29.7	15.9	10.5	4.6	2.1
1890- 1894	31.2	33.9	19.1	9.8	4.1	1.9
1895- 1898	30.8	35.6	19.1	9.1	3.5	1.8
1910 .	30.8	36.2	18.8	8.9	3.5	1.8
	Age of brides, years					
1867- 1871	57.3	26.3	7.1	6.7	2.2	0.4
1872- 1876	57.7	26.8	7.0	5.9	2.2	0.4
1877- 1881	59.0	27.0	6.7	5.2	2.0	0.1
1890- 1894	55.3	30.4	7.3	4.8	1.8	0.4
1895- 1898	54.7	31.7	7.1	4.5	1.6	0.4
1910 .	54.5	31.0	7.3	4.7	1.9	0.6

Sources: [Rashin 1956: 174-175; Sbornik svedeniy po Rossii... 1887: 36-37].

The percentage of persons who refrained from marriage increased, but only slightly. Until the middle of the 19th century, only persons with serious disabilities (about 3% of the population) remained unmarried. At the turn of the nineteenth and twentieth centuries, the proportion of people who had not married by the end of their fertile years rose to 4% in the countryside and to 11% in the city (Table 4).

At the same time, the proportion of persons who did not remarry after widowhood increased to about 15% in the city and 9% in the village. As a result, the average length of marriages dropped – to about 20 years for townspeople and 25 years for peasants [Vishnevsky 1977: 114-120; Tolts 1977: 138-153]. Changes in the marital model began in the city in the first half of the 19th century and spread to the countryside in the second half of the century, as is clearly visible from the data in Table 5. In 1910, the changes in the age structure of marriage affected mainly large cities, then small towns, and finally rural areas.

Table 4. The proportion of people widowed and never married among the urban and rural population of European Russia in 1897

Age, years	Never married, %				Widowed, %			
	Men		Women		Men		Women	
	urban	rural	urban	rural	urban	rural	urban	rural
15–19	98	95	91	87	—	—	—	—
20–29	60	35	38	20	1	1	4	1
30–39	18	6	16	6	2	1	12	5
40–49	11	3	12	4	5	4	26	14
50–59	—	—	—	—	11	11	45	29
15 and older	42	28	30	21	4	6	18	13

Sources: [Tolts 1977: 140, 149; Novoselsky 1916a:28].

Table 5. Distribution by age group of those marrying in urban and rural areas of European Russia in 1910

Where marriage took place	Age, years					
	<20	21-25	26-30	31-40	41-50	51+
Men						
In main cities	11.5	36.4	29.0	16.0	4.8	2.3
In other cities	14.4	40.1	27.1	12.1	4.0	2.3
In rural areas	33.3	36.0	17.5	8.1	3.4	1.7
Total	30.8	36.2	18.8	8.9	3.5	1.8
Women						
In main cities	35.5	35.1	14.3	10.6	3.7	0.8
In other cities	43.0	37.4	10.8	6.0	2.1	0.7
In rural areas	56.7	30.2	6.7	4.1	1.7	0.6
Total	54.5	31.0	7.3	4.7	1.9	0.6

Source: [Population Movement ... 1916: 88-89].

These changes in the marriage model were initiated by the educated segments of the population, primarily the nobility, who were concentrated in urban areas. Data on the family status of the most important estates in five gubernias (Grodno, Kaluga, Perm, Simbirsk and Yaroslavl) in the 1850s and 1897 well reflect this (Table 6).

Given that educated people, as well as many foreigners, were concentrated in the capital of the empire, Petersburg, changes in the marriage model were particularly noticeable there. By 1864 the share of unmarried men and women in the capital had reached 35%. The mean age at first marriage was 30.5 years for men, 25.5 years for women. The seasonal fluctuations of marriage decreased significantly. [St. Petersburg 1868: vol.1: 104, 134, 138, 144]. At the beginning of the 20th century the number of divorced persons exceeded a hundred for the first time, representing 0.18% of the entire population of the city [Statisticheskiy ezhegodnik S.-Peterburga ... 1905: 17], and thousands of people married in civil rather than church ceremonies. Guardianship surveys of 1915-1916 among families of the capital's lower military ranks revealed that about 10% of families had unmarried partners, which caused a sensation [Bulgakova 2008; 2009]. Of course, this was wartime, when a huge number of soldiers were concentrated in Petrograd. However, such a large number of unregistered common-law marriages could not have occurred had the ground not been already prepared.

Table 6. Marital status of the population of marriageable age in European Russia by estate in the 1850s and in 1897, %

Marital status	Merchants, lower middle class		Peasants		Nobles		Clergy	
	men	women	men	women	men	women	men	women
<i>1850s, for five gubernias</i>								
Under marriageable age	42	33	44	40	—	—	50	39
Never married	15	21	7	12	—	—	7	13
Married	38	32	44	40	—	—	37	35
Widowed	5	14	5	8	—	—	6	13
<i>1897, for five gubernias</i>								
Under marriageable age	34	33	47	41	—	—	—	—
Never married	23	19	8	12	—	—	—	—
Married	40	34	41	38	—	—	—	—
Widowed	3	14	4	9	—	—	—	—
Divorced	0.1	0.1	0.07	0.05	—	—	—	—
<i>1897, European Russia</i>								
Under marriageable age	43	39	45	40	36	30	40	32
Never married	17	16	11	12	26	24	19	27
Married	37	35	40	40	34	32	34	29
Widowed	3	10	4	8	4	14	7	12
Divorced	0.1	0.3	0.01	0.05	0.2	0.2	0.04	0.04

Sources: [Lukanin 1878 : 206; Trubnikov, 1858: 417; *O sostave i dvizhenii naseleniya...* 1861: 90; Bobrovsky 1863: 536-540; Prostky 1864: 330; *Obshchiy svod ... 1905: vol.2: 198-207, 216-219, 224-225*].

Transformations in the objective conditions of life were not the only source of changes in the marital model; there were changed attitudes toward marriage as well. The idea of lifelong marriage began to erode; if a partner abused his power, was unfaithful, left for a very long time or did not perform his matrimonial duties, he could now be replaced through divorce. To a lesser extent, these changes also affected peasant families and the urban underclasses, i.e., about 90% of the country's population.

Table 7. The number of marriages from the 1800s through the 1960s in Russia and a number of other countries, per 1000 people

Country	Years							
	1800s	1850s	1880s	1900s	1920s	1930s	1950s	1960s
Russia	9.9	10.3	9.2	8.5	9.9	6.3	11.9	10.8
Austro-Hungary*	8.1	8.0	7.8	7.8	9.2	8.6	8.3	8.0
England	—	8.5	7.5	7.0	8.0	8.5	7.9	7.8
USA	—	9.6	8.7	10.5	10.5	9.8	9.5	9.3
Germany	8.2	8.0	7.4	8.1	9.7	9.4	9.3	8.5
France	7.6	8.0	7.4	7.8	9.7	7.1	7.3	7.1
Japan	—	—	8.2	8.8	8.5	8.0	8.4	9.7

Source: [Mironov 2015: vol.3: 753-756].

Note: * Austria since 1918.

Changes in the marriage model led to a decrease in the general level of nuptiality in the country. And yet, Russia had the highest marriage rate among the developed European countries and the United States up to the beginning of the 20th century. Only in the 1900s did the United

States, after the huge emigration of the adult population from Europe, take the lead, a lead it would retain for the next 40 years (Table 7).

The Russian model of nuptiality of the 18th to the first half of the 19th century differed from that in Western Europe, which was characterized by late marriage (brides over age 25 and grooms over 27), and where a significant proportion of persons never married at all (at least 9-10%, and in some cases more than 15%). The shifts in the post-reform period somewhat reduced the differences, but a significant gap still remained at the beginning of the twentieth century (Tables 8, 9).

Table 8. Proportion of never married men and women in some European countries at the turn of the 20th century, %

Country	Age, years			
	women		men	
	20-24	45-49	20-24	45-49
Ireland	86	17	96	20
Sweden	80	19	92	13
Great Britain	73	15	83	12
Germany	71	10	91	9
Finland	68	15	84	14
Italy	60	11	86	11
France	58	12	90	11
Spain*	81	34	55	10
Greece	44	4	82	9
<i>European Russia**</i>	35	5	54	4
Bulgaria	24	1	58	3
Romania	20	3	67	5
Serbia	16	1	50	3

* Age groups for Spain: 21-25 years; 46-50 years. ** According to calculations by M. Tolts.

Sources: [Hajnal 1965: 102-103; Tolts 1977: 139].

Table 9. Proportion of never married persons aged 45-49 in some countries of the world at the turn of the 20th century, %

Country, year	Women	Men	Country, year	Women	Men
Sweden, 1900	19.0	13.0	Australia, 1901	9.3	22.4
Belgium, 1900	17.1	16.1	USA, 1900	8.6	12.0
Switzerland, 1900	17.0	16.0	Czech Republic, 1910	8.5	6.2
Netherlands, 1900	14.0	13.0	Poland, 1900	7.8	6.1
England and Wales, 1901	13.4	11.0	<i>European Russia, 1897</i>	5.0	4.0
Austria, 1900	13.0	11.0	Greece, 1907	4.0	9.0
Canada, 1911	12.0	15.1	Hungary, 1900	4.0	5.0
France, 1901-1905	11.2	10.4	Romania, 1899	3.0	5.0
Italy, 1901	10.9	10.9	Japan, 1920	1.9	2.3
Spain, 1900	10.2	6.4	Bulgaria, 1900	1.0	3.0
Germany, 1900	10.1	8.2	Serbia, 1900	1.0	3.0

Source: [Patterns of first marriage... 1990: 7-18].

Both in the village and in the city the family organization of the population was changing. The available data on the peasant family structure show that through the 16th and into the first half of the 19th century the small and the extended family coexisted peacefully. Their ratio, however, changed, which was explained by changes in the tax system and the prosperity of the population, economic conditions, social and economic crises, the policy of landlords towards their peasants,

and colonization. Until the middle of the 19th century an extended family often grew into a large family and, in rare cases, into an ancestral family that combined many married couples and up to 100 people. Even in the 1850s there were many large families in each province, numbering 20-30 or more people. Their share was not large (0.3-1.6%), but there were thousands of them. All this shows that even in the middle of the 19th century the large family had not yet become obsolete. During the post-reform period, the small family became noticeably more common in all regions of the countryside than it had been in the middle of the nineteenth century, and by 1897 it was numerically dominant among the peasantry of European Russia, although only slightly. Socioeconomic factors played a significant role in preserving the tradition of the extended family, including the repartitioning of communes, serfdom, legal restrictions on the development of private ownership of land, the absence of primogeniture, the provision of land and other natural resources, the form of rent, climate, the nature of economic activity, the degree of the development of the labor market, and others.

Townspeople in the period of the empire preferred small families. However, until the middle of the 19th century more than half of the urban population lived in an extended family for a certain period of their lives. In different social groups and in different regions the process of nuclearization occurred inconsistently, but by the beginning of the twentieth century the small family had become victorious. The city was ahead of the country by about 50 years, that is, two generations, in the eradication of archaic forms of family organization: the typology of families observed in the cities in the middle of the 19th century came to the countryside only at the century's turn.

The process of full and final nuclearization of family organization was completed only in the 20th century. The share of extended families in the family structure in 1994 was only 3.6%. Furthermore, as a rule they persisted not because of a desire of parents and children to continue living together, but due to necessity, to the lack of availability of separate housing for young people.

In the post-reform period, all social classes also experienced *changes in intra-family relations*. The nobility and the intelligentsia pioneered the transition from patriarchal-authoritarian to egalitarian families and from patriarchal to democratic relations within the family in the last third of the 19th and early 20th centuries. However, the patriarchal-authoritarian basis of intra-family relations was not seriously undermined either among the peasantry or the urban lower classes, and it was largely preserved until 1917. This is evidenced by the fact that, even in the Russian village of the 1920s, traditional views on the family and women remained very strong [Fenomenov 1925: 98-106; Yakovlev 1923; 1924; Bridger 1992: 271-293; Farnsworth 1992: 167-188]. Progress was manifested in the mitigation of violence against the weaker members of the family and in the establishment of a certain amount of social and legal oversight in protecting the interests of women and children. Authoritarianism within the family was, to a greater or lesser degree, placed within the framework of the law. Until the middle of the 19th century marriages were, as a rule, concluded by direct instruction of the parents, by means of matchmaking, through an engagement and a wedding that took family interests into account. In the last third of the 19th to the early 20th century, young people began to participate in the choice of a spouse, guided by inclination and other personal considerations. At the same time, the goals of encounters with the opposite sex expanded: young people no longer sought only a spouse, but also a source of

entertainment, emotional contact, pleasure, etc. Powerful remnants of serfdom, persistent patriarchy within the family, and the poorly developed feminist movement in Russia prevented the completion of this process even among the elite of Russian society, if by this we mean the bulk of the families of the privileged strata.

Many researchers, both past and present, see the changes in the family way of life in late imperial Russia as a crisis of the institution of the family, and at the same time a sign of the general social crisis of Russian society. It is difficult to agree with this. It is impossible to consider such progressive changes as a reduction of marriage and birth rates from an unreasonable height to a "normal" level as a crisis. The same is true of an increase in the age of marriage, the nuclearization, democratization and humanization of intra-family relations, improvement of the status of women and children, a rise in the number of divorces and separations, an increase in the number of common-law marriages and conflicts between spouses and "fathers and children", an expansion of the use of contraception and abortion, a simplification of the legalization of illegitimate children and the adoption of legal children, and the institution of regulatory supervision by society and the courts over the interests of women and children. For example, the dissolution of 3,791 out of 1,053,000 marriages contracted in 1913 [Statisticheskii ezhegodnik ... 1916: 2] cannot be considered a crisis of the family, even if the number of divorces had increased by 46 times compared with 1861. The changes listed do not, in fact, testify to a crisis in the institution of the family, but to its development in the direction of modernization. One can only regret that these changes affected mainly the educated part of society and did not spread far enough. These changes themselves were conditioned by modern processes: secularization, democratization, industrialization, urbanization, the growth of literacy and the spread of liberal ideas in society. Thanks to the rapid development of the mass media, new family practices became known to the public and became the subject of sharp public disputes between people who held different ideological orientations [Nikologorsky 2012: 28-32]. And it is worth recalling that modernization is always, everywhere and in all spheres of life a painful process.

FERTILITY AND MORTALITY

The decline in fertility began in the second third of the 19th century among the nobility, officials, the upper stratum of the urban population, and also among peasant serfs of landowners. In the second half of the 19th century it gradually encompassed all other groups of the population and all regions of European Russia. As a result, between 1841 and 1920 the total birth rate in generational cohorts of "mothers" compared with the birth rate in cohorts of "daughters" decreased by 2.3 times, according to an estimate by S.V. Zakharov (Table 10).

As in the case with nuptiality, the decline in fertility was influenced by economic, cultural and psychological factors, among which the increase in population density and the corresponding decrease in natural resources per capita in the village in the second third of the 19th century should be emphasized, as well as the changing cultural standards among the educated and urban classes. It is important to underline the fact that the decline in fertility did not occur spontaneously, but consciously, as a result of the decrease in marriage and of the use of birth control starting in the second third of the 19th century (more on this below). In Russia, this began at a higher level and later than in most developed countries - 30-40 years later, on average, than in most European

countries, and nearly a century later than in France. However, over time the differences decreased (Table 11).

Table 10. Total fertility of real generations in Russia in 1841-1920

Year of birth		Total fertility		Ratio of fertility in cohorts of “daughters” to that of “mothers”
Cohort of “mothers”	Cohort of “daughters”	Cohort of “mothers”	Cohort of “daughters”	
1841-1845	1871-1875	6.84	6.96	1.017
1846-1850	1876-1880	6.9	6.85	0.993
1851-1855	1881-1885	7.08	6.2	0.876
1856-1860	1886-1890	7.11	5.49	0.772
1861-1865	1891-1895	7.12	5.5	0.772
1866-1870	1896-1900	7.2	5.23	0.726
1871-1875	1901-1905	6.96	4.59	0.659
1876-1880	1906-1910	6.85	3.66	0.534
1881-1885	1911-1915	6.2	2.82	0.455
1886-1890	1916-1920	5.49	2.46	0.448

Source: [Zakharov 2002: 19-26; 2003: 3-12].

Table 11. Total fertility rate from the 1800s through the 1960s in Russia and a number of other countries, per 1000 people

Country	Years							
	1800s	1850s	1880s	1900s	1920s	1930s	1950s	1960s
Russia	50.3	51.5	50.3	47.2	44.0	34.6	25.9	20.0
Austro-Hungary*	39.5	37.8	38.0	34.9	20.5	14.9	15.9	17.9
England	—	34.1	32.9	28.7	19.3	15.1	15.7	17.6
USA	57.7	45.3	39.8	31.2	25.0	19.2	24.8	20.3
Germany	38.3	35.4	37.0	33.6	21.1	17.8	16.1	17.3
France	32.0	26.4	24.2	20.7	19.1	15.9	18.0	17.5
Japan	—	—	26.9	32.1	34.1	30.2	19.8	17.7

* Austria since 1918.

Source: [Mironov 2015: vol. 3: 753-756].

Throughout the 18th to the early 20th century mortality among the Orthodox population of Russia was at a very high level both in the city and the countryside, among the common people and among the privileged members of society. In the 18th century, the overall mortality rate in the city ranged between 40 and 60, and in the village, between 30 and 40 per 1000 people. In the first half of the 19th century, the fluctuations in mortality evened out somewhat over the years, but the average level remained high, as before: in the city about 49, in the village 35 per 1000 [Mironov 1990: table 2]. Starting in the 1860s, mortality began to decline gradually: in the city, the overall mortality rate between 1851-1859 and 1909-1913 fell from 53 to 27, in the village - from 39 to 32 per 1,000 [Novoselsky 1916a: 45-46; 1916b: 180-187]. The decline in mortality was widespread, but was more intense in the city than in the countryside, more significant in large cities than in small ones, more rapid among the privileged classes than the lower classes, and began earlier in the western provinces than in the central and eastern ones. The overall mortality rate was reduced mainly due to a drop in infant mortality [Avdeev 2008].

The level of both rates was much higher in Russia than in most developed countries: in the 1900s, Russia lagged a century behind in these indicators. In terms of overall mortality, a leveling

out occurred in the 1950s (Table 12), while for infant mortality the differences decreased, but parity has still not been achieved (Table 13).

Table 12. Total mortality rate from the 1800s through the 1960s in Russia and a number of other countries, per 1000 people

Country	Years							
	1800s	1850s	1880s	1900s	1920s	1930s	1950s	1960s
Russia	36.8	39.8	35.4	30.2	22.9	18.0	8.5	7.4
Austro-Hungary*	28.2	32.1	29.5	23.7	15.7	13.7	12.4	12.8
England	—	22.1	19.2	16.9	12.2	12.0	11.6	11.7
USA	—	19.5	18.4	15.8	11.9	11.0	9.5	9.5
Germany	25.2	26.6	25.3	19.3	12.9	11.4	11.0	11.6
France	28.0	23.9	22.1	19.8	17.2	15.5	12.2	11.1
Japan	—	—	19.6	20.9	20.6	17.6	8.2	7.0

* Austria since 1918.

Source: [Mironov 2015: vol.3: 753-756].

Table 13. Infant mortality rate from the 1800s through the 1960s in Russia and a number of other countries, per 1000 births

Country	Years							
	1800s	1850s	1880s	1900s	1920s	1930s	1950s	1960s
Russia	—	272.0	268.0	250.0	206.0	182.0	60.9	29.0
Austro-Hungary*	188.0	250.0	249.0	213.0	129.0	93.6	49.0	29.7
England	—	155.0	142.0	132.0	73.8	59.0	26.0	19.8
USA	—	127.0	160.0	96.5	73.1	56.8	27.3	24.0
Germany	294.0	172.0	167.0	193.0	112.0	65.1	44.0	26.4
France	185.0	172.0	167.0	137.0	101.0	75.0	40.0	23.3
Japan	—	—	—	—	148.0	114.0	42.0	19.4

* Austria since 1918.

Source: [Mironov 2015: vol.3: 753-756].

The decline in mortality in the 1860s was due to an increase in the living standards of the population and an improved diet [Mironov, 2012: 697-701], as well as to the growth of the cultural level of the population and the expansion of free medical care. From 1850-1913 the literacy rate for those over the age of 9 rose from 15 to 40% [Mironov 1991: 82]. In 1837, there were 6,800 doctors in Russia (not including dentists), in 1846 – 8,700, in 1880 – 13,500, and in 1913 – 28,100 [Khanykov 1851: 31-32; Mironov 1991: 144]. The number of medical stations, where peasants received free medical assistance, increased between 1870 and 1913 from 530 to 2,970, or 5.6 times [Novoselsky 1916b: 184]. But in this respect Russia still lagged far behind the advanced European countries (Table 14).

In parallel with the drop in mortality, there was a rise in life expectancy. In the years 1838-1850, newborn boys of the Orthodox faith could expect to live approximately 25 years, girls – 27; in 1904-1913 the corresponding figures were 32.4 and 34.5 years [Vosproizvodstvo naseleniya SSSR... 1983: 61]. In the 1900s, Russia was about 100 years behind the leading countries; in the 1950s, the gap was overcome (Table 15).

Table 14. Features of the availability of medical care in Russia and some European countries at the end of the 19th century

Country	Number of doctors		Per doctor		
	Total	Per 1 million people	Number of people	Territory, km ²	Radius, km
European Russia	13 475	155	6450	1352	21
Norway	502	275	3630	641	14
Austria	10 690	275	3630	28	3
Italy	8580	280	3570	35	3
Spain	5200	305	3280	99	6
Germany	16 270	355	2820	33	3
France	14 380	380	2630	37	3
Belgium	2160	390	2540	16	2
Netherlands	1860	410	2440	18	2
Great Britain	22 105	578	1730	10	2

Source: [Khlopin, Erisman 1899: 225].

Table 15. Life expectancy at birth from the 1800s through the 1960s in Russia and a number of other countries, in years

Country	Years							
	1800s	1850s	1880s	1900s	1920s	1930s	1950s	1960s
Russia	—	25.8	30.0	33.5	44.4	46.9	68.1	69.1
Austro-Hungary*	—	—	—	40.1	—	57.0	64.5	69.8
England	—	42.4	45.5	53.4	57.6	60.8	70.3	71.0
USA	—	41.0	43.5	50.6	58.7	63.7	69.9	71.0
Germany	—	—	46.6	49.1	57.4	61.4	66.5	70.5
France	39.6	39.8	47.0	50.5	54.2	58.8	68.1	71.4
Japan	—	—	43.6	44.5	44.2	48.3	66.2	71.7

* Austria since 1918.

Source: [Mironov 2015: vol.3: 753-756].

In the years 1896-1897 the total fertility of the Russian population was 54% of the physiological maximum (which is taken to be the marital fertility of the Hutterites, members of an American religious sect distinguished by good health and a total lack of birth control), and marital fertility was 76% [Vishnevsky 1977: 131].

INNOVATIONS AND DEVIATIONS IN DEMOGRAPHIC BEHAVIOR

Deviations in demographic behavior can be seen as innovations at the individual level directed against traditional attitudes and dominant practices. The scale of deviations shows the number of people who are ready and inclined to change patterns of traditional behavior. These include premarital sex, extramarital affairs and illegitimate children, divorce, suicide, abortion and infanticide, and contraception.

Premarital and extramarital sex

For the entire period under investigation, the desire to prevent pregnancy or to get rid of an unwanted child was characteristic of those women who had extramarital sex, since giving birth outside of marriage was considered tremendously disgraceful both for the woman and her relatives. Very often mothers of illegitimate children were the wives of soldiers whose husbands had entered

the army² [Shcherbinin 2004: 95-132]. How many such women were there? Data on the number of women aged 16-49 with illegitimate children among the entire female population of reproductive age, which was about 1%, can provide us with an approximate answer to this question. Judging by the Yaroslavl gubernia of 1850, which occupied a middle position among the 50 provinces of Russia in terms of the percentage of illegitimate children among all newborns, we can assume that by the mid-19th century there were some 260,000 women with illegitimate children [*Istoriko-statisticheskie tablitsy* ... 1901: 92]. They were distributed unevenly between the city and the village. In the country as a whole between 1859 and 1863 about 26% of illegitimate children were born in cities, and 74% in rural areas, while in 1910 the corresponding figures were 41 and 59% [Military Statistical Collection 1871: 66-68; The movement of the population ... 1916: 51]. The distribution of illegitimate children between the city and the village depended on the existence of large cities in the province. For example, in the 1850s about 67% of all the illegitimate children in the Moscow gubernia were born in the city of Moscow. In the Yaroslavl gubernia, which had well-developed, if less significant, cities than Moscow, 55% of all illegitimate children of the province were concentrated in cities, and in the Poltava gubernia, which had no large cities, the share of illegitimate children in cities was only 25%, with the remaining 75% being born in the countryside³ [*Istoriko-statisticheskie tablitsy* ... 1901: 92]. As we can see, even before emancipation there were many women seeking to get rid of an unwanted child both in the city and in the countryside; after emancipation, their numbers became even greater.

The proportion of illegitimate children registered by Orthodox priests among the total number of newborns in the late 18th and first half of the 19th century ranged from 2% in the Kiev gubernia to 7% in the Moscow gubernia, or an average of 3.3% in European Russia⁴, [*Pamjatnaja knizhka* ... 1861: 325; *Pamjatnaja knizhka* ... 1871: 137-140; Laptev 1861: 169, 180; Steel 1867: 205; Lipinsky 1868: 443]. This is somewhat less than in Western European countries, where the proportion of illegitimate children is estimated at 2% in 1680 and 6% in 1820 [Riddle 2001: 186]. In the post-reform period, the number of illegitimate children increased in absolute terms, but very slightly: in European Russia in 1859-1863 an average of 99,000 were registered annually [Military statistical collection 1871: 66-68], and in 1910 – 106,000⁵ [Shcherbinin 2002: 142-146]. As a result of faster population growth, the percentage of registered illegitimate children among Orthodox Christians declined: in 1859-1863 it was 3.4%, in 1870 - 3.0%, in 1885 - 2.7%, and in 1910 - 2.3%.⁶ So, it turns out that as modernization, urbanization and industrialization took place, there was a relative decrease in the number of illegitimate children among Orthodox women, while there was an increase among Old Believers, Catholics, Protestants and Jews. How can this paradox be explained? There are researchers who consider the available data on children born out of wedlock to be underestimated, due to the fact that over time the methods of record-keeping and the policy of foundling homes regarding the admission of illegitimate children changed [Ransel

² For a detailed analysis of the situation of illegitimate children, especially those belonging to soldiers' wives, see [Shcherbinin 2004].

³ RGO (Arkhiv Russkogo geograficheskogo obshchestva), R. 22, op. 1., d. 3; dd. 1, 2; RGIA (Rossiiskii Gosudarstvennyi istoricheskii arkhiv), f. 796, op. 138, d. 2476 (Poltava Gubernia).

⁴ RGIA, f. 796 (Chancery of the Synod), op. 63, d. 69; op. 445, dd. 423, 426; op. 95, d. 1189; op. 96, d. 1007; op. 104, d. 1364; op. 128, d. 2192; op. 2192; op. 131, d. 260; RGO R. 22, op. 1, d. 3 (Moscow); f. 16, d. 1 (Kiev).

⁵ A significant portion of them were children of soldiers' wives.

⁶ Since 1870, data on illegitimate children have been published in the annual "Dvizhenie naseleniya v Evropeyskoy Rossii".

1982: 11-27]. However, this cannot explain the reduction in the percentage of illegitimate children by a third, as this would mean an annual underestimation of several tens of thousands of newborns. The only satisfactory explanation, in my opinion, is that women who had extramarital relationships used contraceptive methods, and those who became pregnant out of wedlock got rid of the fetus by abortion or artificial miscarriage. Only this explanation can reconcile the seemingly contradictory facts observed in the post-reform period: 1) the number of unmarried women who had extramarital sex, according to the general opinion of contemporaries, increased; 2) the possibility of concealing the fact of the pregnancy and illegitimate birth from both relatives and priests increased; 3) among Old Believers, Catholics, Protestants, Jews and Muslims, unmarried women who gave birth to children were not condemned as severely as among the Orthodox, and their children were not discriminated against; 4) women had no reason to avoid registering an illegitimate child, first, because, according to religious beliefs, an unbaptized infant did not go to heaven, and secondly, because in 1891 the foundling homes to which children could be taken imposed restrictions on their admission, demanding certificates from the police or priests confirming that they were indeed illegitimate⁵ [Afinogenov 1903: 76]. If our assumption is correct, then the number of women who resorted to birth control or had an abortion over the course of any particular year exceeded 125,000 by 1910. This figure was obtained as follows. In the years 1859-1863 the number of illegitimate children was 99,000, and their share among all newborns was 3.4%. If women did not take measures against the birth of illegitimate children, then their number would have been 232,000 in 1910 (according to the percentage of illegitimate children in 1859-1863 among the total number of newborns in 1910). Meanwhile, in fact, 106,000 illegitimate children were registered.

An increase in the number of foundlings could serve as a good indicator of an increase in the number of unwanted children. But, although children were abandoned all over Russia throughout the entire period under investigation, there is no complete information on this. In 1867, official data on abandoned babies in European Russia were published for the first and only time, and put the number of foundlings at 2,254. As the compilers of the statistical compendium in which these data were published indicated, the information is incomplete [Population Movement ... 1872: IX, 10-11]. The increase in the number of persons prosecuted for abandoning babies attests to the growth of the phenomenon. In 1839, 47 men and 123 women were charged with abandoning babies, in 1873 the corresponding figures were 93 and 118, in 1892 - 206 and 805, in 1913 - 410 and 1759 [Svod statisticheskikh svedeniy... 1875, 1896 , 1916]. In reality, the number of abandoned babies was many times greater. For example, in 1867, according to extremely incomplete official data, the number of abandoned babies was 10 times greater than the number of persons prosecuted for abandoning them. The spread of infanticide can also serve as an indication that many women did not want children and tried to get rid of them [Uspensky, 1954: 110-114].

The two largest foundling homes in Russia, located in Moscow and St. Petersburg, provide a more adequate idea of the dynamics of the number of unwanted children. According to D. Ransel's estimates, in the years 1791-1800 both homes took in 3,342 babies per year, in 1841-

⁵Mothers of illegitimate children sought to hide the fact of birth not from priests, but from relatives and friends. To this end, they often changed the place of residence when the delivery approached: the peasant women left for the city, the townspeople moved to another apartment or to another city. This fact is noted in fiction; see, for example, Krestovsky's novel *The Petersburg Slums*.

1850 – 13,092, in the years 1871-1880 – 20,169, in the years 1881-1890 – 24,298, in the years 1891-1900 – 17,785, in 1901-1910 – 19,218: that is, from the end of the 18th to the beginning of the 20th century the number of foundlings increased 5.8 times, while the population of Russia increased 2.9 times [Ransel 1988: 303-308]. The number of babies taken in by foundling homes depended not only on the number of mothers who wanted to give them up, but also on the capacity and policies of the homes themselves. Therefore, for example, a decrease in the number of foundlings in 1891-1910 does not mean that the number of unwanted children had decreased, simply that foundling homes had introduced restrictions on receiving them, which immediately decreased the number of parents desiring to put their children there.

Since premarital sex was condemned and punished, until 1914 most people of both sexes, with the exception of the nobility and the intelligentsia, began having sex only after marriage. The mean age of all grooms and brides at the time of their *first* marriage can be considered the *approximate* age of their sexual debut. In the years 1867-1910 this age was 24.2 years for men, and 21.4 years for women [Tolts 1977: 139]. Some authors, relying on separate evidence, and not on statistics, argue that at the end of the 19th century less than half of peasant men were virgins at the time of their first marriage (Kryukova 1992: 48; Tikhonov 1891: 136⁶). Others talk about the complete freedom of sexual relations between young men and women, and even about the survival of a such a primitive relic as *svalnyi grekh* (indiscriminate sin), when young people would gather, left alone by their elders, and would extinguish the light and engage in open relations with each other [Semenov 1996: 39-46; Balov 1898]. As a common custom this seems unlikely. If the vast majority of women retained their maidenhood until marriage, then how did men find partners, given that prostitution in the village was a rare phenomenon? If voluntary relations before marriage were common, then undoubtedly many illegitimate children would have been born, which is not recorded in the sources. One might grant the existence of such remnants among sectarians, or among the inhabitants of remote villages. For example, among the Old Believers, extramarital relations were allowed and the children born of them were recognized along with legitimate children [Bushnell 2011]. Observers from the city probably perceived a custom that existed, for example, in the villages of the Saratov gubernia as sexual freedom: "After a village gathering, the girls let the men spend the night. Lying down with their chosen man, they let themselves be kissed, but rarely went so far as to sin" [Minh 1890: 110].

However, among students in large cities sexual experience began earlier. According to a survey of two thousand Kharkov students in 1902, 73% made their sexual debut at the age of 17-20 [Favre 1910], and according to a similar survey of 2,150 Moscow students in 1904, 50% of them engaged in sexual activity at the age of 14-17, including 22% at the age of 16 [Members 1907: 1072-1111]. Similar results were obtained from the so-called "student sex censuses" at the universities of Tomsk and Yuryev (Tartu). In 1908, V. Zhbakov conducted the world's first questionnaire survey of the sex life of 6,000 female students and teachers in Moscow, 80% of whom were under the age of 25 years. This was so novel and provocative that the police confiscated the answers to the questionnaire. An analysis of the remaining 324 responses showed that almost 90% of Moscow students and teachers aged 17 to 20 years were virgins, and at the age of 21-25 years - 45.4%. Among those who had never been in a formal marriage, the proportion of

⁶ V.P. Tikhonov stated: "Almost all the games of local youth had as their finale the beginning of sexual intercourse."

those who had sexual experience was 18% [Zhbankov 1922: 225]. For comparison, in 1957, among the students of Leningrad 99% of girls were still virgins before the age of 16; by 1971 the figure had dropped slightly, to 94%, and by the early 2000s was down to 42%. In the 2000s, 20% of high school girls had a sex life, and a very active one. By the 1990s, the sexual activity of Russian youth began earlier than that of the British, Americans or Norwegians [Golod 1996: 59; Denisenko, Dalla Zuanna 2001: 83-87; Con 1990: 171; 1997: 291].

THE REGULATION OF FERTILITY

In the last third of the 19th century, methods of regulating fertility began gradually entering people's lives, first in cities among the educated and affluent classes⁷ [Meltsin 1999: 55-62], and then among the urban lower classes and peasants [Mukhina 2012: 147-160; Vishnevsky 2005: 1: 271-276; Diachkov 2003: 207; Moiseenko 1984: 73-86; McLaren 1990; Riddle 1997].

In 1871, the judicial investigator V. Magnitsky presented an essay on criminality to the Russian Geographical Society in which he said that, while Russians considered the expulsion of the fetus to be a terrible sin, nonetheless there were women engaged in this practice in every village.⁸ To cause an artificial miscarriage, peasant women used mechanical means (lifting weights, jumping, tight bandaging and kneading of the abdomen, shaking the whole body, etc.), medicines (from various herbs to consuming mercury and phosphorus internally), aborticide, lengthening the lactation period and abortion. To expel the fetus, women healers gave them mercuric chloride to drink or advised them to swallow small disks of tin. To prevent pregnancy, after coitus women would immediately drink a spoonful of water with gunpowder, having first washed their hands with their urine⁹ [Afinogenov 1903: 327; Fedorov 1994: 18; Shcherbinin 2004: 127-128]. These means, though highly imperfect, nonetheless had some effect (Pilsudski 1910: 14-16).

According to the testimony of a priest of the Novgorod gubernia, F.V. Gilyarovsky, in the 1860s peasants who sought to prevent pregnancy increased the duration of breastfeeding "beyond the legal limits - two Lents", i.e. more than 2 years. "Mothers continue to breastfeed a child up to the age of four or five, sometimes feeding another's child and at times even toothless puppies, not to mention even more unnatural ways of extracting their milk" [Gilyarovsky 1866: 50]. Extending the lactation period was widely practiced in other gubernias too [Afinogenov 1903: 99], up until the 1920s. "If a subsequent pregnancy does not occur for a long time," it was noted in one study of the 1920s, "they breastfeed until the child is too ashamed to continue, until the age of 4, 5 or 7 years" [Sinkevich 1929: 58-59; Afinogenov 1903: 99]. This method did, to some extent, protect women from a new pregnancy, because, according to Russian doctors, about 80% of women did not menstruate while breastfeeding [Grigoryev 1883].

By the beginning of the 20th century, the range of birth control methods had increased to include abstinence, cyclicity and coitus interruptus, condoms, uterine rings, contraceptive caps,

⁷ In the last third of the 19th to the early 20th century the Dolgorukov princes deliberately regulated fertility in order to limit the number of heirs.

⁸ RGO, f. 14, op. 1, d. 27.

⁹ Ibid.

vaginal douches and suppositories. However, these were used only by educated and wealthy women. Contraception had become such a popular topic among them that a well-known manual, K.I. Drexler's "Contraceptive Means in Modern Marriage", was issued seven times between 1907 and 1914 [Drexler 1929; Bellin 1889; Boryakovskiy 1893; Van der Bown 1909; Wojciechowski 1888; Popov 1903; Rohleder 1909].

Abortions. According to church law, all means of preventing pregnancy were considered a sin, and aborticide, with the aid of a potion or the help of a midwife, was punished with a penance of between 5 and 15 years. Under civil law, abortion was banned and punishable, and both doctors and patients were prosecuted. The Penal Code of 1845 equated expulsion of the fetus with infanticide, punishable with hard labor for a period of 4 to 10 years. The view that the use of any means of preventing pregnancy and artificially inducing a miscarriage was a major sin was so common that women who used them carefully concealed the fact from everyone (both from neighbors and doctors) even in the 1920s, when abortions were officially allowed [Sinkevich 1929: 46; Lebina 2007]. Fetuses were most often buried in the earth, under the house; less often they were hidden in manure piles and in winter thrown into rivers and streams. For a long time, not only the church and the law, but also doctors were hostile towards abortion [Lebina 2007; Engelstein 1991: 185-207; 1992: 334-358]. In 1889, at the N. I. Pirogov Third Congress of the Society of Russian Doctors, abortion was recognized as a "moral and social evil". Between 1840 and 1890, the total number of abortions officially authorized for medical reasons in all Russian maternity hospitals was a mere 247; by 1910, if we can judge by St. Petersburg and Moscow, their number had increased almost 5-fold, but still remained low (Mikhailov, 1895: 417; Demograficheskaya modernizatsiya Rossii, 2006: 42).

Time, however, worked in favor of liberalizing abortion. Doctor A.O. Afinogenov, who practiced in the late 19th and early 20th century, along with many participants in the Twelfth Congress of the Society of Russian Physicians, noted in 1913 that by the 1880s the practice of abortion had begun to reach the villages, especially those near cities [Afinogenov 1903: 57, 99; The Twelfth Congress ... 1913: 2: 92, 211]. In the villages, they were carried out mainly by "grannies" and women healers¹² [Semenova-Tian-Shanskaya 1914: 56-58]. City dwellers had become familiar with abortions earlier, and at the beginning of the 20th century industrial cities were seized by an "abortion epidemic". "In the working environment they began to look at artificial miscarriage as something very ordinary and, moreover, very accessible" [Vigdorchik 1914: 217]. Kharkov physician P.N. Chukhnin, who in 1893 estimated the number of abortions and miscarriages at 22% of all pregnancies, noted: "Many of his patients expressed their unwillingness to have children, and many talked about the precautionary measures they took to protect themselves from pregnancy; if we add to this the fact that some miscarriages were, apparently, deliberately caused, we will see that a modern woman has a strong desire to limit the number of pregnancies" [Chukhnin 1894: 1: 533].

The number of "criminal" abortions cannot be estimated even roughly from the data on those prosecuted for them, as they were carefully concealed from church and secular authorities. In the 1830s, an average of 108 men and 284 women were charged each year for "the extermination

¹² RGEM (Rossiiskii gosudarstvennyi etnograficheskii muzei), f. 7, op. 1, dd. 68, 216, 473, 499, 552.

of pregnancy” [Report of the Ministry of Justice 1835-1841]. In subsequent years, the number of abortions increased. Despite this, in 1873, 7 men and 10 women were convicted, in 1892 - 3 and 16, respectively, and in 1913 - 34 and 210 [Svod statisticheskikh svedeniy... 1875, 1896, 1916]. In the years 1897-1906, an average of 8 women in Russia were convicted each year for exterminating a fetus [Gernet 1911: 67]; in 1910-1916 the figure was from 20 to 51 [Bezgin 2004: 174], with 2.5 times more being charged with the crime. The decrease in repression is explained by the fact that under the new judicial statutes of 1864 prosecution for abortion weakened, the "criminals" learned to hide from justice, and perhaps most importantly, not only society but law enforcement agencies began to take a more lenient view of the artificial termination of pregnancy. In 1913, under the influence of the social movement for the abolition of the criminal prosecution of doctors and patients for abortions, The Twelfth Congress of the Society of Russian Physicians supported this request, although not unanimously. In February 1914 a meeting devoted to the topic of abortion was held in St. Petersburg by the Russian group of the International Union of Criminologists, attended by prominent Russian doctors, forensic specialists and lawyers. Two reports were heard, one by M.N. Gernet defending the need for full legalization of abortion, and one by E.M. Kulisher advocating partial legalization (allowed only for medical reasons). After a heated two-day debate in which 30 people participated, the group proceeded to adopt a resolution. By a majority of votes (38 to 20, with 3 abstentions) Gernet's proposal, demanding the exclusion of abortion from criminal offenses, was passed [The Twelfth Congress ... 1913: 2: 25, 88, 92, 211; Gernet 1916; Kulisher 1916; Report X of the general meeting ... 1916: 271-333, 354-398, 400]. Although abortion was legalized only in 1920 [Popov 1994: 5-7], the proposal was undoubtedly applied before that, though under great secrecy. It was assumed that less than 1% of women who had abortions were actually brought to court, and in 75% of cases they were acquitted [Tretyi s'ezd Obshchestva russkikh vrachey... 1889: 177-178; Gernet 1916: 237-238]. According to an approximate and greatly inflated estimate, in St. Petersburg the number of abortions increased 10-fold in the last third of the 19th century, which represented about 20% of the number of births [Sadkovasova 1969: 12]; in Moscow in the 1910s, the figure was about 10,000 per year [Tretyi s'ezd Obshchestva russkikh vrachey ... 1889: 177-178; Gernet 1916: 237-238].

Condoms. Condoms also became an important means of preventing pregnancy. For example, in the city of Kharkov, not Russia's largest, they came into use at the end of the 1860s [Bagaly, Miller 1912: 2: 123]. Starting in the 1890s, they became ubiquitous and widely applied in the educated part of the population. However, for religious reasons and because of their high cost, they did not penetrate into peasant life. Condoms were advertised in newspapers and sold in pharmacies and stores selling medical instruments and rubber goods [Boryakovsky 1893: 886-887; Milyutin 1946: 93-94]. In 1911-1913, according to a price list for imported condoms (they were not manufactured in Russia) of the famous St. Petersburg rubber goods stores G. Godefroi and D. Rogers, as well as other firms, a dozen rubber condoms cost from 0.8 to 6 rubles, while those made from fish bladders cost from 2.5 to 7 rubles – that is, between 7 and 59 kopecks each. But they were not sold by the piece, and to buy a dozen of even the cheapest condoms a peasant or worker would need to work an entire day at one of the most difficult jobs [A Compendium of Statistical and Economic Data ... 1917: 526-527; Cities of Russia ... 1914: 30, 118-119, 264-265, 434-435]. This was rather expensive, but still obtainable. However, while in large cities condoms could be bought freely, residents of most cities and rural areas had to order them by mail and pay for the

shipping, the cost of which far exceeded the price of the goods. For a simple worker (a peasant, laborer, artisan or petty bourgeois) this was not possible, due both to the high cost and illiteracy.

The regulation of childbirth gradually entered people's lives and began to produce results. Over the 30 years from the 1880s to the 1910s, the total birth rate in the country as a whole decreased only by 6.5 points (from 50.4 to 43.9 per thousand). This suggests that the general population did not control the number of their children. According to A.G. Vishnevsky's calculations, at the turn of the 20th century Russian women were using only half of their biological potential (instead of 12-13 times, they gave birth on average 6-7 times¹⁰ [Novoselsky 1914]), mainly due to the fact that marriage occurred at a later age than before (2.38 births), due to poor health and deliberate prevention of births (1.60 births) and to premature death (1.26 births). As we can see, birth control explains only a small share of the decrease in fertility (table 16).

Table 16. Factors determining the average number of children per woman in Russia at the turn of the 20th century

The average number of children a woman could have given birth to in her life	12.44
Gave birth to	6.24
Did not give birth to	6.20
including:	
Due to death of some women under 50	1.26
Due to some women not getting married	0.55
Due to not all women getting married at age 16	2.38
Due to not getting married after being widowed	0.41
Due to poor health or deliberate prevention of birth	1.60

Source: [Reproduction of the population ... 1983: 282].

Remote rural regions, where the majority of the population lived, were barely affected by the new trends. According to a survey conducted in 1927, 10 years after the revolution, when abortions and contraception were no longer banned, only 9% of married Ukrainian peasant women used some method of preventing conception, most often coitus interruptus [Tomilin 1987: 107-109]. In 1990-1993, David Ransel conducted field research among Russian peasant women from the Novgorod, Smolensk, Moscow, Sverdlovsk and Ulyanovsk regions in order to trace changes in ideas about marriage, birth control, childbirth and childcare during the years of Soviet power. He took down and recorded on tape 89 in-depth interviews (based on a questionnaire that included 44 questions) of 70 Russian and 19 Tatar women. He chose respondents, firstly, from women who had spent their entire lives in the village, and secondly, women of different ages. Ransel divided all the respondents into three generations: those born in 1899-1911 (27 people), in 1912-1930 (45 people) and in 1931-1954 (17 people). Analysis of the interviews led to the following conclusions. The first generation of women, born in 1899-1911, had spent their childhood under the old imperial regime, and their youth in the Soviet village before the institution of the collective farm. They bore many children; interference in the mystery of conception and birth was considered sinful, and attempts to regulate their number were limited to lengthening the lactation period. Their attitude to abortion was quite hostile, so few of them took advantage of the legalization of abortion in 1920-1936. Afraid of the evil eye, they gave birth without any outsiders present (either alone or with the help of a midwife) and a few days later returned to work. Women of the second

¹⁰ Total fertility rate among women of childbearing age (15–49) in 1896-1897 was 7.06.

generation, born in 1912-1930, for the most part grew up and were educated under Soviet power and the collective farm system. They controlled their fertility through condoms and illegal abortions, since almost the entire reproductive period of their lives occurred during the period that abortion was prohibited (1936-1955). Women of the third generation, born in 1931-1954, as a rule married in the post-Stalin period. They freely controlled their fertility through the use of abortions and condoms. The Tatar peasant women had more similarities to than differences from the Russian peasant women. Their first generation had never known contraception, and had a negative attitude towards abortion. As for the second generation, they also took no practical measures to regulate the number of births other than the prolongation of lactation, did not recognize abortion, and did not use condoms because of the objections of men. Only the third generation of Tatar peasant women began to regulate the birth rate mainly through abortion and condoms [Ransel 2000].

A different pattern was observed among residents of large cities and privileged segments of the population. Fertility in St. Petersburg from 1861-1865 to 1911-1915 fell from 38 to 26 per 1000 people. In Moscow in 1867-1880, the number was already only 23 per 1000, but, unlike Petersburg, by 1911-1913 had risen to 29 per 1,000, due to the huge influx of peasants [Rashin 1956: 234, 239]. This level of fertility indicates that it had begun to be regulated, as is also evidenced by the fact that total and marital fertility had not only inter-estate, but also intra-estate differences. In St. Petersburg in 1907-1912, women of the poor classes gave birth 3 times more often than representatives of the wealthy strata, and the wives of skilled workers half as often as the wives of unskilled workers [Novoselsky 1978: 136-142; Wigdorchik 1914]. A survey of 2,150 students at Moscow University in 1904, mostly from the middle class (67% of respondents named their families' property status as average), found that 57% took measures against conception (25% - coitus interruptus, 16% - condoms, and 15% - other) [Chlenov 1907].

Divorce

Before the beginning of the eighteenth century, the dissolution of marriage was the prerogative of the priest of the corresponding parish. Matrimonial disputes among the privileged strata were resolved primarily on the basis of Byzantine church and judicial law, which had been brought to Rus and translated into the Church Slavonic language. But when it came to the common people, priests were often guided by ordinary law, and therefore there were up to 26 legal grounds for divorce. It was sufficient for both spouses to make a statement to their parish priest and receive from him a so-called divorce letter [Vladimirsky-Budanov 1900: 439-439; Rabinovich 1978: 215-216]. In some cases, they even got by without a priest. If both spouses agreed to the divorce, the husband gave his wife a "divorce certificate" and a "letter of settlement", which replaced the priest's decision. But if one of the parties did not want a divorce, it became a very difficult matter [Latkin 1909: 520-524]. "Unauthorized separations", as they were called in everyday life, took place during the entire period studied. To quantify this phenomenon is impossible - it was not recorded. However, according to the testimony of contemporaries, at the turn of the nineteenth and twentieth centuries such "separations" were more common than in the eighteenth and early nineteenth centuries, which gives us reason to assume that their frequency increased over time. They were practiced among all segments of society¹¹ [Rozanov 2004: 298-299; Ivanilov 2002:

¹¹ RGEM, f. 7 (V.N. Tenishev), op. 1, dd. 32, 279, 401, 431, 517, 519, 552.

127-129]. An agent of the Ethnographic Bureau, V.N. Tenishev from the Kaluga gubernia, noted in 1900 that there was no formal church divorce among the peasants, who didn't know the first thing about it. Spouses split up *de facto*, lived separately, sometimes started a new family; divorced women often went to Moscow and sometimes lived, without a wedding, with widowers. Quite often peasants turned to the district court. The court could not give a formal divorce, but only decide who was right, and who was to blame¹². "Separations" happened more often than one would expect, based on the normative model of demographic behavior.¹³ However, they were not widespread, due to the extremely negative attitude of society, the church and the state towards them¹⁴ [Tsaturova 2011: 93-160, 256-266; Zabolotnaya 2010].

During the 18th century the Russian Orthodox Church (ROC) transferred the divorce process to the consistory and made it official, reducing the number of formal grounds for divorce to four: 1) proven adultery; 2) an unexplained long absence; 3) a court sentence involving the deprivation of all property rights; 4) the taking of monastic vows by one of the spouses on condition of a mutually amicable agreement, or a simultaneous taking of vows if the wife has reached 50 years of age, and there are no young children. Disagreement between spouses, physical disabilities, serious illnesses and beatings did not serve as a formal basis for divorce, but they did give the spouses some freedom to separate. The establishment of a close relationship or a subsequent marriage by one of the spouses in the absence of the other made the previous marriage null and void. [*Svod zakonov* ... 1857; Latkin 1909: 520-521]. In 1806, a fifth cause for a legitimate divorce appeared: "physical incapacity for marital cohabitation", which was tantamount to recognizing a serious illness as the basis for a divorce.¹⁵ The ROC's effective institutional control over matrimonial affairs could be established only after the introduction of the "Charter of Spiritual Consistories" in 1841, which strictly codified the conditions necessary for divorce and its procedure [Freeze 2009: 125-126].

It should be taken into account that spouses (usually women) could, through the Chancellery for the Receipt of Petitions Addressed to the Emperor, obtain the right to live separately without a divorce, which most often meant the *de facto* termination of marital relations and helped to break the deadlock created by the difficulties of divorce [Mareeva 2003: 33-36]. In the years 1890-1902 an average of 2,327 petitions per year were submitted to the Chancellery by women, of which 1,154 were granted, which is 10-20% higher than the number of divorces. It is interesting to note that the grounds for filing and granting petitions was different than for divorces (Table 17).

The grounds for divorce recognized by the ROC as legitimate (infidelity, an unexplained long absence or wandering lifestyle, incapacity for married life), figured only in 11.6% of petitions for separation; in other cases, the grounds were those recognized by the public and *de facto* crown authorities [Veremenko 2007: 324-337]. If women wanted to divorce and had sufficient formal

¹²RGEM, f. 7, op. 1, d. 552, ll. 2-3; d. 279, ll. 2-3; d. 517, ll. 16-18; d. 519, l. 27.

¹³ Information received by V.N. Tenishev of the Ethnographic Bureau, partially published [Everyday Life of Great-Russian peasant-farmers... 1993; Russian peasants ... 2004-2017].

¹⁴ In Orthodox Moldova in the 16th-17th centuries, family customs and traditions condemned divorce, but it nonetheless existed, and women even sometimes won their case.

¹⁵ By "incapacity for marital cohabitation" was meant solely a physical inability to perform sexual intercourse, which required the doctor's conclusion about a man's inability and proof of a woman's virginity.

grounds for this, they usually sued in court for divorce; in the absence of such grounds, they petitioned the Chancellery. The right to live separately was, in effect, a substitute for divorce.

Table 17. Grounds for receiving permission to live apart from one's husband in 1891 (for persons of the Orthodox faith)

Grounds	Petitions	%
Violent character, drunkenness, beating, extortion, squandering property	233	39.8
Ill-treatment	112	19.1
Not providing family material support	108	18.5
Depraved life style	51	8.7
Infidelity	50	8.5
Wandering lifestyle	14	2.4
Mental disabilities	8	1.4
Venereal diseases	5	0.9
Incapacity for marital life	4	0.7
Total	585	100.0

Source: [Veremenko 2007: 250].

If we merge the data on divorce and separation permits for the year 1891, it turns out that in about 56% of cases the reasons for women's unwillingness to remain married were the proverbial five legal grounds for divorce, and in 44% of cases, other reasons not recognized by the ROC. It is interesting to note that the grounds for separation among Orthodox Christians coincided with the formal conditions for divorce among Russian Protestants; among Catholics, divorce was forbidden, and obtaining the right to separation was fraught with great difficulties. For this reason, Protestants divorced 4 times more often than Orthodox Christians, and 12 times more often than Russian Catholics¹⁶ [Veremenko 2007: 294, 312, 318].

Table 18. The number of dissolved marriages among the Orthodox population of the Russian Empire in 1842 -1914

Years	Number of divorces	Divorces per 1000 marriages	Divorces per 1000 persons
1842-1850	74	0.143	0.002
1851-1860	80	0.156	0.002
1866-1870	782	1.377	0.015
1871-1880	917	1.587	0.016
1881-1890	1068	1.698	0.030
1891-1900	1047	1.202	0.012
1901-1910	1921	2.071	0.021
1911-1915	3650	4.302	0.037

Source: Estimated according to: [Vsepoddanneyshiy otchet ober-prokurora ... 1842-1914].

Due to the church's strict control over divorce in the late imperial period, they became an extraordinary event, and divorced persons can be considered aberrations [Bechasnov 1893: 8; Novoselsky 1916a: 29; Preobrazhensky 1901: 71-74; Freeze 1990; 2006]. According to information received from eparchies by the Synod, the number of dissolved marriages began to increase rapidly in the 1860s, but until 1917 remained at a low level (Table 18)

¹⁶Data for the years 1867-1876. Of the total number of divorces and invalid marriages the latter came to about 15% in the 1840s, in 1890-1912 - 3-6%.

Along with the growth in the number of marriages dissolved in the second half of the 19th and beginning of the 20th century, the composition of the grounds for divorce changed radically (Table 19).

Table 19. Grounds for divorce among the Orthodox population of European Russia in the mid-19th - early 20th century, %

Grounds for divorce	Divorces. %	
	1841-1850	1905-1912
Adultery	6.8	97.4
Incapacity for marital life	3.3	2.3
Missing or exiled to Siberia	89.9	0.3
Total	100.0	100.0

Source: Calculated according to [Novoselsky 1916a: 43; Prebrazhensky 1901: 71-74; Vsepoddanneyshiy otchet ober-prokurora ... 1915].

Until the 1850s, the main grounds for divorce were a spouse's unexplained absence and exile to Siberia; at the beginning of the 20th century, adultery was practically the only reason for it¹⁷ [Veremenko 2007: 317]. Formal divorces occurred mainly among the educated, privileged strata¹⁸ [Meltsin 1999: 271-277]. In the post-reform period, divorce made its way into the world of peasants, petty bourgeois and merchants. In the city, the number of divorced people per 1000 outpaced those in the village by a factor of 3; in avant-garde Petersburg, it was 7 times greater than in the entire urban population, and 21 times greater than in the entire country. Moscow lagged behind. According to the census of 1902, divorced men made up 1% of the population, and women - 1.5% [Perepis' Moskvyy ... 1904: 112-113], that is, 1.6 times less than in St. Petersburg. In terms of social class, the nobles were in the lead, divorcing on average 5 five times more often than the clergy and the peasants, and in St. Petersburg - 7 times more often than the clergy and peasants (Table 20).

In terms of the confession of those getting divorced, the leaders were Jews, Muslims and Buddhists; then came Protestants and Catholics, and, last of all, the Orthodox. Compared to Russians, Jews divorced about 9 times more often, Tatars and Bashkirs 8 times more often, Germans and Estonians three times, and Poles and Lithuanians 2 times more often [Obshchiy svod... 1905: Vol.2: 92-97, 176; Veremenko 2007: 374-377]. A significant increase in the number of divorces, especially in the city, reflected the changes that had begun in the demographic behavior of the population, which had occurred as a result of the reforms [Belyakova 2002; Kotlova 2002; Maksimova 1998; Mareeva 2001; 2003; Veremenko 2007; Leschenko 2004; Freese 2009]. The privileged, educated strata of the population accounted for the lion's share of divorces.

Thus, law, custom and practice allowed a person to dissolve a marriage when it became unacceptable to him. The main difficulty was not in the absence of formal opportunities, but in the fact that their implementation required knowledge, time and resources, and encountered opposition

¹⁷ Catholics and Protestants had more grounds for divorce, including malicious abandonment without help and harsh treatment. In the Warsaw Consistorial District in 1878-1882, these last two reasons accounted for about half of all divorces.

¹⁸ For example, among the Dolgoruky princes between 1711 and 1900 there were two bigamists, 11 divorcees - 1 in the 1730s, 1 in the 1810s, 1 in the 1830s, 3 in the 1840s, 5 in the years 1861-1900 - and a large percentage of bachelors and old maids [Meltsin 1999: 271-277].

from the population (especially the peasantry) that reacted negatively toward the dissolution of a marriage. Therefore, divorces occurred extremely rarely: in 1910-1914, there were at most an average of 3.7 terminations per 1000 marriages per year. For comparison, 100 years later, in 2010-2014, there were 535 divorces per 1000 marriages, or 146 times more.

Table 20. The number of divorced persons in St. Petersburg by estate in 1910

Social class	Number of divorced persons				Class size in the population. %	Divorce rate
	Men	Women	Both sexes	%		
Nobles	452	583	1035	26.4	7.2	3.7
hereditary	299	299	598	15.3	3.9	3.9
personal	153	284	437	11.1	3.3	3.4
Clergy	4	6	10	0.3	0.5	0.5
Honorable citizens	169	131	300	7.7	4.1	1.9
Merchants	42	36	78	2.0	0.7	2.8
Lower middle class	297	548	845	21.6	15.5	1.4
Retired lower officials	1	1	2	0.1	0.1	0.5
Peasants	522	780	1302	33.2	68.8	0.5
Natives of Finland	13	44	57	1.5	0.9	1.6
Foreign nationals	38	87	125	3.2	1.2	2.7
Unknown	38	128	166	4.2	1.1	4.0
Total	1576	2344	3920	100.0	100.0	1.0
Population. thousands	997.2	908.4	1905.6			
Divorced per 1000 persons	1.6	2.6	2.1			

Sources: [Petrograd according to the census ... 1915: part 1: 26-35; Veremenko 2007: 376-377].

If we compare Russia with other European countries, the United States and Japan, it turns out that at the beginning of the twentieth century (1901-1905), in most, not only Protestant, but even Catholic countries (where divorce was more difficult than in Russia), the number of divorces per 1000 people was significantly higher: in the UK - 0.02; France – 0.25; Germany - 0.2; in the USA – 0.8; in Japan - even 1.1, and in Russia – 0.01 (table 21).

Table 21. The number of divorces per 1000 persons from the 1800s through the 1960s in Russia and a number of other countries*

Country	Years							
	1800s	1850s	1880s	1900s	1920s	1930s	1950s	1960s
Russia	—	0.028	0.032	0.01	2.0	2.6	1.8	4.1
Austro-Hungary*	—	0.055	0.01	0.01	—	0.5	2.6	2.4
England	—	0.005	0.015	0.02	0.2	0.2	1.2	1.6
USA	—	0.3	0.42	0.80	3.1	3.3	4.7	5.3
Germany	—	0.035	0.09	0.20	1.1	1.4	2.0	1.9
France	0.02	0.035	0.09	0.25	1.1	1.1	1.5	1.3
Japan	—	—	—	1.10	1.7	1.4	1.7	1.6

*Austria since 1918.

Source: [Mironov 2015: vol. 3: 353-356].

SOCIAL AND ETHNIC FEATURES OF THE DEMOGRAPHIC TRANSITION

The degree of change in demographic indicators and the extent to which they affect different regions and individual social strata helps us to assess the depth of the population's involvement in the demographic transition [Mironov 2015: vol.3: 353-356]. Demographic innovations in the city

were more intensive than in the countryside, in large cities were more significant than in small ones, among the privileged and educated classes were faster than among the lower classes, and began earlier in the western gubernias than in the central and eastern ones (Table 22).

Table 22. Deviation of total fertility from the maximum possible (I_f), including due to changes in the marital fertility rate (I_g) and the proportion of married women (I_m) taking into account extramarital fertility (I_h) in 1896-1897 in European Russia and groups of its constituent gubernias*

Territory	Population, %	Total fertility (I_f)	Marital fertility (I_g)	Proportion of married women (I_m)	Extramarital fertility (I_h)
European Russia	100.0	0.54	0.76	0.69	0.047
Urban population	12.9	0.39	0.66	0.56	0.044
Rural population	87.1	0.56	0.78	0.71	0.019
Groups of gubernias					
Non-agricultural center	18.2	0.49	0.74	0.63	0.065
Agricultural center	30.0	0.59	0.79	0.74	0.033
Outlying colonized areas	19.6	0.59	0.76	0.76	0.047
West and Southwest	21.0	0.48	0.74	0.64	0.037
North and Northeast	8.6	0.56	0.78	0.68	0.076
Baltic States	2.6	0.29	0.57	0.49	0.032

* The above indices (Coale's indices) are related to each other by the following ratio: $I_f = I_g I_m + (1 - I_m) I_h$.
Maximum fertility is taken to be the fertility of the Hutterites.

Source: [Vishnevsky 1977: 109, 131].

In ethnic and confessional terms, there were more and deeper demographic changes among Jews, Protestants (Germans, Finns, Latvians, Estonians, etc.) and Catholics (Lithuanians, Poles, etc.), and fewer among Orthodox, Islamic, pagan and other non-Christian rural populations (Tables 23, 24).

Table 23. Marriage status of the population of different religions in European Russia without Poland and Finland in 1897, %

Religion	Unmarried		Married		Widowed		Divorced	
	men	women	men	women	men	women	men	women
Orthodox	56.0	52.1	40.3	39.4	3.7	8.4	0.03	0.04
Catholics, Lutherans	61.6	56.5	35.6	34.3	2.8	9.1	0.06	0.09
Jews	61.2	57.4	36.8	36.1	1.8	6.0	0.16	0.49
Muslims	58.0	45.9	39.4	45.6	2.4	8.4	0.10	0.12
Average	57.1	52.0	39.5	39.6	3.3	8.3	0.06	0.08

Source: [Obshchiy svod ... 1905: t.2: XXXVIII].

By 1897, Lutherans and Catholics who lived in the westernmost regions of the empire had the best demographic indicators [Vishnevsky 1977: 130-134; Marchenko 1977: 135-137; Tolts 1977: 138-140]. It should be noted that in the first half of the 19th century the demographic situation in the Baltics was already better than in the rest of Russia. Jews also had good demographic indicators. In some respects, they were even better than those of Catholics and Protestants: the Jewish birth rate was slightly lower, the marriage rate was higher, overall mortality and especially infant mortality were lower, and illegitimate children were virtually nonexistent. Their life expectancy was lower than among the Baltic peoples, perhaps because they had more children,

whose mortality rate was much higher than that of adults. In order to achieve such results by the end of the 19th century, they must have entered the stage of demographic transition in which the traditional type of reproduction gives way to the modern type in the second half of the 19th century, because in the middle of the century their demographic indicators differed little from those of Orthodox and Muslims. Despite the fact that they lived within the pale of settlement and experienced discrimination, Jews were among the first to enter into this stage of demographic transition.

Table 24. Some demographic characteristics of the population of different religions in European Russia in 1896-1904

Religion	Age at marriage, years		Total rates per 1000			Mortality of newborns per 1000 births	Share of illegitimate children, %
	men	women	nuptiality	fertility	mortality		
Orthodox	24.2	21.3	8.7	51.1	34.8	263.0	2.4
Catholics	29.1	23.3	6.9	36.5	22.3	151.0	3.4
Protestants	28.5	24.6	6.8	29.2	21.0	161.0	3.7
Jews	27.5	24.1	7.3	30.7	16.0	116.0	0.4
Muslims	27.6	22.2	10.9	43.9	27.7	158.0	0.2
Average	25.1	21.8	8.5	50.1	30.9	224.0	2.3

In the middle of the 19th century, the Muslims of European Russia (primarily the Bashkirs and the Volga and Crimean Tatars) differed little from the Orthodox in their demographic characteristics, but by the end of that century they had pulled ahead somewhat, to a position midway between the Orthodox, on the one hand, and the Catholics and Protestants on the other. It was especially advantageous that they differed from Orthodox believers in low infant mortality [Ershov 1898: 112-116; *Materialy po izucheniyu detskoy smertnosti* ... 1908: 92-97]. It is worthy of note that nuptiality among Muslims was higher than among Orthodox Christians, and fertility was lower, which indicates that the Tatars used the methods of birth control available to them more actively. Muslims of Central Asia, in terms of their demographic characteristics, were far behind not only European Muslims but also Orthodox [Karakhanov 1977].

The life expectancy for 11 nationalities in Russia in 1897 reflects well the level of demographic development of each of these ethnic groups (Table 25).

Table 25. Life expectancy at birth for 11 nationalities of European Russia in 1896-1897, years

Nationality	Men	Women	Nationality	Men	Women
Russians	27.5	29.8	Bashkir	37.2	37.3
Chuvash	31.0	31.0	Moldavian	40.5	40.5
Tatar	34.6	35.1	Lithuanian	41.1	42.4
Belorussian	35.5	36.8	Estonian	41.6	44.6
Ukrainian	36.3	39.9	Latvian	43.1	46.9
Jewish	36.6	41.4	<i>On average</i>	<i>31.3</i>	<i>33.4</i>

Source: [Ptukha 1928: 37-38].

In terms of this indicator, the Latvians were in first place, and the Russians in last. Ethnic differences in life expectancy were due, first of all, to the differing degrees of involvement of individual ethnic groups in the demographic transition from the traditional to the modern type of population reproduction. The Baltic peoples and Jews took this path earlier than others and by the end of the 19th century they had made considerable progress under the direct influence of the new

demographic relations taking shape in Western Europe, with which they had closer cultural, religious, economic and other ties. At the turn of the 20th century, the Baltic region was in all respects the most advanced region of Russia. The demographic transition of other ethnic groups began later, and so naturally they achieved less. The second factor determining the differences in life expectancy could be called a cultural one. It depended on their attitude to children, the quality of their care for them, the level of sanitation and all other living conditions that influenced mortality.

DEMOGRAPHIC AND POLITICAL REVOLUTION

In order to assess how much more effective reproductive behavior has become, three indicators are used: the gross reproduction rate, the net reproduction rate and the cost of simple reproduction (the ratio of gross and net rates), which shows how many girls a woman needs to give birth to in order to ensure the population replacement level, or the simple replacement of the parental generation. It is this ratio that serves as a measure of the efficiency of the reproduction regime, or the regime of the renewal of generations.

According to E.M. Andreev and A.G. Vishnevsky's calculations, the gross reproduction rate decreased between 1851-1863 and 1904-1913 from 3.261 to 3.089, while the net rate rose from 1.442 to 1.636, respectively, and the population replacement rate dropped from 2.261 to 1.839 [*Vosproizvodstvo naseleniya SSSR ...* 1983: 273]. Consequently, Russian woman began to give birth less often, but, in spite of this, each new maternal generation became more numerous. Moreover, the replacement of one maternal generation by another began to occur 23% more efficiently (2.261: 1.839), i.e., with fewer physical costs on the part of the woman and fewer material costs on the part of parents. Of course, this was still a very far from perfect model for the reproduction of the population. Such a regime existed in France and Sweden in the late 18th century. And for developed countries in the 1980s, the population replacement rate was 1.02 in the US and France, 1.0 in Sweden, and 1.0 in Japan, while in the USSR in 1980 it was 1.05 [*Demographic encyclopedia . . .* 1895: 71]. European countries lying to the West of Russia were ahead in their demographic development.

Although the model of population reproduction in the second half of the 19th and early 20th centuries slightly improved, it still remained incredibly difficult for Russian citizens. At the turn of the 20th century, a typical Russian woman of fertile age (from 16 to 49), who married and lived with her husband until the end of the reproductive period (up to 49 years), spent on average 6 years as a maiden, 25 years as a wife, 2 years as a widow and 2 weeks as a divorcee [Vishnevsky, Tolts 1988: 93]. Approximately nine women out of ten had to give birth 8-10 times, which essentially removed them from public and cultural life and by necessity reduced their existence to pregnancy, care for children (about half of whom died), and hard labor, as men could not financially support the family without their help. For example, a peasant woman was forced to work in the fields until late evening the day before giving birth, and after giving birth, which in 97-98% of cases took place either with the help of village midwives or with no assistance at all, had to return to work on the third or fourth day after birth [Ivanitsky 1898 : 62; Afinogenov 1903: 3-4]. Some births took place right in the fields.

Women from the urban lower classes were in about the same position. As for those from the privileged strata, they too had to give birth many times, although they had medical care and could rest after birth. This model of population reproduction was also difficult for men, who had to find the means to support a large number of dependents. Each working family incurred enormous expenses for the birth and upbringing of new generations, and nearly half of these expenses were for nothing, due to the enormous mortality of children. These rational and irrational costs held back the economic growth of the country and were an obstacle to improved living standards.

The traditional type of reproduction of the population, with its high fertility and mortality, which sacrificed people for the continuation of the human race, rested on several factors: psychological – a weak development of individuality; economic – a low level of well-being; social – an estate structure that hindered the mobility of the population and the overcoming of social inequality; political – an absence of civil society and of legal opportunities for people to recognize and protect their own interests; governmental – support by the state, the political elite, the scientific community and the general public who were interested in increasing the number of citizens in order to increase the military power of the empire and the growth of the productive forces of society.

Given such strong foundations, it was extraordinarily difficult to change the traditional type of population reproduction. This was a process of breaking down old stereotypes and stable traditions, hence it spanned several decades and ended in European Russia only in the 1950s, when the transition from the traditional to the rational, or modern, type of population reproduction was finally completed. In the West, it had ended 2-3 generations earlier [Vishnevsky 2005; Livi Bacci 2010].

The demographic transition began in the last third of the nineteenth century with a change in attitudes to life, death and the continuation of the human race, when a certain number of people began to realize that the existing state of things was abnormal, that it was necessary to regulate the birth rate and reduce the number of children to a reasonable level. Such people began to reflect, to seek means to improve their condition not in changes from without (from God, the tsar, the authorities), as before, but from within, in their everyday lives, their traditions, themselves, and in their own irrational demographic behavior. The demographic transition was that rare case in the history of Russia when progressive changes took place not through the obsession of the tsar or by the promptings of the authorities, but voluntarily, consciously and individually, in each separate family, and were therefore irreversible. Without exaggeration, we can say that the beginning of the demographic transition was a landmark event, a sign of the emergence of a new active, individualistic personality. In order for a person to effectively control his sexuality and fertility, to mentally and in practice differentiate between sex, matrimony and reproduction (which in traditional society were an inseparable trinity, but in modern society were independent realms, aimed at achieving specific goals) – and this is the essence of the demographic transition – he or she must be sufficiently rational and culturally developed, must possess a modern, rational type of consciousness. This means being capable of self-awareness and self-analysis, of making an adequate assessment of your personal interests and motives of behavior. It means feeling that you are the subject of your actions, striving to change the world around you and your life in accordance with your needs, goals and ideals, setting and carrying out goals [Mironov 2015: vol.3: 508-509].

Therefore, it is obvious that people actively and consciously involved in the demographic transition had changed quite deeply psychologically, mentally and culturally, and therefore possessed significant innovative potential. This made them receptive to innovations also in the social, political, cultural, and economic spheres, as well as more prepared for and desirous of transformations in public life.

However, as we have seen, only a small part of the population embraced the demographic transition. If we include in this group all Protestants, Catholics and Jews of both sexes, as well as males with higher and secondary education among Orthodox, Muslims and other non-Christian faiths, then their combined share in 1897 in European Russia (without Poland and Finland) was about 14%, and by 1917 this had essentially not changed [Obshchiy svod ... 1905: vol.1: XV, XVIII; Brook, Kabuzan 1980: 74-93; Mironov 2012: 587]. This is probably an overestimate, an upper limit. The fact that fourteen percent of the population was involved in the demographic revolution meant that the masses were not prepared for progressive bourgeois-democratic reforms. Eighty-six percent of the population was more sympathetic to the Socialist-Revolutionary, Bolshevik or anarchist programs of insurrection, rebellion, and expropriations, the elimination of dissenters and the construction of paradise on Earth here and now. But it has long been noted: he who wants everything at once, receives nothing gradually. The revolution of 1917 occurred prematurely and did not fulfill the goals originally set by its liberal democratic leaders and organizers. The overwhelming majority of the population was not yet ready to follow them. "The village lives a natural, animal life," wrote the famous ethnographer, M.Y Fenomenov, about the Russian countryside in the early 1920s [Fenomenov 1925: 1: 91], referring to the reproduction of the population. But this conclusion, with certain limitations, can be extended to other spheres of life.

In particular, in Russia, the movement for the emancipation of women (feminism), which began at the turn of the 1850s and 1860s, did not, unlike in the West, become widespread [Kchedzhi-Shapovalov 1902: 132-203; Kradecky 2012; Novikova 2000: 1-28; Stays 2004; Tishkin 1995; Yukina 2007: 459-466; Edmondson 1984; Stites 1991]. At the time of its apogee in 1905, it involved only about 10,000 people, while at that time in the United States there were over 100,000 adherents, and in Denmark about 80,000 – or, given Denmark's size, a dozen times more.

The intrafamilial relations of the vast majority of the population in 1917 remained authoritarian-patriarchal. They were built on the dominance of men, on a hierarchy, on the strict division of roles according to age and gender, the priority of common family interests over individual ones, the inclusion of families in the life of estate organizations that influenced intrafamily relationships. Political anthropologists point to the dependence of the political regime on the type of family relations [Bocharov 2007, 2: 203-217]. The predominance of patriarchal-authoritarian relations in families of all classes supported political absolutism in the state for the reason that authoritarian families fostered in people the features of an authoritarian personality: passivity, conformism, rigidity of thought, a propensity for stereotypes, a lack of critical reflection, sexual repression, fear and aversion to everything new, different and unusual [Adorno 2001: 20, 281-285] - and such people became a fertile social base for authoritarian relations in all spheres of public life, with all the ensuing political, economic and social consequences.

Thus, as a result of demographic modernization in late imperial Russia, there was a certain rationalization of demographic behavior among a significant part of the population. Demographic indicators improved, the efficiency of population reproduction increased somewhat, and intrafamilial relations were humanized. No less important were the differentiation of sexual, matrimonial and reproductive behavior and the development of fairly effective individual birth control, which are considered in demography as criteria for qualitative modernizing changes in the process of reproducing the population [Zakharov 2003: 19-21].

However, the positive changes observed were due in large part to the fact that about 14% of the Russian population joined the demographic transition, mainly from the ranks of educated and wealthy people living in large cities, as well as residents of the western regions who were by religion Jews, Catholics and Protestants. Eight-six percent of the population (the predominant part of the rural and urban population of Orthodox, Muslim, pagan and other non-Christian faiths) turned out to be very superficially affected by the new trends. Those people actively and consciously involved in the demographic transition (demographic deviants, in terms of the behavioral and cultural standards of the late 19th - early 20th century) can be considered the innovative human capital of the country. They were significant and necessary for the slow and gradual comprehensive modernization of the country, but not sufficient for rapid and profound revolutionary bourgeois-democratic transformations. The revolution of 1917 was premature. Political midwives hastened and artificially accelerated the birth of the new Russia. But the newborn was premature. As a result, the revolution failed to solve the tasks set by its leaders and organizers.

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MORTALITY FROM CARDIOVASCULAR DISEASES AND LIFE EXPECTANCY IN RUSSIA *

ANATOLY VISHNEVSKY, EVGENY ANDREEV, SERGEY TIMONIN

High premature mortality from cardiovascular disease (CVD) and its long-term negative trends are one of the main reasons for Russia's lag behind the developed countries in life expectancy, especially of its female population. Despite the decline in mortality since 2003, CVD mortality rates at particular ages (30-74 years for males and 30-49 for females) are still higher than in 1970.

Decomposition of long-term changes in life expectancy in Russia shows a negative contribution of changes in CVD mortality for men (-1.0 years in 1972-2010) and a small positive contribution for women (+0.7 years from 1972 to 2010).

The mortality structure within the full class of cardiovascular diseases in Russia is significantly different from that observed in the countries with the lowest level of CVD mortality. Ischemic heart disease constitutes more than half of all deaths, and this share, in contrast to Western countries, is tending to rise. Second place belongs to deaths from cerebrovascular diseases, the share of which is declining, but remains significantly higher than in Western countries. The share of deaths from other cardiovascular diseases accounts for about 50% of all CVD mortality in Western countries, while in Russia it is only about 15%, but these are characterized by a very low age at death.

Regional patterns of CVD mortality in Russia are discussed, as well as the quality of statistics on causes of death and changes in the coding practices in the Russian Federation.

Key words: mortality, life expectancy, cardiovascular diseases, ischemic heart disease, cerebrovascular diseases, age-specific mortality pattern, average age at death, excess mortality.

The demographic development of the Russian Federation is determined by the interaction of the three main demographic processes: fertility, mortality and migration. Each of these processes in modern Russia takes place in a mode far from optimal, generating many problems of concern to society and seen as challenges requiring answers.

One such challenge, perhaps the most acute, is associated with the very high mortality rate and, accordingly, low life expectancy for Russians.

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THE RESULTS OF THE PROJECT "DEMOGRAPHIC DEVELOPMENT IN RUSSIA IN 2005-2015 IN THE CONTEXT OF LONG-TERM TRENDS", CARRIED OUT WITHIN THE FRAMEWORK OF THE BASIC RESEARCH PROGRAMME AT THE NATIONAL RESEARCH UNIVERSITY HIGHER SCHOOL OF ECONOMICS (HSE) IN 2016, ARE PRESENTED IN THIS PAPER.

RUSSIA'S LIFE EXPECTANCY LAG

By the mid-1960s, most developed industrial countries had managed to rein in the main source of high mortality in the past - infectious diseases. Thanks to this, life expectancy in much of the developed world between the beginning of the twentieth century and 1960 increased by 20 years or more, and Russia, which had a very low initial level, was among the countries showing the greatest gains: 34 more years for men, and 40 more for women (Figure 1).

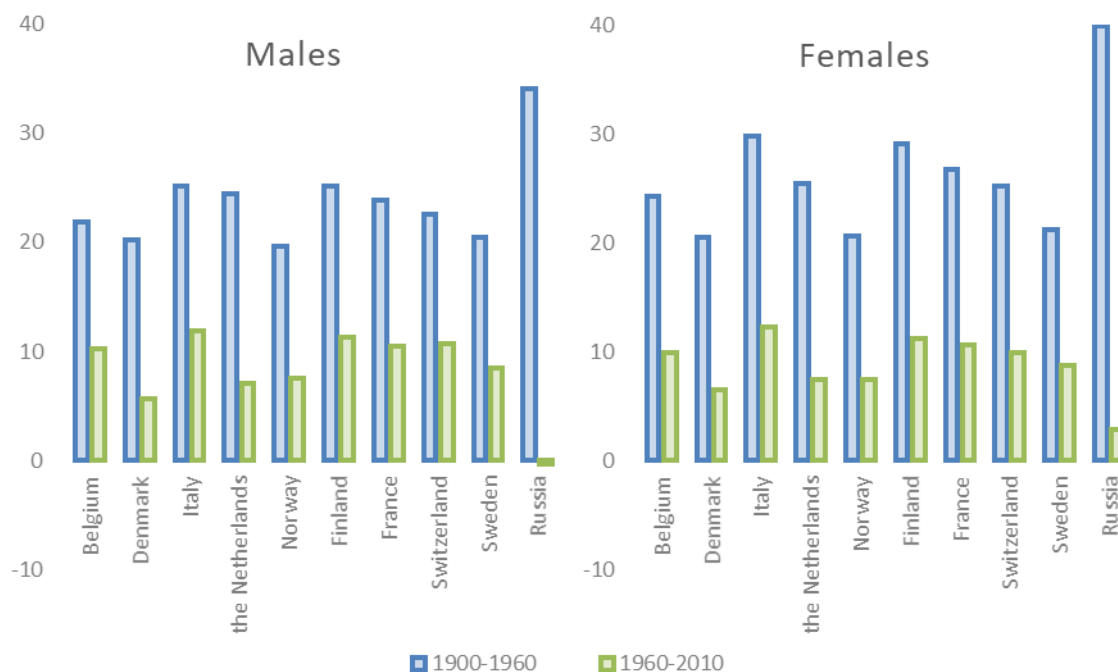


Figure 1. Growth of life expectancy in some countries during the first and second epidemiological revolutions, years

Source: Authors' calculations according to [RosBRiS 2015; HLD 2015; HMD 2015].

This was a real revolution, as a result of which life expectancy in many developed countries increased on average to 70 years, its further growth slowed significantly, and the main causes of death became "degenerative diseases and diseases associated with human activities" [Omran 2005: 738]. Assessing the current situation, experts have concluded that the possibilities of the previous strategy to increase life expectancy, focused primarily on the prevention and treatment of infectious diseases, are being exhausted, and that this strategy needs to be rethought. As American hygienist Milton Terris wrote, it became necessary to carry out a "second epidemiological revolution" [Terris 1976: 1159].

The world has really entered a new era - the era of combating non-communicable causes of death (chronic diseases, as well as accidents and injuries). Approximately from the late 1960s to the early 1970s, in most developed countries there was a process of active transformation of the epidemiological model of mortality that had developed by that time as a result of the successes achieved in the previous stage in the fight against infectious diseases. And it was the late 1960s and early 1970s that became the point at which the paths towards reducing mortality in industrial countries began to diverge - the transition to a new model of mortality was not underway everywhere.

It was successful in countries of Western Europe, North America, Japan and some other countries, where there has been a persistent tendency to increased life expectancy (of about 2.5 years a decade). In the countries of Central and Eastern Europe, however, no improvements occurred. In the USSR, this unfortunate situation was hushed up for a long time, and it was only in the late 1980s that it became possible to say publicly that the country, "beginning roughly in the mid-sixties, entered a long period of 'going nowhere'. Also persisting, and in some cases even growing, was the already relatively high mortality, especially among working-age men; the USSR's lag behind most of the world's economically developed countries in terms of mortality rates and length of life increased "[Vishnevsky 1986: 71-72].

All this applied to Russia, too. The winning changes that took place during the first epidemiological revolution turned out to be losing ones at a later stage, when the second epidemiological revolution unfolded in the world. For 50 years (between 1960 and 2010) the life expectancy of women grew only slightly - much less than in most developed countries - while for men it even decreased somewhat (Figure 1).

The negative trends in Central Europe were brought to a halt in the late 1980s, and in the Baltics in the mid-1990s. In Russia, the changes that have taken place since the late 1980s, when the highest life expectancy indicators were reached, have been of an oscillatory nature. At first, the indicators fell sharply, reaching the bottom in 1994, after which they returned to their previous level. The fall took 4-6 years, while the process of restoring the level of the late 1980s, temporarily interrupted in 1998, took a total of 15 years for women and 19 years for men. At the same time, the lag behind the majority of developed countries grew substantially. If we take for comparison the 15 Western European countries¹ that were part of the European Union before its expansion in 2004 (EU-15), then in 1988 life expectancy for men in Russia was 8 years lower than in these countries, and 5 years lower for women. 25 years later, in 2013, after a number of fluctuations, the gap was 13.9 years for men and 7.9 years for women. If we compare with each of the most successful countries (France, Italy, Spain, Japan), the gap will be even greater. The growing gap between Russia and the countries that have overtaken it in life expectancy, including the former "socialist camp", is clearly seen in Figure 2.

The observed lag is largely determined by two distinctive features of the contemporary Russian model of mortality: very high mortality from diseases of the circulatory system among the middle-aged, and very high mortality from external causes among the young and middle-aged [Vishnevsky, Shkolnikov 1997: 24]. This article examines one of these two features in more detail: the high mortality of Russians from diseases of the circulatory system.

¹ Austria, Belgium, Great Britain, Germany, Greece, Denmark, Italy, Ireland, Spain, Luxembourg, the Netherlands, Portugal, Finland, France, Sweden.

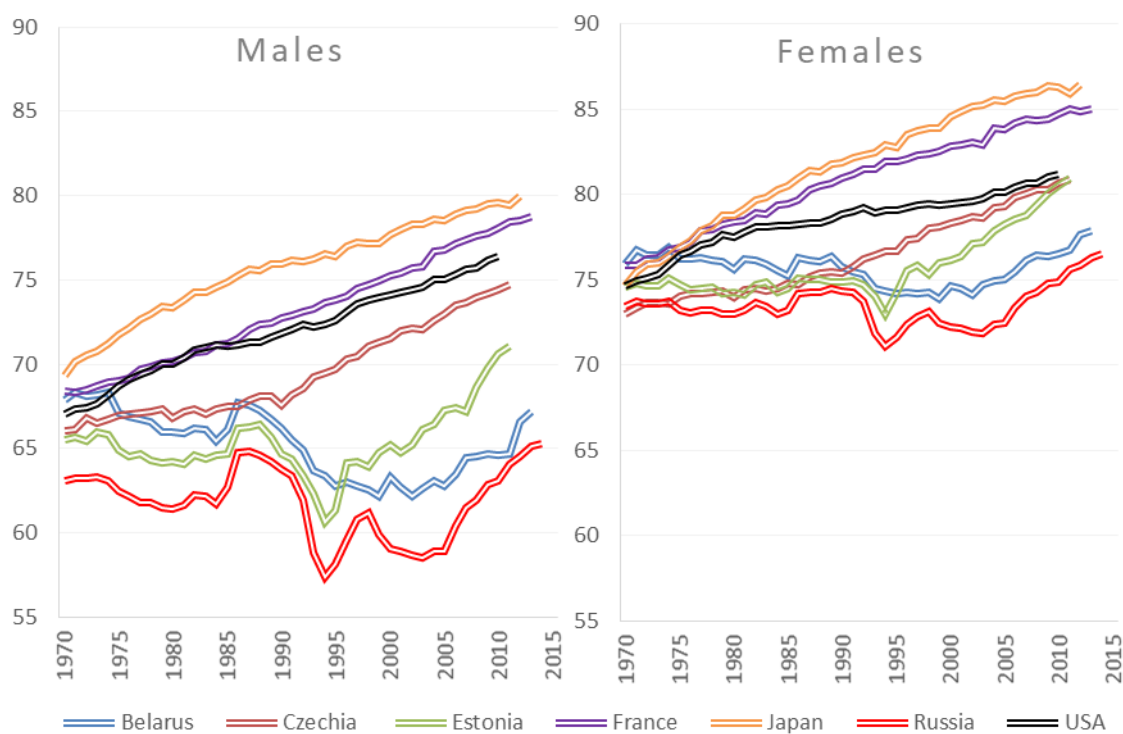


Figure 2. Life expectancy at birth in Russia and several countries of the world, years

Source: Authors' calculations according to [RosBRiS 2015; HLD 2015; HMD 2015].

ADVERSE TRENDS IN MORTALITY FROM CARDIOVASCULAR DISEASES IN RUSSIA

In historical retrospect, high mortality from cardiovascular diseases is not a problem, but a boon. In the second half of the 19th and the first half of the 20th centuries, the rapid growth of mortality from causes of mainly endogenous etiology, primarily circulatory diseases and neoplasms, was a highly progressive process. It is due to the fact that the increase in the probability of dying from these causes simultaneously meant a decrease in the probability of dying from exogenous causes, above all from infectious diseases, which was the same thing as a displacement of deaths in childhood and young age by deaths of people in elderly and old age and hence a rapid growth of life expectancy.

As a result of these changes, mortality from cardiovascular diseases has become the most important, the dominant part of overall mortality in all developed countries, and for Russia this is even more characteristic than for Western countries. Over the last decades of the last century, the probability of dying from causes of this class changed somewhat, but its determining role persisted: about half of men and 65-70% of women died from this cause, which already even then made the Russian mortality model significantly different from the western one, where the probability of dying from diseases of the circulatory system was significantly lower [Vishnevsky, Shkolnikov 1997: 27].

The increase in the contribution of CVD to total mortality (at that time, a positive phenomenon) was combined with an increase in the average age at death from this cause, including in the USSR, where "for a long time mortality from CVD... decreased in younger age groups - its growth was observed only among those over 50, and even here it could be associated with the improvement of diagnostics" [Vosproizvodstvo naseleniya SSSR 1983: 111]. However, already in the second half of the 1960s "a new trend was revealed - towards an increase in mortality in middle age, in which it had previously declined" [Vosproizvodstvo naseleniya SSSR 1983: 112]. As a result, "the average age at deaths from cardiovascular diseases from 1966-1967 to 1971-1972 decreased in women by about one year, and for men even by two" [Biryukov 1979: 66].

The "alarming trends" of mortality from cardiovascular diseases in Russia were also pointed out in later works. For example, a comparison of Russia with France in the mid-1990s showed that in Russia "mortality from cardiovascular diseases is significantly higher than in France, and, most importantly, has been increasing over the past 30 years, while in France there has been a continuous reduction ... This fundamental difference indicates that Russia, unlike Western countries, has not yet embarked on an effective way to combat cardiovascular diseases, which would allow it to enter a new phase of the epidemiological transition" [Meslé et al. 1996: 117-118].

Apparently, this new phase has not yet begun in Russia even now, although, for the sake of truth, it must be said that this concerns not only cardiovascular diseases. By the early 1970s, in Russia, as in all developed countries, infectious diseases had lost their recent role as a major threat to human health and life, and non-infectious causes of morbidity, disability and mortality, primarily three of their main classes, had come to the fore: cardiovascular diseases, neoplasms and the so-called external causes of death caused not by disease, but by intentional or accidental external effects.

In 1970, the cumulative share of these three groups of causes in the standardized death rate (SDR) from all causes in Western Europe was close to 70% and in subsequent years even increased, while in Russia it had already reached 80%. Accordingly, the tasks of combating mortality were reduced and still are primarily reduced to a reduction in mortality from the three specified groups of causes [Vishnevsky, 2014].

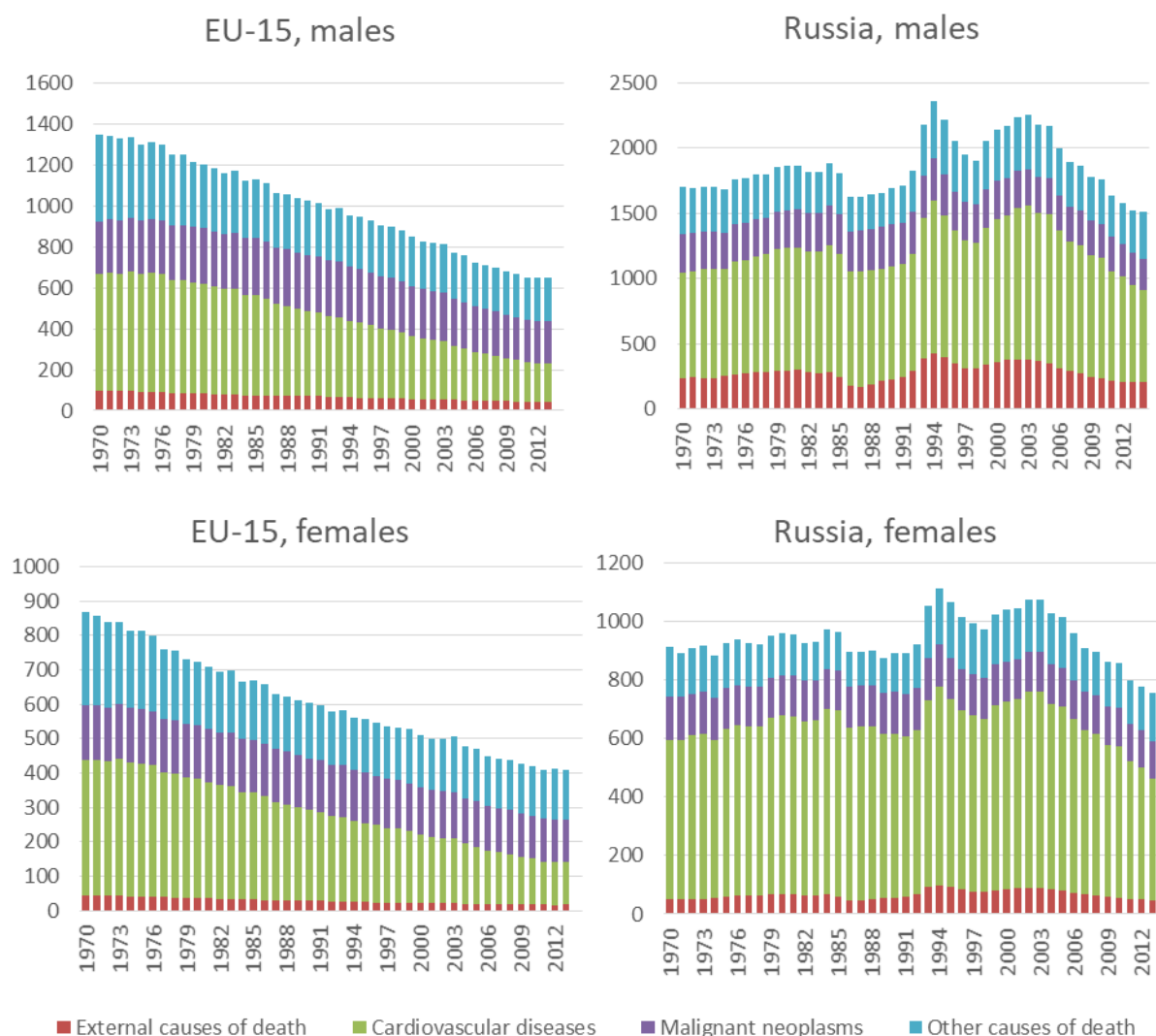


Figure 3. The standardized death rate from CVD, malignant neoplasms, external causes and other causes of death in the EU-15 and Russia, per 100 000

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015]

Judging by the dynamics of the standardized death rate after 1970, these tasks were successfully solved in western European countries (Figure 3, left panel). At the same time, the graph clearly shows that the whole picture of changes over the last few decades has been determined by the decrease in the standardized death rate from CVD, which led to a general decrease in the standardized death rate in these countries. The standardized death rate from the other two main classes of non-communicable causes has changed insignificantly (although in the case of external causes, its decrease is still noticeable). It is no accident that in the modern demographic literature the changes in mortality that occurred in the last half century have been called "a cardiovascular revolution" [Meslé, Vallin 2006: 250].

In Russia, events developed in a different way. As can be seen from the same figure 3 (right panel) and from Table 1, it is not yet possible to speak of a serious reduction in mortality from CVD - since 1970 it has barely changed. It is barely possible to speak of a serious change in the aggregate standardized death rate from the three classes of causes, given that over the last half-

century it has undergone essentially oscillatory changes, only in the second half of the aughts showing a more or less pronounced tendency to fall below the levels previously reached.

Table 1. The standardized death rate from some classes of causes of death in Russia, 1970-2014, per 100 000

	1970	1980	1990	2000	2010	2014
Men						
All causes	1704.5	1868.2	1695.4	2143.6	1756.5	1513.2
Including:						
• Cardiovascular diseases	809.0	946.2	868.0	1091.8	920.5	702.1
• Malignant neoplasms	287.2	284.5	318.6	294.4	262.8	241.0
• External causes	238.8	292.1	228.7	360.5	237.3	204.4
Total for the 3 classes of causes	1335.0	1522.8	1415.3	1746.7	1420.6	1147.5
• Other causes	369.5	345.4	280.1	396.9	335.9	365.8
Women						
All causes including:	911.7	959.1	893.3	1039.2	858.9	747.2
• Cardiovascular diseases	544.9	610.4	561.9	641.4	517.6	382.4
• Malignant neoplasms	146.2	135.8	142.8	139.8	131.8	123.1
• External causes	51.1	68.0	55.8	83.3	56.9	47.8
Total for the 3 classes of causes	742.2	814.2	760.5	864.5	706.3	553.4
• Other causes	169.5	144.9	132.8	174.7	152.6	193.8

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015]

HIGH MORTALITY FROM CARDIOVASCULAR DISEASES IS THE MAIN CAUSE OF LOW LIFE EXPECTANCY IN RUSSIA

High mortality from cardiovascular diseases is the main culprit in Russia's lag behind other countries in terms of life expectancy. It accounts for 45-55% of this gap in men and even more in women (Table 2).

Table 2. The contribution of differences in mortality from CVD in Russia's overall life expectancy lag behind some countries

Country, year	Men			Women		
	Differences in life expectancy, years	Including due to higher mortality from CVD		Differences in life expectancy, years	Including due to higher mortality from CVD	
		years	%		years	%
Japan, 2013	15.4	7.9	51.1	11.0	7.9	71.3
France, 2011	13.5	7.6	55.8	9.2	7.3	78.8
Germany, 2012	13.4	6.4	47.6	7.0	4.8	69.0
USA, 2010	11.4	6.1	53.4	5.0	5.0	98.1
Estonia, 2012	10.1	4.3	42.7	4.9	2.9	60.3
Czechia, 2013	6.2	2.8	44.3	5.1	2.7	53.7

Note: The data for Russia used for comparison is for 2013 (life expectancy was 65.1 and 76.4 years for men and women, respectively).

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

Since the early 1970s, the mortality rate in Russia has experienced several periods of recovery and recession, each of which was closely related to the ups and downs of mortality from diseases of the circulatory system (Figures 4 and 5).

Because the periods of growth and decrease in mortality from CVD alternated, it is possible to find periods when the fight against this cause of death can be considered successful. In particular, this interpretation can be proposed for the period from 2004, when, as follows from Figures 4 and 5, the contribution of diminishing mortality from cardiovascular diseases to the growth of life expectancy was greater than in many other countries [Grigoriev et al. 2014]. However, one must take into account that, basically, this contribution was compensated by the losses incurred in previous periods. From the long-term perspective (for the period from 1972, which is reflected in Figures 4 and 5), the total contribution of changes in mortality from CVD to changes in life expectancy in women was positive, but very small compared to other countries, and in men was completely negative.

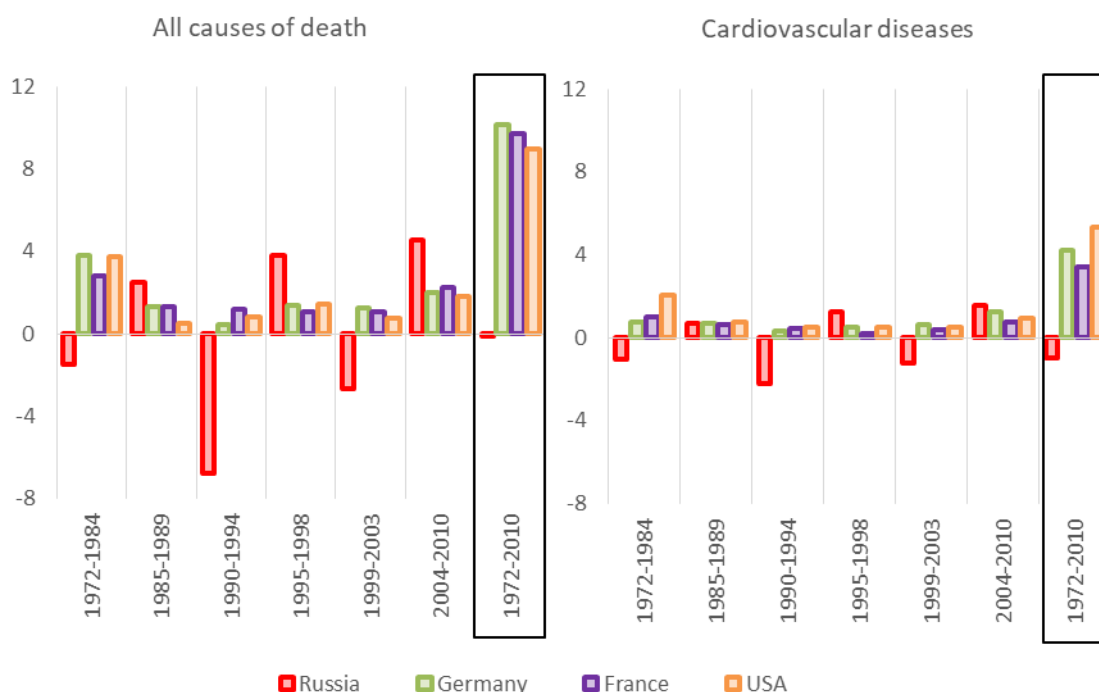


Figure 4. Changes in life expectancy at birth as a result of an increase or decrease in mortality from all causes and diseases of the circulatory system in Russia, Germany, France and the US, men, years

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

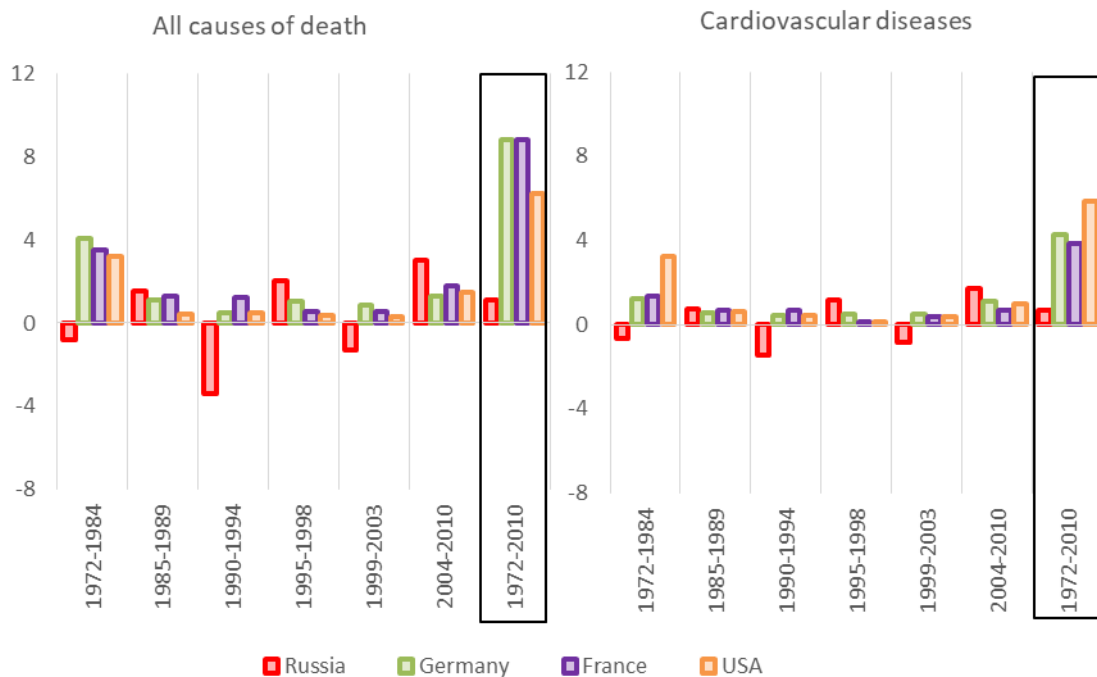


Figure 5. Changes in life expectancy at birth as a result of an increase or decrease in mortality from all causes and diseases of the circulatory system in Russia, Germany, France and the United States, women, years

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

THE STRUCTURE OF CARDIOVASCULAR MORTALITY IN RUSSIA

The whole class of cardiovascular diseases can be broken down into three main groups: ischemic heart disease (ICD-10 codes [WHO 1995] - I20-I25), cerebrovascular diseases (codes I60-I69) and all other causes of this class (other heart diseases - codes I00-I19, I26-I59 and other cardiovascular diseases - codes I70-I99). Comparison of the structure of mortality from these three groups of causes in Russia and in countries with lower and decreasing mortality from CVD suggests that here, too, Russia is following its own - and not the best - path.

In the 1970s, attempts were made to link the unfavorable trends in mortality from CVD in Russia with the different roles of exogenous and endogenous causes and conditions for the emergence of different groups of cardiovascular diseases. It was supposed that "such diseases as active rheumatism and chronic rheumatic heart disease can be considered mainly as diseases of exogenous etiology, whereas coronary heart disease and cerebral vascular lesions are mainly endogenous diseases" (Biryukov 1979: 69). The logic of this contrast was that the greater role of the exogenous component in determining certain cardiovascular diseases makes them less dependent on age and at the same time more sensitive to those methods of combating diseases and death that brought success in the earlier stages of the epidemiological transition. The gaining of control over age-related exogenous factors of cardiovascular morbidity in a sense could be considered as an extension of this success, increasing the chances of reducing mortality from those diseases of the circulatory system in whose etiology the role of this factor was highest.

Given that the main contribution to cardiovascular mortality is caused by ischemic heart disease and cerebral vascular lesions, Biryukov believed that it would be interesting to link the differences in the dynamics of mortality from these two groups of the disease with the different contributions of exogenous and endogenous components to their etiology. However, he was unable to do this, and had to admit that "for now it is not possible to make such an analysis convincing" [Biryukov 1979: 74]. Noting, though, that both coronary heart disease and cerebral vascular lesions are based either on atherosclerosis or hypertension, with atherosclerosis being the main cause of the first and hypertension of the second, V. Biryukov draws attention to the fact that "the fight against hypertension is being waged more successfully", and makes the cautious assumption that "mortality from hypertension is less closely related to age, and therefore to a lesser extent serves as an inevitable companion to the aging process" [Biryukov 1979: 75]. In other words, it is less dependent on environmental and behavioral factors.

Apparently, this assumption, like the whole logic of Biryukov's reasoning, was not without grounds. Already in the 90s, the authors of the aforementioned comparative mortality study in Russia and France came to the conclusion that, in Russia, "favorable trends of change are observed for certain heart diseases, such as *rheumatic heart diseases* and *hypertension*. Reducing mortality from the first of these pathologies, which is of an infectious nature, may be associated with the spread of antibiotics" [Meslé et al. 1996: 119]. "Progress in fighting hypertension is also significant, although the decline in mortality from it, especially intense in the 1970s, later slowed. In the 1980s, the death rate from hypertension in Russia decreased to the level of France" (however, here it was stated that "this evolution of mortality from hypertension in Russia is more associated with a change in the practice of coding the causes of death than with real changes") [Meslé et al. 1996: 119].

If, with regard to heart diseases, even while noting Russia's great lag behind France, the authors of the study pointed to some trends opposing the increase in mortality, then "the second major component of mortality from cardiovascular disease - *strokes* - has continuously grown over the past 30 years, which is in sharp contrast to the marked decrease in mortality from this pathology in France" [Meslé et al. 1996: 119].

In light of this reasoning, the growth in Russia during the second half of the 1990s of the previously decreased contribution of ischemic heart disease to overall CVD mortality seems surprising. Now it determines more than half of the standardized death rate from diseases of the circulatory system in men and not much less in women, and there is no sign yet of this trend slowing down. In Western European countries, this contribution is much smaller, and in the last two decades has tended to decrease (Figure 6). Is this not connected with the prolonged inability of Russian society to limit the effect of external factors that are less dependent on age?

Among these factors is, in particular, alcohol. Numerous studies emphasize the connection between excessive consumption of alcohol and premature mortality from diseases of the circulatory system, but the exact mechanism of this connection remains unclear. Sometimes it is even suggested that this relationship is only an appearance that arises from the fact that some of the deaths due to alcohol poisoning are classified as consequences of heart disease [Zaridze et al. 2009]. At the same time, Leon et al. [Leon et al. 2010], according to a retrospective study of the mortality of men in Izhevsk in 2003-2005, found a stable statistical relationship between excessive

alcohol consumption and mortality from forms of coronary heart disease, except for myocardial infarction (ICD codes I20, I23-I25). It is also noted that the reduction of mortality from diseases of the circulatory system during the anti-alcohol campaign was associated with these forms of ischemic disease.

In Western countries, the contribution to cardiovascular mortality of cerebrovascular diseases is rapidly declining, while in Russia this decline has only recently appeared, and so far this contribution remains high: among women it is approximately the same as in France in 1980, and among men is not much less (Figure 7).

Accordingly, in Russia the contribution of all other cardiovascular diseases, which is constantly growing in other countries, is very low. True, since 2000 it has been growing in Russia, but the gap behind western European countries is still very large (Figure 8).

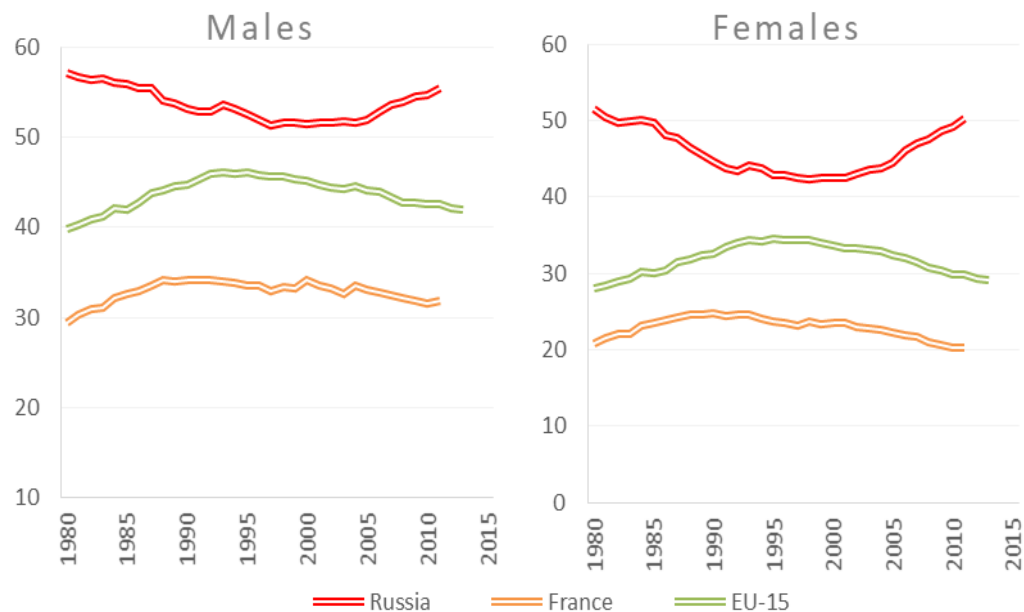


Figure 6. Contribution of ischemic heart disease to the standardized death rate from CVD in Russia, France and the EU-15, %

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

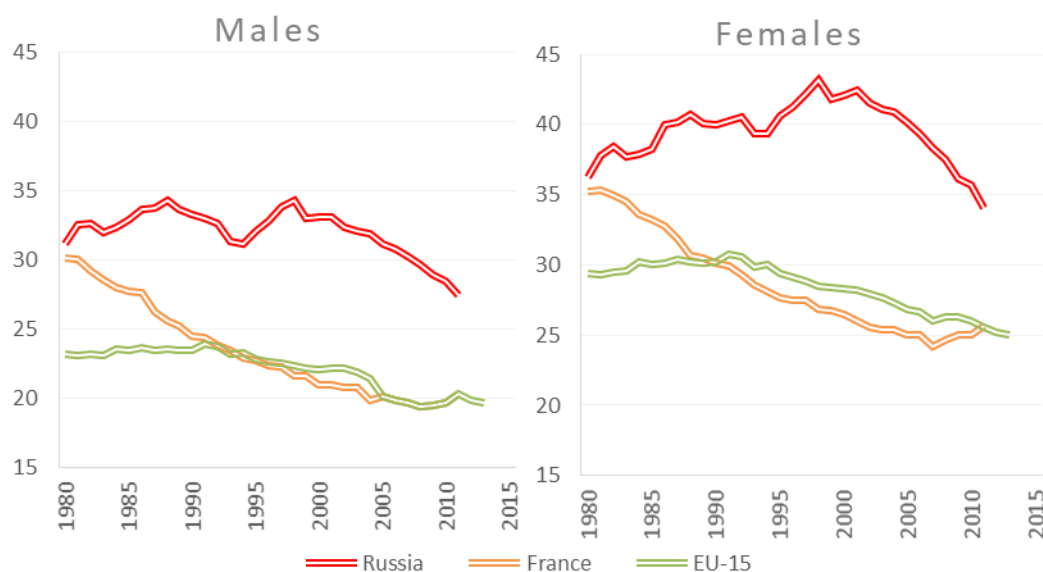


Figure 7. Contribution of cerebrovascular diseases to the standardized death rate from CVD in Russia, France and the EU-15, %

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

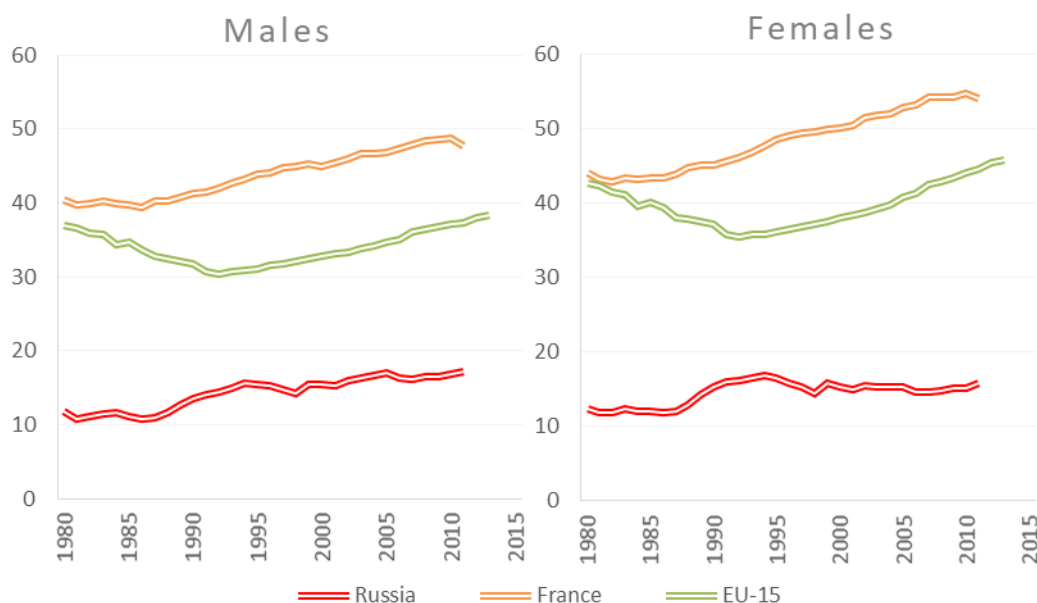


Figure 8. Contribution of other cardiovascular diseases to the standardized death rate from CVD in Russia, France and EU-15 countries, %

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

The contribution of the three major groups of causes of death to the total CVD mortality is important not in itself, but in connection with the age at which people die from the diseases of a particular group. In Russia, in comparison with other countries, the average age at death from all three groups of cardiovascular diseases is very low, and, in addition, the ratio between them is not the same as in countries with a low mortality rate. A comparison of Russia and France in Figure 9 shows that in France, the increase in the contribution of other CVD by reducing the contribution of ischemic heart disease and cerebrovascular diseases, as discussed above, is combined with a

high age at death from other CVD diseases, which in Russia are characterized by much a lower (by 8.5 years in 2010) age at death. At the same time, in Russia the age at death from them for both men and women is significantly lower than from ischemic heart disease or cerebrovascular diseases, while in France it is, on the contrary, the highest.

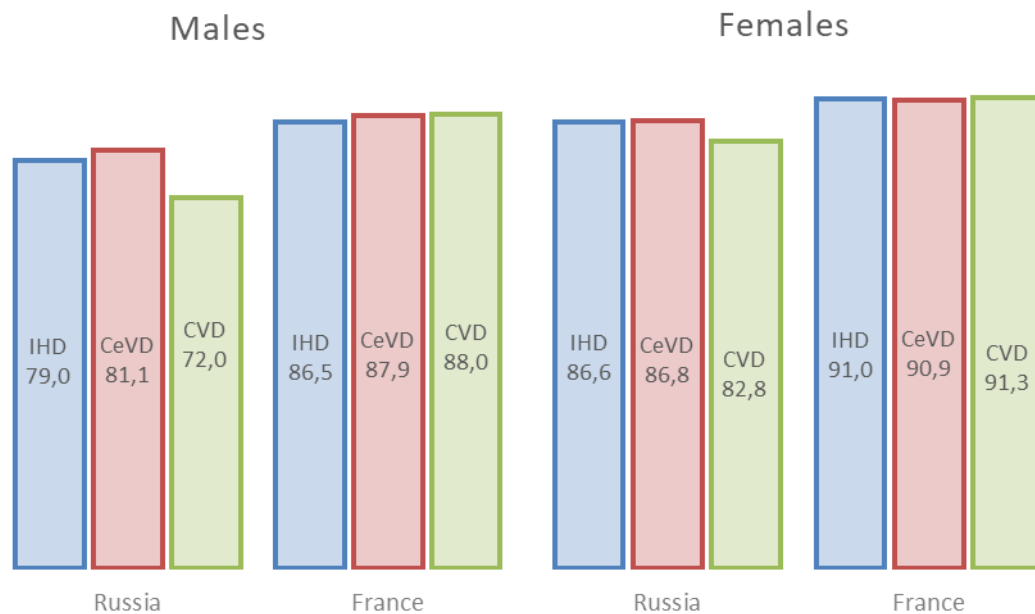


Figure 9. The average age at death from ischemic heart disease, cerebrovascular diseases and other CVD diseases in Russia and France, 2010, years

Note: IHD - ischemic heart disease, CeVD - cerebrovascular disease, CVD -cardiovascular diseases.

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

Table 3 shows that the smallest (though still very significant) gap between Russia and other countries in terms of the average age at death in 2010 was related to cerebrovascular diseases. For mortality from ischemic heart disease, whose contribution is large and tends to be increasing, the gap in the average age at death both is greater and is growing faster than in the case of cerebrovascular diseases. But this gap is especially large for mortality from all other diseases of the circulatory system, especially in men. This feature deserves a separate analysis, which goes beyond the tasks of this article. One can only assume that in Russia this more often concerns those falling into the category of "other" diseases, which are more dependent on conditions and lifestyle, for example, alcoholic cardiomyopathy.

Figure 10 shows the contribution of changes in mortality from CVD diseases and their enlarged groups to changes in life expectancy in Russia from 1972 by the periods of growth and reduction of this indicator. The graph shows that as a result of the mutual cancelling out of these changes, the increase in life expectancy due to the reduction in CVD mortality over the entire more than 40-year period was just over 2 years for women and less than six months for men, and the contribution of cerebrovascular diseases among women, and of other diseases of the circulatory system among men, was, on the whole, negative for the entire period.

Table 3. The difference in the average age at death from all causes of death and from CVD between Russia and some countries, years *

	Germany	Poland	USA	France	Sweden	Estonia	Czechia	Finland
Men								
All causes of death								
1970	0.66	-0.05	0.43	1.93	3.99	1.27	-	-2.35
1990	5.02	0.37	4.94	6.43	6.27	0.24	0.47	2.67
2010	11.48	5.41	9.95	12.62	12.72	5.67	8.89	10.21
Ischemic heart disease								
1970	-2.67	-5.06	-0.56	-2.24	3.32	1.21	-	-5.06
1990	4.43	-5.67	5.86	5.05	6.25	2.00	0.14	3.16
2010	10.10	3.05	9.15	10.28	11.25	6.19	8.16	10.29
Cerebrovascular diseases								
1970	2.24	-2.28	2.24	2.41	3.85	1.01	-	-0.74
1990	4.99	-3.74	4.93	5.67	5.57	-0.82	0.56	2.19
2010	8.98	1.94	8.00	9.78	10.24	3.00	7.18	8.14
Other CVD diseases								
1970	6.20	5.81	4.31	7.10	8.66	0.17	-	5.49
1990	6.83	4.35	5.13	8.29	8.93	-8.32	2.11	3.94
2010	19.00	13.41	16.71	20.40	20.53	10.70	15.19	14.20
Women								
All causes of death								
1970	-0.02	-1.18	1.31	1.34	2.54	1.07	-	-1.18
1990	3.53	0.17	4.00	5.39	4.59	0.34	-0.17	2.42
2010	7.03	3.75	5.54	8.90	7.65	4.89	4.89	7.26
Ischemic heart disease								
1970	-2.35	-3.89	0.30	-2.27	1.77	1.01	-	-3.37
1990	2.02	-6.38	3.84	3.81	3.46	0.94	-0.93	1.62
2010	6.22	2.63	5.16	8.04	6.55	5.46	4.90	7.35
Cerebrovascular diseases								
1970	0.94	-2.79	2.13	1.81	1.93	0.57	-	-1.26
1990	3.99	-3.00	4.55	5.50	4.82	0.16	0.35	2.74
2010	5.63	1.34	4.80	7.40	6.58	3.03	4.34	5.89
Other CVD diseases								
1970	4.01	3.31	4.00	5.97	6.48	-0.45	-	4.15
1990	4.81	2.19	4.00	6.52	6.28	-8.06	0.59	3.87
2010	11.24	8.36	9.18	13.09	12.15	7.69	7.81	10.34

*The average age is taken from multiple life tables and does not depend on the population age structure. Positive values in Table 3 indicate how many years less the average age at death is in Russia than in the specified country, negative values - by how many it is greater.

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

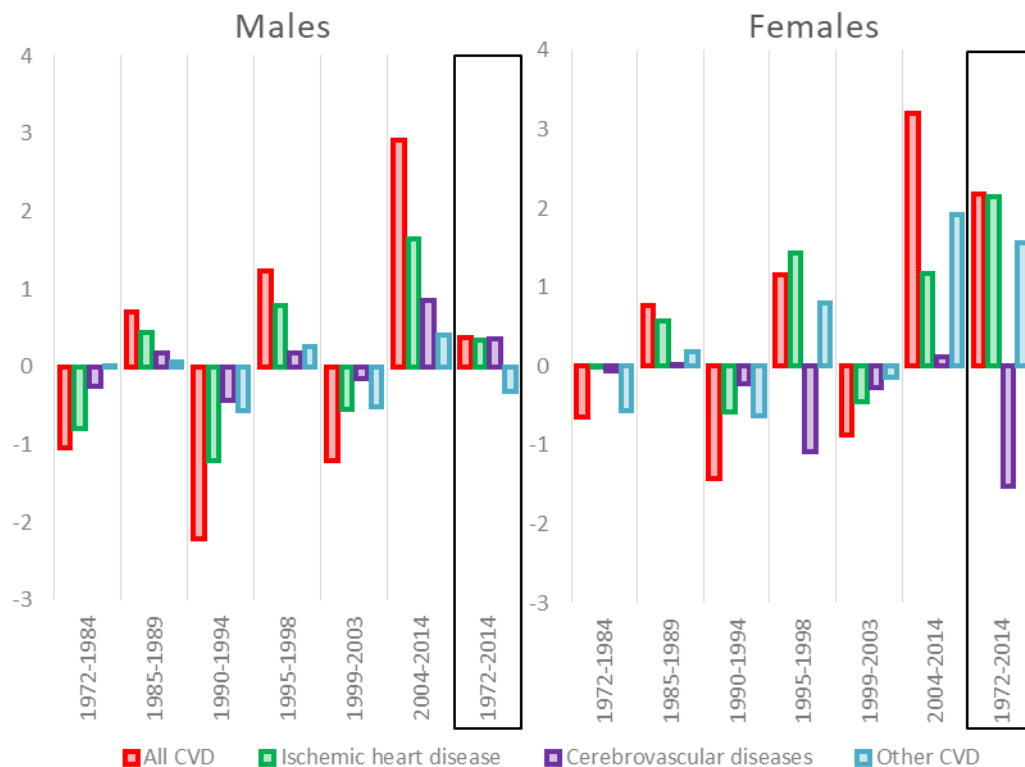


Figure 10. Changes in life expectancy at birth in Russia as a result of changes in CVD mortality and its separate groups for 1972-2014, years

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

THE AGE-SPECIFIC PATTERNS OF CARDIOVASCULAR MORTALITY IN RUSSIA

The low age at death from CVD diseases and their enlarged groups in Russia is evidence of a general stagnation in the age-specific mortality pattern. Both the pattern itself and its dynamics in Russia are strikingly different from what can be seen in the last few decades in the countries of the "cardiovascular revolution", in particular in the countries of Western Europe (Figure 11).

As follows from Figure 11, among men in Russia the table number of deaths (d_x) from cardiovascular diseases begins to grow rapidly after the age of 25. The bulk of deaths from these causes is concentrated in the ages of up to 70-75 years, after which their share even goes down. In Western Europe, growth begins later (Russian indicators recorded at age 25 there are not reached even by age 40) and the curves rise much less steeply, but this rise lasts to the latest ages, so that the peak of deaths from diseases of the circulatory system is not, as in Russia, between 70-75 years, but closer to 90 years. On our graph, where the age scale ends with an open age interval of 85 years and older, the maximum number of deceased men and women in the EU-15 falls in this open age interval. Among Russian women, the age distribution of deaths from cardiovascular diseases is more similar to that of Western Europe, but is still strongly shifted towards younger ages.

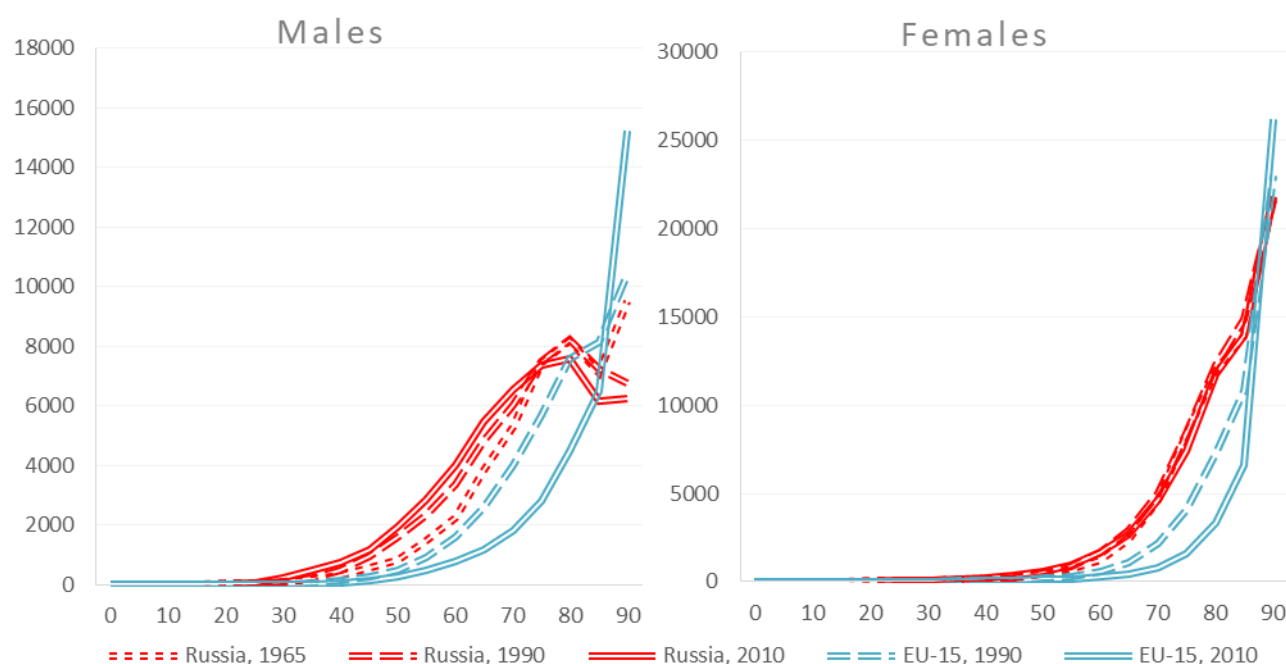


Figure 11. Age-specific pattern of table numbers of deaths (d_x) from cardiovascular diseases in Russia and in EU-15 countries, per 100,000

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015].

What's more, the curves for the EU-15 countries show a pronounced tendency to shift down and to the right, "bending" towards the lower right corner of the chart. When comparing the curves of 1990 and 2010, it is clearly seen that the right end of the 2010 curves for both men and women turns confidently up, indicating the displacement of an increasing number of deaths from cardiovascular diseases to later ages. In Russia, for men, the curves are generally not bent to the right, but to the left, indicating a high mortality rate in middle age, while the 2010 curve is worse than the 1990 curve, which in turn is worse than the curve of 1965. The curves for women are closer to those of Western Europe, but also strongly shifted to the left. At the same time, they show neither the rightward shift of European curves, indicative of progress, nor the leftward shift indicative of regress, as in the curves for Russian men - rather, one can speak of complete stagnation for almost five decades.

Figure 12 shows the dynamics in Russia of age-specific death rates from cardiovascular diseases for the 4 age groups most susceptible to death from them since 1970. It can be seen that the largest variations in cardiovascular mortality are characteristic for younger ages, whereas older age groups are less susceptible to such fluctuations.

Despite a significant reduction in mortality in all age groups over the past 10 years, the level of male mortality from CVD at ages of up to 75 years, and of female mortality up to 45 years, is still higher than that reached in 1970.

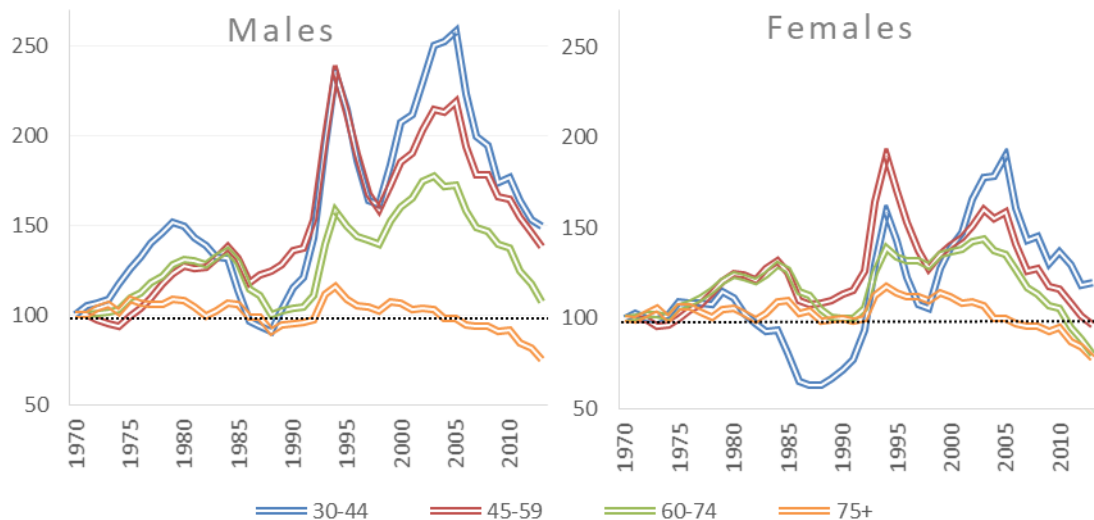


Figure 12. Changes of the age-specific death rates (at ages 30-44, 45-59, 60-74 and 75+) from cardiovascular diseases, 1970 = 100%

Source: Authors' calculations according to [RosBRiS 2015].

Table 4. Excess table numbers of male and female deaths (d_x) from cardiovascular diseases at age 30-85 years in Russia in comparison with some countries, per 100,000

	Men					Women				
	Japan, 2013	France, 2011	USA, 2010	Czech Republic, 2013	Estonia, 2012	Japan, 2013	France, 2011	USA, 2010	Czech Republic, 2013	Estonia, 2012
30-34	361	373	320	346	322	105	108	80	112	104
35-39	591	617	533	604	449	182	183	134	169	123
40-44	862	904	757	827	591	275	284	197	260	247
45-49	1 334	1 404	1 115	1 181	870	406	430	268	362	322
50-54	1 979	2 037	1 608	1 631	1 034	602	624	385	484	507
55-59	2 822	2 879	2 281	2 000	1 441	1112	1146	803	873	743
60-64	4 031	4 147	3 377	2 488	1 427	1931	1985	1447	1338	1208
65-69	4 333	4 481	3 458	1 915	816	3013	3112	2284	1783	1717
70-74	5 520	5 636	4 434	2 408	1 166	5738	5758	4670	3396	3061
75-79	4 619	4 664	3 434	434	-2	8076	8123	6681	3909	2900
80-84	2 036	2 059	1 131	-2 300	-1 715	9199	9166	7965	1962	386
Total:	28 489	29 200	22 449	11 536	6 399	30 639	30 918	24 915	14 648	11 318
Number of excess deaths:										
				over 5 000	3 000 – 5 000	1 000 – 3 000	fewer than 1 000			

Source: Authors' calculations according to [RosBRiS 2015; WHO MD 2015]

The shortcomings of the age-specific pattern of Russian mortality from CVD are clearly visible in Table 4, which allows us to compare the distribution of deaths by age in Russia and some other countries and identify "age risk groups" for the population of Russia, indicating for each of them by how much the number of deaths is excessive in comparison with these countries.

For example, the figure in the bottom line of column 2 of Table 4 shows that in 2013, in Russia, compared to Japan, out of every 100,000 male deaths at all ages, more than 28,000 deaths occurring at the ages 30-84 years old from CVD could be considered excessive - in Japan they would not have occurred at these ages. Moreover, the number of excess deaths at the age of 70-74 is particularly high, while the excess mortality at ages of up to 45 years, although it exists at these ages, is still relatively small. In the same way, you can analyze any column of the table.

REGIONAL FEATURES OF CARDIOVASCULAR MORTALITY

An analysis of CVD mortality in Russia cannot be complete without consideration of the regional features that manifest themselves against the background of the general picture characteristic of the whole country.

The most unfavorable situation in 2013 was in the regions of the Far East, some regions of Eastern Siberia (Tyva, Irkutsk oblast, Yamalo-Nenets autonomous district), and in the north and northwest of the European part of Russia and the Urals (Perm kray). On the contrary, the regions with the lowest mortality from CVD diseases are cities of federal significance (Moscow and St. Petersburg), the south of the European part of Russia, the Volga region and some regions of Western Siberia (Figures 13 and 14).

Figures 15 and 16 show the changes in the standardized death rates from CVD of men and women in the regions of Russia. Over the decade from 2003 to 2013 these changes were positive in all Russian regions, although their magnitude varied from region to region. In general, the standardized death rate from cardiovascular diseases in Russia decreased by 36.3% in men and by 37.8% in women. The highest rates of mortality reduction were primarily recorded in those regions that in 2003 had the highest mortality rates from diseases of the circulatory system, mainly the regions around Moscow and St. Petersburg. Some of these regions managed to significantly improve their relative positions by 2013 (Ivanovo, Smolensk, Leningrad, Lipetsk, Kursk and Tambov regions). At the same time, we note a sharp increase in all these areas (with the exception of the Leningrad Region) in the share of deaths from senility of persons over 80, which may be indicative not so much of real progress in reducing cardiovascular mortality as of changes in regional practices of coding the causes of death (for more details see below). High rates of reduction in mortality from diseases of the circulatory system were observed in Moscow and St. Petersburg, which further strengthened their positions. Modest rates of mortality reduction from CVD were found in a number of regions of the Far East (Chukotka Autonomous District, Sakha Republic, Magadan Oblast and the Jewish Autonomous Region) and Siberia (YNAO, Altai Republic, Novosibirsk and Omsk Regions).

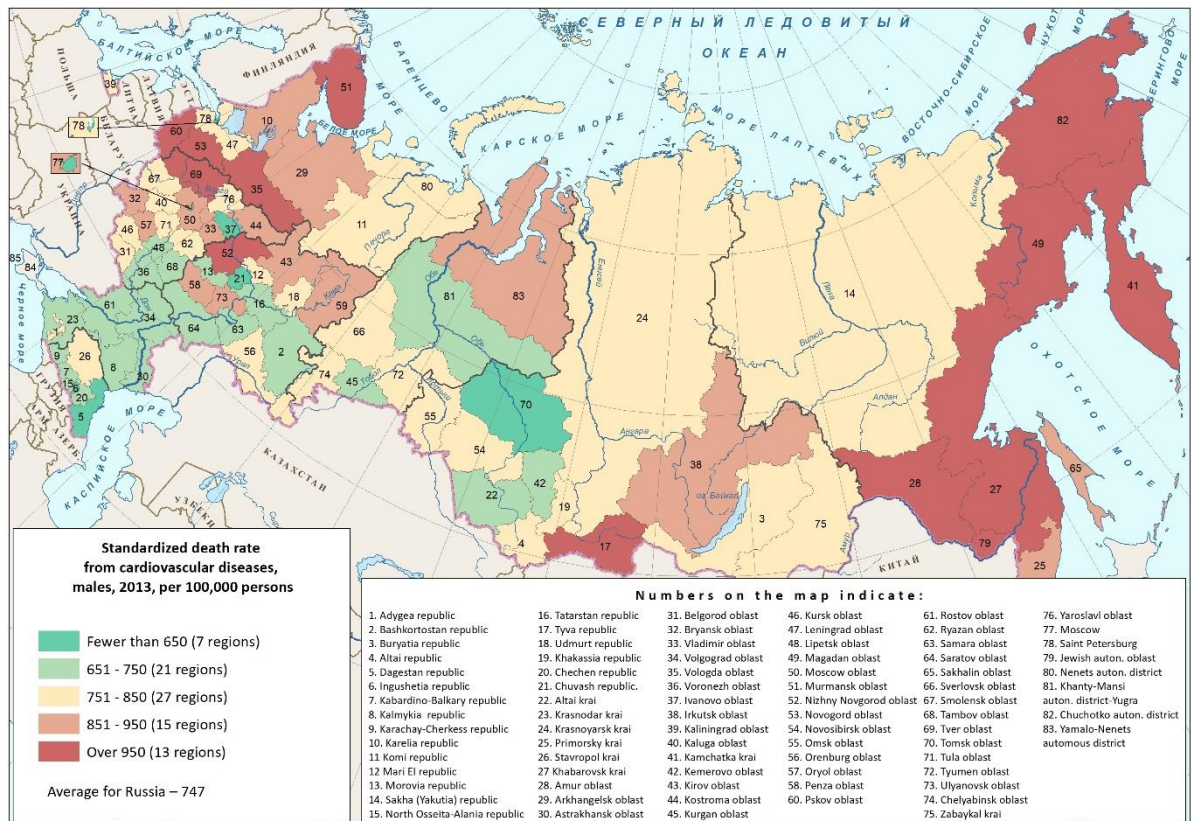


Figure 13. Mortality from cardiovascular diseases, males, 2013

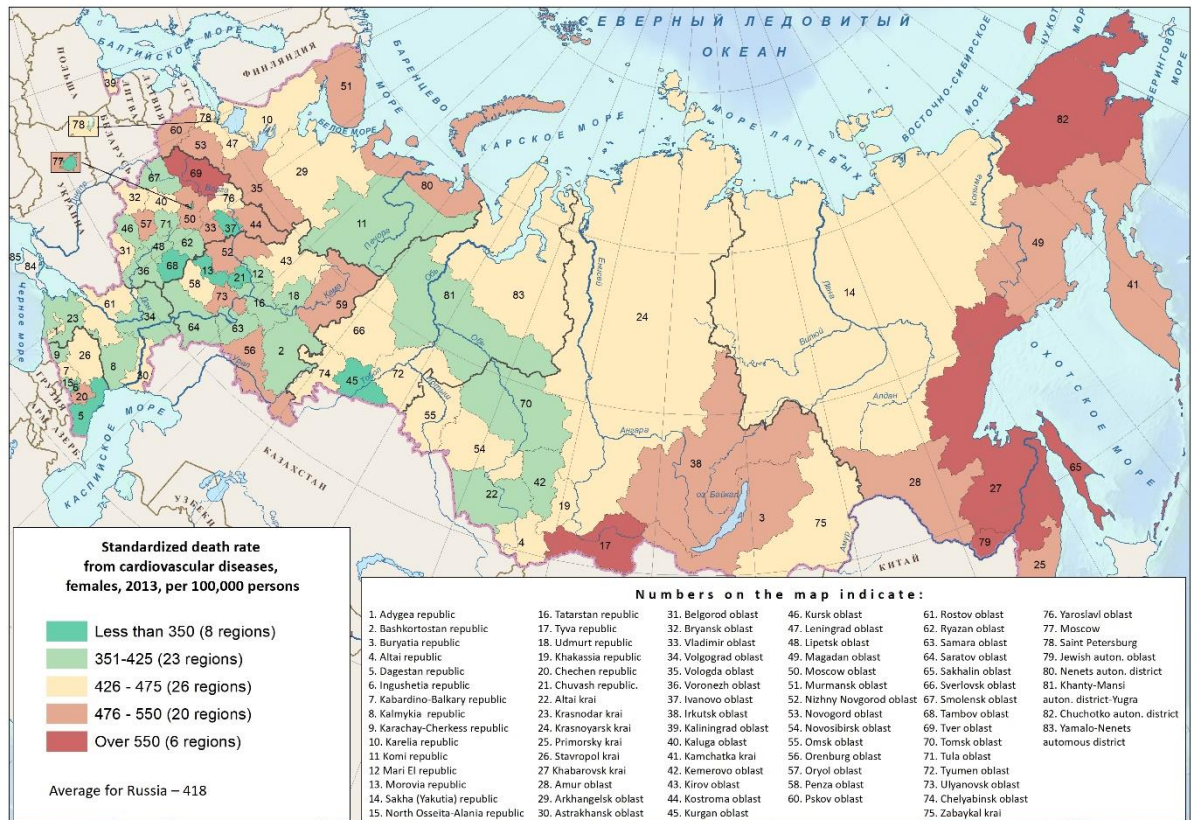


Figure 14. Mortality from cardiovascular diseases, females, 2013



Figure 15. Changes in cardiovascular mortality, males, 2003-2013



Figure 16. Changes in cardiovascular mortality, females, 2003-2013

HYPERDIAGNOSIS OR AN UNDERESTIMATE OF CARDIOVASCULAR MORTALITY?

The possibilities of analyzing the level and trends of mortality from diseases of the circulatory system depend significantly on the quality of the coding of the causes of death when filling out the medical certificate of death. This quality in Russia is far from flawless.

Often, those dying at older ages had several diseases, each of which in some way could have led to death. In the process of preparing a medical certificate of death, which is the main source of statistical information, the physician must choose from an aggregate of possible causes the underlying one. For these purposes, relevant recommendations have been developed both at the federal level and in the regions. In addition to recommendations, there is the opinion of the doctor and the practice of diagnosis and coding - the doctor often chooses not the most "correct", but the most common diagnosis, which does not raise questions among the relatives of the deceased or the management of the medical institution. In Russia, diseases of the circulatory system, considered a natural cause of death in old age, long remained such a diagnosis, thus giving the expert community reason to talk about the overdiagnosis of cardiovascular causes of death. Instructions on "cardiological padding" are still found today [Kakorina 2013].

At the same time, there is also reason to fear an underestimate of cardiovascular mortality. In March 1989, the Board of the Ministry of Health of the USSR, in order to combat the high mortality from cardiovascular diseases, on the initiative of the Minister E.I. Chazova adopted "Instructions on the procedure for determining the cause of death in the main diseases of the circulatory system and recording in the medical certificate of death." The fifteenth paragraph of the "Instructions ..." reads as follows: "For deaths occurring outside the hospital at the age of more than 80 years, in the absence of evidence in the medical documentation of diseases capable of causing death, in the absence of suspicion of violent death, and in cases when pathoanatomical research was not conducted, a certificate of death from a doctor or medical assistant shall be issued indicating "senility" as the cause of death." Note that the diagnosis of "senility" is allowed only after age 80, and this cause of death belongs to the class "Symptoms, signs and abnormalities found in clinical and laboratory studies, not classified elsewhere", which essentially means that the exact cause of death is not established.

Growth in the number of deaths and in the mortality ratio due to senility was not long in coming (Figure 17). By the mid-2000s, the indication "senility" as the original cause of death had become much rarer, but, as it turned out, not for long. In the last few years, especially since 2012, the number of deaths diagnosed as from senility has been steadily increasing, in unison with a decline in mortality from diseases of the circulatory system in people over 80. For example, in 2012, 11.8% of those dying at the age of 80 and older died with the diagnosis "senility", while 72.3% died of cardiovascular diseases. By 2014, the share of deaths from "senility" was already 18.7% (up 6.9 percentage points), and from cardiovascular diseases - 61.2% (down 11.1 pp).

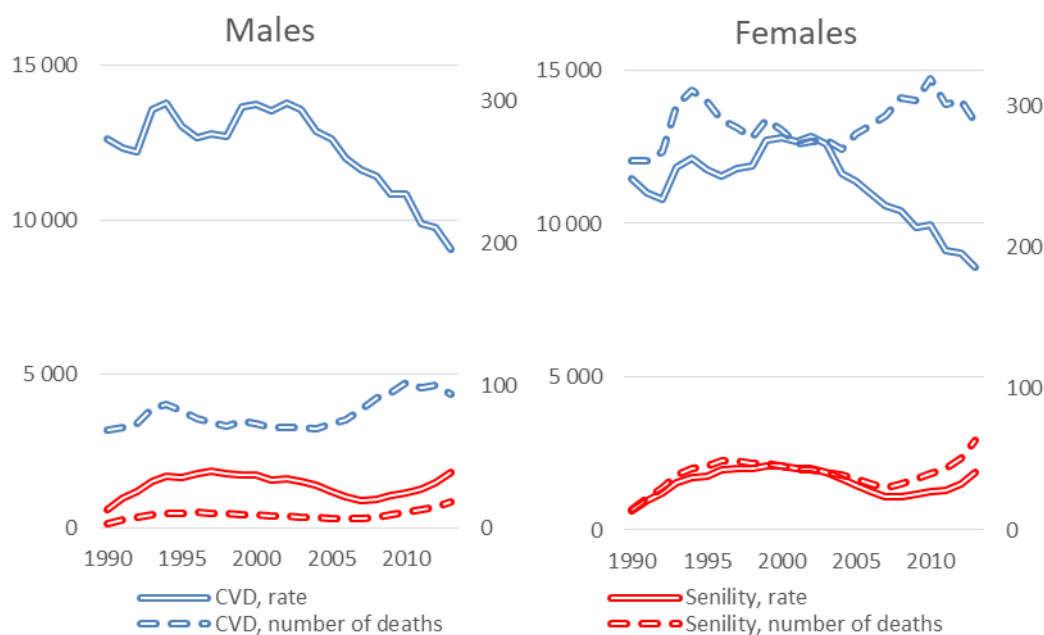


Figure 17. Mortality rates from CVD and "senility" at the age of 80 years and older, per 100,000 people (left axis) and the absolute number of deaths from CVD and "senility" at the age of 80 years and older, thousand people (right axis)

An analysis of mortality by cause of death in recent years shows that the Presidential Decree "On Improving Public Health Policy", aimed at reducing the overall mortality rates from a number of causes of death, including from diseases of the circulatory system, can lead to the fact that some regions of the Russian Federation, in striving to achieve target mortality, change the practice of coding the causes of death, as we have already had occasion to discuss [Vishnevsky, Andreev, Timonin 2015].

The decree was issued in May 2012. From 2012 to 2014, the total number of deaths in Russia decreased by 1.5%. This decrease did not affect all regions; in some of them the number of deaths increased. The corresponding indicator for the regions varies from -15% in the Nenets Autonomous District and -8.7% in the Magadan Region to 3.5% in the Khanty-Mansiysk Autonomous District - Ugra. If we exclude regions with extreme indicators, then in 77 out of 83 regions the changes lie in the range from -9% to 2%. But the situation with cardiovascular diseases looks different. In Russia, the total number of deaths from them decreased by 10.9%, while the number of deaths from all other causes increased by 10.2%. If we turn to regional indicators, it is striking that the greatest decrease in the number of deaths from cardiovascular diseases is observed where mortality from other causes increased despite almost no change in the total number of deaths (table 5).

In Moscow and St. Petersburg the number of deaths from cardiovascular diseases decreased by 3.0 and 7.2%, and from other causes increased by 3.4 and 3.6%, respectively.

Table 5. The change in the number of deaths from all causes of death, from cardiovascular diseases and from all other causes of death, 2012-2014, %

	All causes	Cardiovascular diseases	All other causes
Rostov region	0.2	-31.4	52.7
Belgorod region	0.0	-20.8	45.2
Mariy El republic	-0.4	-30.3	33.2
Vladimir region	-2.0	-22.2	31.4
Yaroslav region	-2.2	-23.8	28.4
Bryansk region	-2.9	-25.9	38.9
Tula region	-4.8	-30.1	31.2

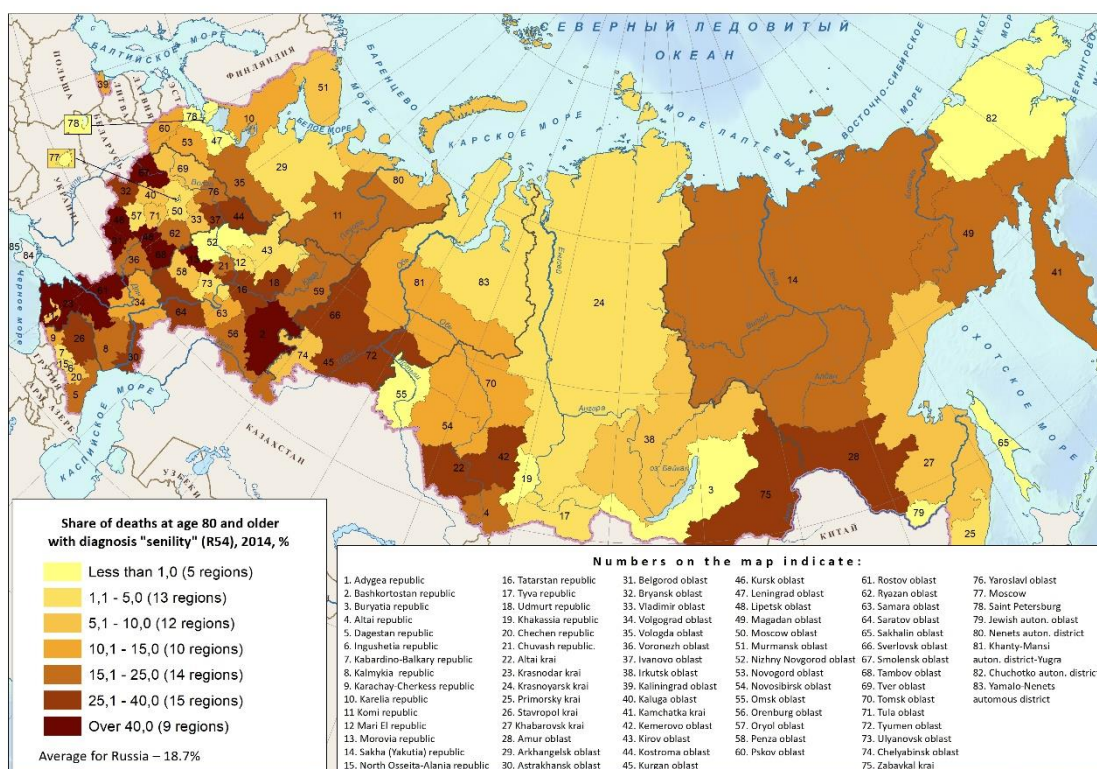
The number of deaths from "senility" grew too. The proportion of deaths with this diagnosis increased between 2012 and 2014 from 11.8 to 18.7%, and varied enormously by region (Figures 18a and 18b). In Bashkortostan and Mordovia, the cause of more than half of the deaths among those over 80 years old was classified this way. In St. Petersburg, this diagnosis was not found, while in Moscow the proportion of people who died of senility was less than 0.1%. But in 20 regions of the Russian Federation, the proportion of those who died of senility at the age of 80 and older in 2012 exceeded 20%. In 2014, the number of such territories increased to 31. In the Kostroma, Sverdlovsk, Bryansk, Belgorod and Rostov regions, the percentage of deaths with the diagnosis of diagnosis of senility increased from 21 to 49 percentage points, and the decrease in the proportion of deaths with cardiovascular diagnosis was 22 to 49 points. In the Altai Republic, Khanty-Mansiysk Autonomous Okrug, Perm Krai, Orenburg, Amur, Astrakhan oblasts, the percentage of deaths with the diagnosis of senility increased from 12 to 21 percentage points, and the proportion of cardiovascular diagnoses decreased from 9 to 21 percentage points.

The response of the Ministry of Health of the Russian Federation to this "unexpected" increase in mortality from "senility" was a letter sent at the end of 2014 to the heads of executive bodies in the Russian Federation in the field of health care, explaining that the term "senility" refers to inaccurately indicated conditions, and that criteria for its use as the underlying cause of death are: "Age over 80 years, the absence of evidence in the medical records of chronic diseases, injuries and their consequences capable of causing death, the absence of suspicion of violent death."

The existence in the recent past of overdiagnosis of circulatory diseases as a cause of death is very likely. It is possible that the regions, in their attempts to achieve target mortality indicators, try to get rid of the phenomenon and change the practice of coding the causes of death. But it is not at all clear to what extent such radical changes are justified. In total, the number of deaths from diseases of the circulatory system decreased over 2 years by 15% or more in 19 regions.



2012



2014

Figure 18. Share of deaths at the age of 80 years and older with the diagnosis "senility", 2012 and 2014

The change in the practice of coding the causes of death may, in principle, be valid, but it needs to be well founded. The issue requires special study, and the principles of coding should be unified, as the lack of uniformity seriously complicates analysis [Danilova 2015; Danilova et. al 2016]. In any case, the decrease in mortality from cardiovascular diseases in the regions as a result of changes in the practice of coding the causes of death should not be confused with real success in the fight against cardiovascular pathology.

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HIV/AIDS IS REDUCING THE NUMBER OF RUSSIANS AND THEIR LIFE EXPECTANCY *

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The spread of the human immunodeficiency virus (HIV), an infection which is life-long and after a few years leads to the development of the deadly acquired immune deficiency syndrome (AIDS), has led to a pandemic of HIV/AIDS affecting the size and life expectancy of the world's population. The article presents data on the incidence of HIV infection and related mortality in the Russian Federation collected and systematized by the authors. In Russia, around 100,000 new cases of HIV are registered annually. The total number has reached 1 million, with the share of AIDS-related deaths relentlessly approaching 1% of total mortality from all causes, and in the 30–39 age group exceeding 5%. HIV represents nearly 50% of all deaths from infectious diseases, and is causing an overall growth in the number of such diseases. There is a direct threat of a further increase in HIV/AIDS-related deaths, as HIV-infected Russians comprise 1% of Russia's population aged 15-49. The group most affected by HIV are those aged 35-39: 2% of them are living with HIV. In the 30-34 age group, the proportion of persons with HIV is approaching 2%, and in the 40-44 age group it exceeds 1%. The growing proportion of heterosexual transmissions of HIV and the increasing number of HIV-infected women are alarming signs of the HIV epidemic's spillover from intravenous drug users into the general population, making the economic impact of the epidemic even worse. It is necessary to prevent further losses in the most productive part of the population by introducing more efficient HIV prevention strategies and expanding access to treatment of people living with HIV.

Key words: HIV, age, incidence, prevalence, ways of transmission, mortality, AIDS.

Infectious diseases still remain an important factor limiting people's life expectancy and numbers. The constant detection of new pathogens, which are spreading faster due to the development of the global market, the evolution of microorganisms under the influence of expanding human activity, and the development of resistance of microorganisms to antibiotics all give grounds to assume an increase in the role of infections in demographic processes, while the discovery of a connection between somatic diseases (gastric ulcer, lymphoma, etc.) and infectious agents suggests the need for a certain rethinking of the concept of the "epidemiological transition" in demographic processes.

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Some time ago, a classification of infection groups according to their impact on demographic indicators was proposed [Pokrovsky 2004a; 2007]. Infections differ in different levels of mortality and / or affect different age groups of the population, and, accordingly, reduce life expectancy to differing degrees. One group of infections, having little effect on life expectancy, reduces reproductive capacity (infectious parotitis, sexually transmitted infections - STIs) and fertility. Another group of infections (rubella, Zika) does not particularly affect life expectancy and reproductive capacity, but provokes the appearance of offspring with disabilities, affecting the population size of the following generation. Another classification system singles out infectious diseases which tend to last a lifetime and eventually lead to fatal complications (tuberculosis, viral hepatitis C), but which manifest their symptoms long after infection, thus making it easier for them to spread unnoticed.

The infection caused by the human immunodeficiency virus (HIV), which leads to the development of the fatal syndrome of acquired immune deficiency (AIDS), combines the worst traits of all these groups: it causes premature deaths, reduces fecundity and fertility, often leads to the birth of quite unhealthy children, lasts a lifetime and manifests itself late, making its spread hard to control.

Concerns have been expressed repeatedly about the danger of a large-scale HIV epidemic developing in Russia [Pokrovsky 2004b; 2007]. At the same time, demographers have suggested that "it seems mortality from AIDS will also become perceptible" [Demographic modernization ... 2006: 369]. However, the view of some of our opponents on the possibility of an HIV/AIDS epidemic developing in Russia has been "much more conservative", based on age trends - the likely reduction in the percentage of young people, who are most vulnerable to HIV, among the general population and the belief that "the presence of a relatively large number of older people helps to strengthen social control" [Denisov, Sakevich 2004: 76, 85].

The purpose of this article is to compare statistical data on the demographic aspects of the HIV epidemic in Russia with a view to assessing the degree of the HIV/AIDS threat to the country's population.

THE HIV/AIDS PANDEMIC AND DEMOGRAPHIC PROCESSES

The HIV pandemic in its impact on the demographic situation can be compared to the two world wars. In the 35 years from the time of its discovery to the end of 2015, it affected more than 78 million people and claimed 35-40 million lives. In 2015 alone there were 2.1 million HIV-infected people in the world and 1.1 million people died of AIDS [UNAIDS 2016]. Despite advances in the treatment of the disease, these losses will continue to grow for a long time.

The spread of HIV/AIDS directly lowers the life expectancy of the population, reduces its numbers due to the premature death of men and women of childbearing age, increases infant mortality, and moreover reduces the reproductive function and the number of deliveries in infected women. HIV/AIDS also has economic consequences. By reducing the size of the able-bodied population, the epidemic worsens the overall economic indicators, and is also associated with an increase in the number of people unable to work and requiring social support: people with disabilities and children left orphans after the death of their parents. Medical and social care for

people with HIV infection diverts significant resources from other areas of health, which increases the risk of premature death from other diseases.

In just 30 years, HIV has spread throughout the globe, despite the fact that the virus is naturally transmitted from person to person in only a few ways: through sexual intercourse and from the mother to the fetus, as well as from the parenteral passage of an HIV-infected person's tissues into the body of a healthy one (blood transfusion, injections with the same syringe, etc.). HIV infection is life-long. There are no recorded cases of complete recovery, that is, of a person getting rid of the virus. Life expectancy after HIV infection can exceed 20 years, and there are no external signs of the disease, which makes it possible for HIV to spread imperceptibly. The rapid spread of HIV has also been aided by the ease of modern travel, including for people with HIV.

In 2010-2012, HIV/AIDS was the 6th leading cause of death in the world. The highest level of mortality from HIV infection was observed in low-income countries, where, in terms of the number of deaths, HIV/AIDS ranked second after infections of the upper respiratory tract. In 2015, HIV/AIDS was no longer among the top ten causes of death worldwide, but in low-income countries ranked 5th by the number of deaths per 100,000 inhabitants [WHO 2017].

The most dramatic scales of the HIV/AIDS epidemic have been reached in the economically developed South Africa, where a great role has been played by migration links with Central Africa and the seasonal movement of workers within the country. UNAIDS estimated that in 2015, 19.2% of South Africans aged 15 to 49 were living with HIV [2015]; 162,500 deaths, or 30.5% of the country's total, were from HIV/AIDS [Statistics South Africa 2016].

The annual HIV/AIDS mortality rate in some countries has been reduced by the massive use of a combination of special anti-HIV antiretroviral drugs in a technique called highly active antiretroviral therapy (ART), which was first proposed in the late 1990s. Thanks to ART, in the United States several times fewer people died directly of AIDS in 2014 than in 1995, although the total number of HIV-infected Americans increased during this time period [CDC 2016].

ART can theoretically extend the life of HIV-infected people to a country's average life expectancy [May et al. 2014]. However, according to one of the cohort studies completed in 2011, the life expectancy of Americans infected with HIV at the age of 20 was 13 years shorter than that of their uninfected peers [Marcus et al. 2016]. According to British researchers [Croxford et al. 2016], in the UK the HIV-positive population has a six times higher risk of death than the general population. The difference in the risk of premature death is largely due to the fact that some of the cases of HIV infection are detected only after the onset of AIDS, when the effectiveness of treatment is not so high. In addition, the desired effect of treatment is achieved only in the case of strict adherence to treatment: the regular taking of several (3-4) drugs, which is expected to be carried out for life. A constant problem is the toxicity of drugs used in ART and the specifics of their interaction with the treatment of other diseases. The significance of this latter problem increases with the age of the HIV-infected person being treated. In the case of non-adherence to the ART regimen, forms of HIV resistant to drugs arise and spread, requiring the transition to other drugs. Thus, the large-scale use of ART is a rather complex exercise that requires of public healthcare not only great expenditures, but also good organization of medical care.

In recent years, it has been shown that an HIV-infected person who receives ART is less infectious, and in particular that women receiving the treatment give birth to children uninfected by HIV. The likelihood of HIV transmission is also reduced when antiretroviral drugs are taken by uninfected people at risk of infection, such as sexual partners of HIV-positive individuals. The widespread use of these drugs for therapeutic and preventive purposes is the basis of the modern strategy for combating HIV/AIDS, called "treatment as prevention" [WHO 2013; UNAIDS 2015]. It is assumed that, if the strategy is fully successful, HIV transmission will be significantly reduced, all previously HIV-infected individuals will receive ART before they die, and after they all die, the pandemic will stop. Thus, the demographic losses from HIV/AIDS will be minimized. A major obstacle to the implementation of this strategy is the high cost of antiretroviral drugs. In order to overcome this barrier, the production of cheap copies of original drugs, so-called generics, is being set up for the inhabitants of developing countries, but the widespread use of such drugs on a pandemic scale remains costly, and most poor countries receive them through international funds. Since generics are copies of drugs whose patents have expired, their use implies a certain lag in the quality of the treatment provided. Currently, the "treatment as prevention" strategy, because of its high cost, has been fully adopted by only a few rich countries with a developed healthcare system, while the rest are trying, as far as possible, to increase the coverage of the HIV-positive population by ART.

Critics of the strategy believe it too difficult to organize testing of the population in such a way as to identify all people living with HIV and those at risk of infection, provide them with medicines and organize control over the effectiveness of the use of medicines. For this reason, preventive measures such as educating the population about HIV-safe behavior and special programs for people who use drugs intravenously (such as syringe exchange, etc.) have not lost their relevance.

To plan effective anti-HIV/AIDS measures, it is necessary to determine the current stage of development of the HIV epidemic in Russia and the degree of harm it is causing and could cause in the future.

THE DEVELOPMENT OF THE HIV/AIDS EPIDEMIC IN RUSSIA

Materials and methods

This article publishes data, processed and analyzed by us, on the incidence of HIV infection for the period from 1987 to 2016, which, on instructions of Rospotrebnadzor, were gathered by the Federal Scientific and Methodological Center for AIDS Prevention and Control of the Central Epidemiological Scientific Research Institute of Rospotrebnadzor (Russian Agency for Health and Consumer Rights). All organizations testing people for HIV are required to inform Rospotrebnadzor of the number of tests conducted and every case of detection of an HIV-infected person, as well as to report data on risk factors for HIV infection from persons identified as HIV-positive and on their deaths [Rospotrebnadzor 2011]. We estimated the number of HIV-infected people in Russia using the Workbook method to estimate the prevalence of HIV in low level or concentrated epidemics [UNAIDS 2007].

The incidence of HIV infection

The total number of Russians infected with HIV registered by Rospotrebnadzor in the Russian Federation as of December 31, 2016 came to 1,114,815 people (according to preliminary data). Of them, 243,863 HIV-positive Russians died from various causes, that is, on this date there were 870,952 HIV-positive Russians living in Russia with an established HIV diagnosis. The dynamics of the number of registered HIV-positive citizens of Russia and the number of their deaths are reflected in Figure 1.

The number of living HIV-infected people, including those whose HIV infection has not yet been diagnosed due to the peculiarities of the disease, must significantly exceed this figure. According to calculations made using the [UNAIDS 2007] method, which is often used to compare the HIV incidence of the population of different countries, the total number of Russian citizens living with HIV in 2015 reached 1.3-1.4 million. Determining the number of HIV-infected individuals more precisely is difficult, not only because of shortcomings in the methods, but also because the number of people who use drugs intravenously is imprecise [Research Institute ... 2016].

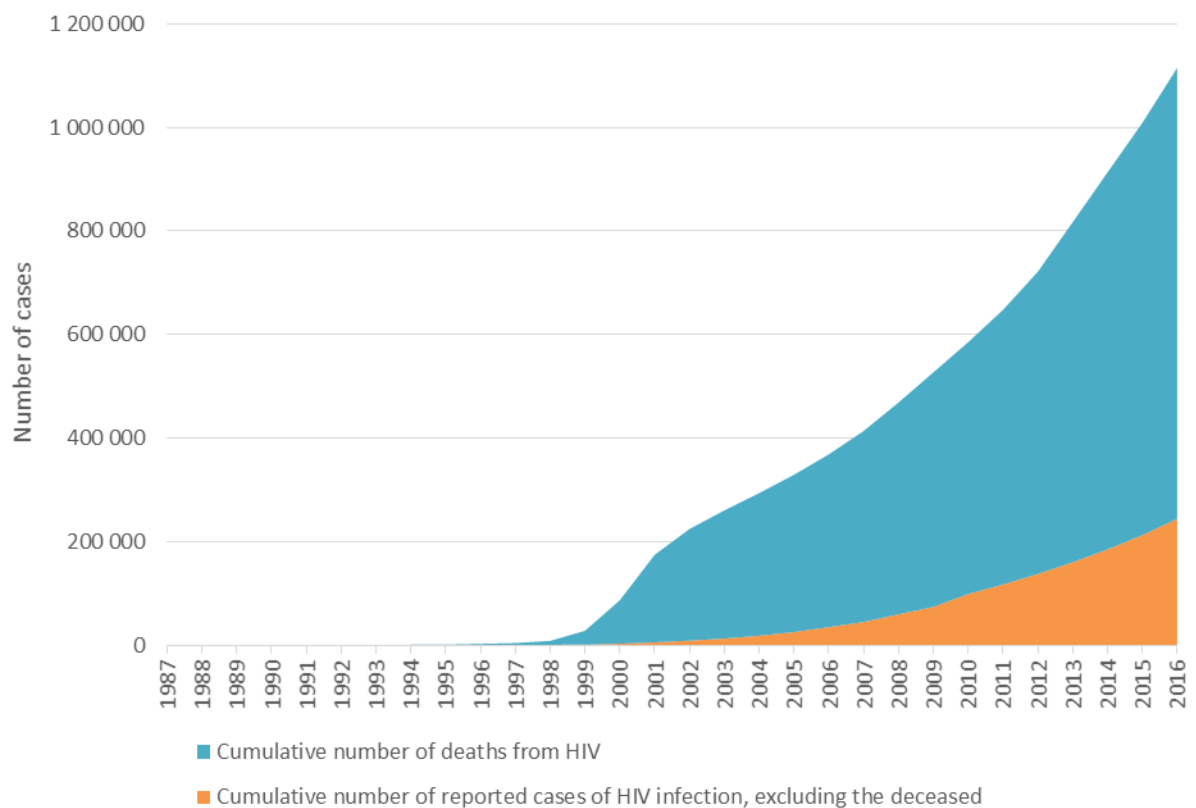


Figure 1. Cumulative number of reported cases of HIV infection among Russian citizens from 1987 to 2016

The term "morbidity" with regard to HIV infection is conditional, since the current testing system in Russia, which involves systematic testing for antibodies to HIV of certain groups of the population, identifies HIV-infected persons at different stages of the disease, i.e. at any time from 2-3 weeks from HIV infection until death. The recording of cases of AIDS of course characterizes the incidence of the last stage of HIV infection, but the collection of this information is not of great

practical importance, since it basically illustrates the degree of failure in the organization of treatment aimed at preventing the development of AIDS.

The structure of population groups recommended for testing for antibodies to HIV and the number of representatives of these groups who are tested change all the time, therefore, the result of such testing would probably best be called the “detectability” of cases of HIV infection. Data on the number of annual blood tests of the population of the Russian Federation for antibodies to HIV, the detection of which is a reliable sign of HIV infection, and the frequency of detection of HIV infections are shown in Figure 2.

As can be seen from Figure 2, the frequency of newly detected cases of HIV infection increased faster than did the number of tests, which indicates an increase in the incidence of HIV-positive individuals among the population, especially since cases of repeated detection of antibodies in the same person are not included in these results. To put it simply, the data in Figure 2 indicate the continuing spread of HIV infection.

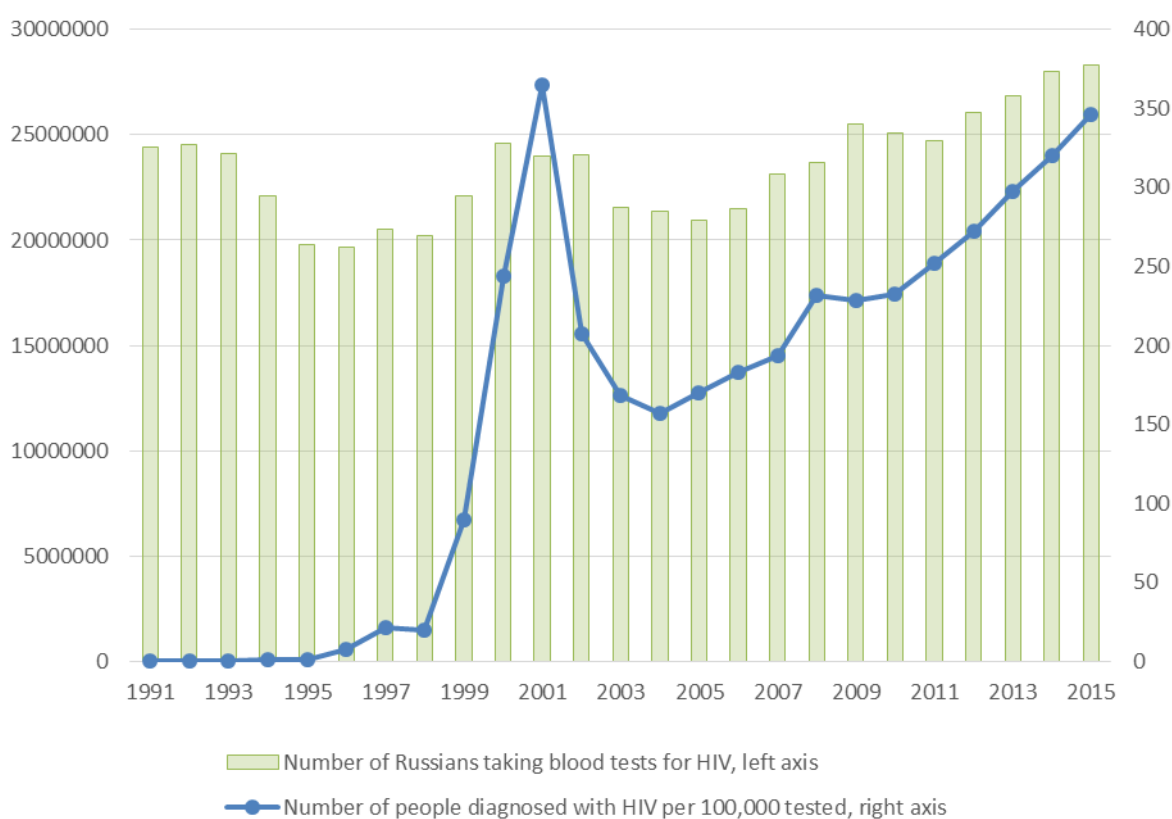


Figure 2. Results of testing for HIV in the Russian Federation in 1991-2016

Note. Columns reflect the number of blood tests of citizens for antibodies to HIV; the line characterizes the change in the number of identified HIV-positive people per 100,000 blood tests in the year of observation.

The prevalence of HIV infection

Because of the long-term course of HIV infection, in terms of assessing the epidemic situation, of greater importance than detectability is prevalence, an indicator that determines the number of living HIV-positive persons relative to the number of people living in a given area. The prevalence

indicator is obtained by subtracting from the number of HIV-infected persons the number of infected persons who have died.

At the end of 2016, the HIV prevalence of the entire Russian population, based on the existence of 870,952 HIV-positive people, was 594.3 per 100,000 persons (0.6 % of the total population). In international practice, the definition of HIV prevalence uses the estimated number of live HIV-infected people per 100,000 persons aged 15 to 49, due to the predominant role of sexual contact in HIV transmission. This indicator for Russia was 1.1% at the end of 2015. If we use our estimated number of Russians living with HIV, it reached 1.8%-2.0% of the population aged 15-49 in 2015. Figure 3 shows the structure of HIV infection in different age groups of the population of the Russian Federation.

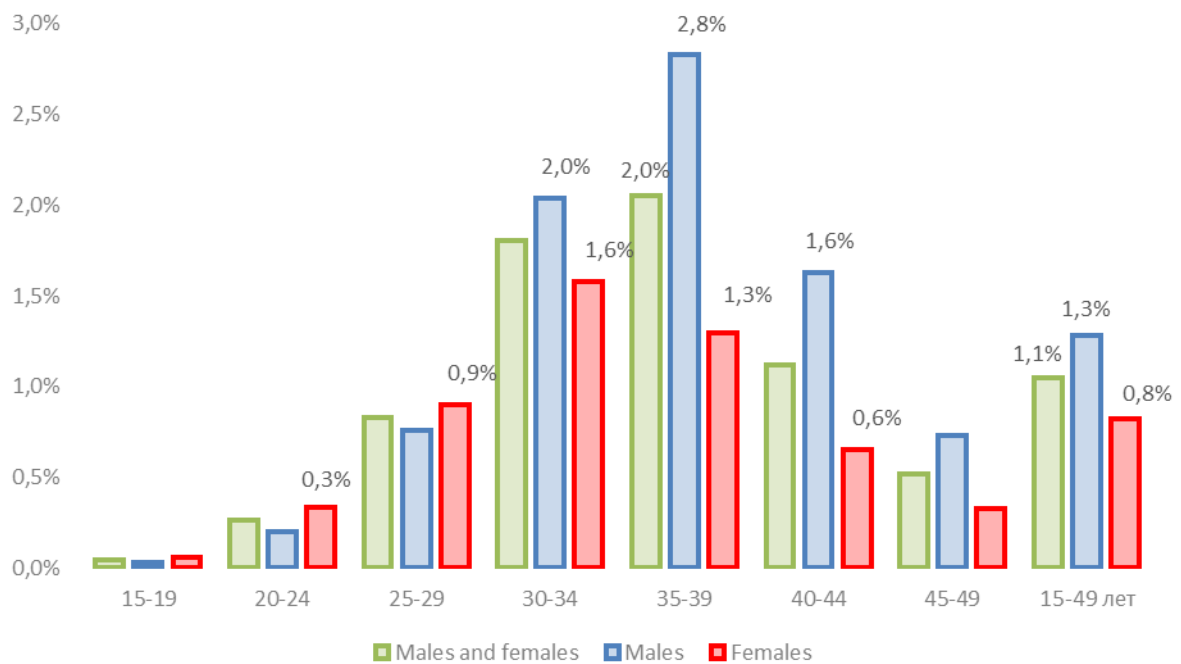


Figure 3. Percentage of HIV-positive persons in different age groups of men and women living in the Russian Federation, 2016

The highest level of prevalence is observed in the group aged 30-39 years. This is due to the fact that HIV infection is lifelong and the risk of acquiring HIV increases with age.

The diagram in Figure 4 shows that the age of HIV-infected persons by year of diagnosing is gradually increasing.

On the one hand, this observation could suggest an increase in the lifespan of HIV-positive persons, but this increase may not in fact be occurring, since AIDS develops faster in older patients. This observation requires changes in how the system of treatment is organized: the older the age group, the more important it is to begin treatment of HIV infection early, as well as to make adjustments which take into account the treatment of diseases characteristic of older ages. At present, there is a clear correlation between the progression of HIV infection and risks of cardiovascular diseases associated with ART.

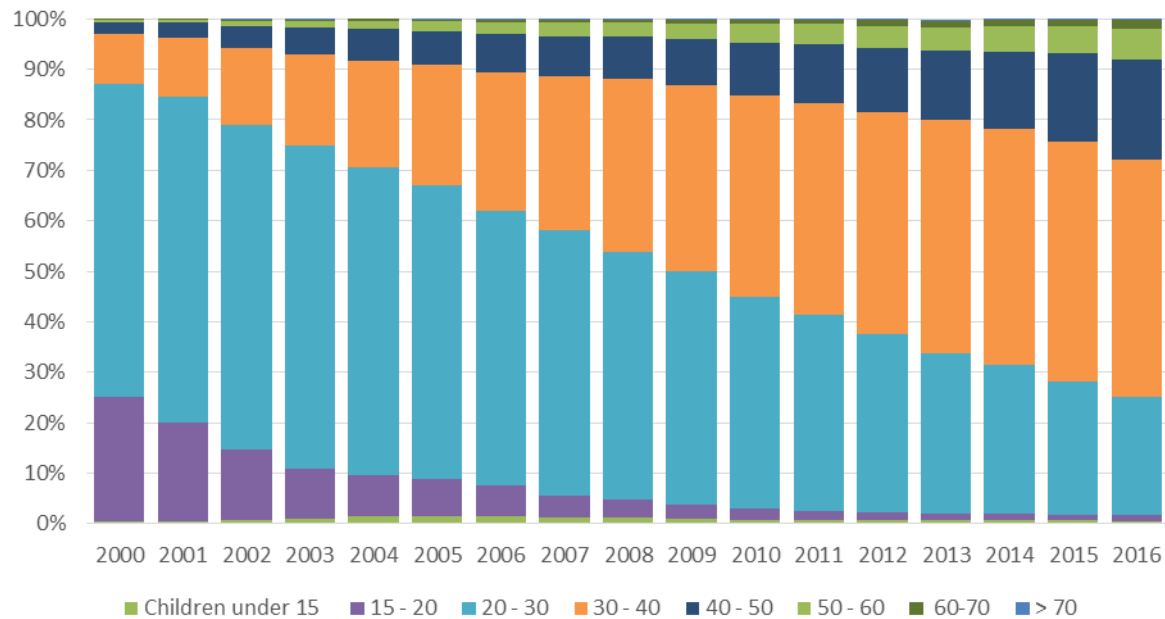


Figure 4. Distribution of new HIV infections by age at the time of detection in 2000-2016

Over time, the sex ratio among individuals identified as HIV-positive has changed (Figure 5).

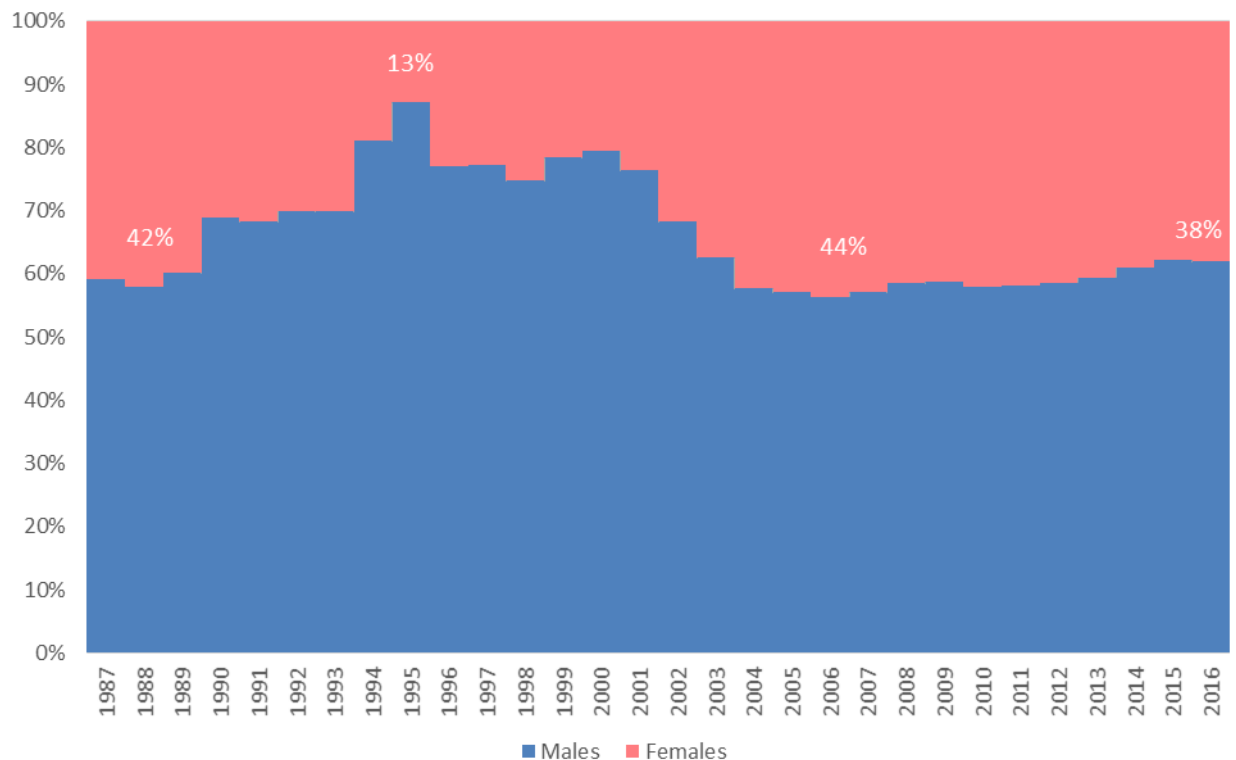


Figure 5. Distribution of HIV-infected persons in Russia in 1987 – 2016 by sex and year of detection

One can attempt to explain both the "aging" of persons diagnosed with HIV and the increase in the proportion of women among them in several ways. It is highly probable that these

trends are related to changes in the epidemiological situation. Figure 6 shows the changing role of different modes of HIV transmission among the Russian population. At the turn of 2000, the chief mode of infection was intravenous drug use, which explains the overwhelming predominance of men among persons identified as HIV-positive in this period (Figure 5), as men use drugs more often than women [Scientific Research Institute ... 2016]. Since 2002, the proportion of sexually transmitted infections has increased, mainly during sex between men and women. Because in heterosexual transmission both sexes participate, this trend reflects a marked increase in the proportion of women in the 2000s. However, in 2013-2016 the proportion of women declined slightly, which may be due to an increase in HIV transmission during sexual intercourse between men who hide their homosexuality and report heterosexual relationships.

The increase in the age of newly diagnosed HIV-infected persons is partly due to the increase in the age of intravenous drug users. Narcologists note that "over the past 5 years, injecting drug users have been seeking treatment for the first time in their lives at an older age, and there are fewer women among them" [Scientific Research Institute ... 2016]. The authors report a "decrease in the proportion of adolescents (from 1.7 to 0.8%) and young people aged 18-19 (from 6.0 to 2.1%), a consistently high proportion of the age group of 20-39 years (86- 88%) and an increase in the proportion of patients aged 40-59 years (from 5.9 to 10.4%)." It is known that in the USA heroin is used mainly by people over 20 years of age [U.S. Department ... 2014].

The data of narcologists largely coincide with our data on the distribution of HIV-positive persons in different age groups (Figure 3). At the same time, it is necessary to take into account that a drug user can become infected with HIV at an indeterminate time after the first intravenous injection. The longer a drug is used, the greater the likelihood of HIV infection.

Judging from the data in Figure 3, HIV infection occurs most commonly in the group of men aged 35-39 years (2.8% members of this age group), most likely because drug users in this group have been using drugs for a very long time. In groups under age 30, the percentage of infected women is higher than that of their male peers, which indicates a predominance of sexual transmission of infection at younger ages. This is probably due to the fact that, in cases of irregular sexual contacts, men are often older than women and belong precisely to those age groups in which HIV is the most common.

In general, the graphs in Figures 3-5 show just how serious HIV infection is among the most able-bodied part of the population, those aged 30-40 who have already completed their vocational training. The study "Portrait of a patient living with HIV" [Pokrovskaya et al., 2016] showed that 68.6% of HIV-positive people visiting AIDS centers had full or part-time jobs. At the same time, 8.3% of women did not work, as they were temporarily on maternity leave.

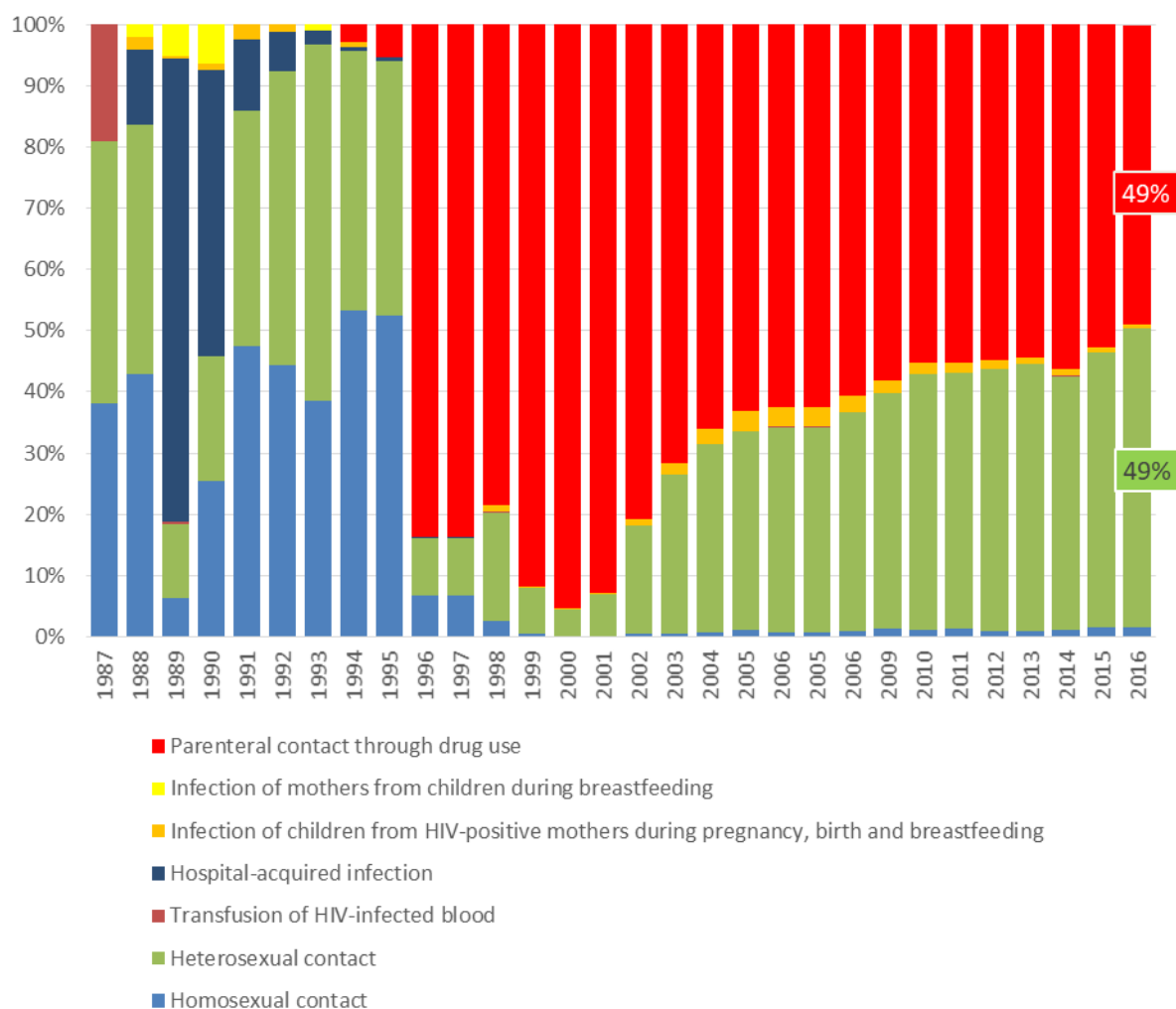


Figure 6. Distribution of HIV-infected persons in Russia by the main known risk factors for infection from 1987 to 2016

Mortality from HIV infection

Previous studies have shown that, without ART, the median lifespan of HIV-infected Russians from the time of infection to death was 141.6 months (11.8 years). The average age of AIDS patients at the time of death (aged 16 to 76 years) was 34.3 years, the median age was 32.5 years [Pokrovskaya et al., 2014]. Therefore, we expected to see the increase in the incidence of HIV infection followed by an increase in mortality rates. At the same time, the use of highly active ART, which began in Russia on a large scale in 2007, should have led to an increase in the life expectancy of HIV-infected people and a reduction in the number of deaths at a young age.

Figure 1 shows a steady increase in the cumulative number of deceased HIV-infected citizens of Russia, which by the end of 2016 (after 30 years of observation) had reached 243,863, with the number of deaths increasing every year. This increase may be due to an overall rise in the number of HIV-infected individuals, or may have only an indirect relationship with HIV (e.g., suicide).

The growing danger of HIV/AIDS is most evident in the change in the mortality rate of Russians from "the disease caused by the human immunodeficiency virus," which increased from

1.1 (per 100,000 persons) in 2005 to 8.7 in 2014, while the overall mortality rate from infections decreased from 27.2 to 22.3, probably due to a decrease in mortality from tuberculosis from 22.5 to 10.0 [Rosstat 2015: 150]. Given the increase in the number of deaths of HIV-infected people, there is no doubt that in 2016 the mortality rate from HIV infection increased even more.

According to Rosstat [Rosstat 2016], HIV infection in 2014 claimed the lives of 12,540 Russians, and in 2015 – 15,520. Those who died of HIV infection in 2015 accounted for 45.1% of all deaths from "some infectious diseases" (34 372). The losses from HIV infection in 2015 for the first time exceeded the losses from tuberculosis (13,484). In Moscow, "it is now HIV that makes the main contribution to mortality from infectious and parasitic diseases (in 2014, 50% for men and 56% for women)" [Andreev, Kvasha, Kharkov 2016: 69]. The increase in the number of deaths from HIV caused the overall increase in the number of deaths from infectious diseases in 2015, despite the decrease in the number of deaths from tuberculosis. In 2015, 34,372 Russians died of "some infectious diseases" at working age, whereas in 2013 the number was 31,807, and in 2014 – 32,103 [Rosstat 2016]. Judging by the increase in the number of deaths from HIV infection, ART in Russia is still not being used effectively.

Deaths due to HIV infection in 2015 amounted to 0.81% of all deaths of Russians [Rosstat 2016]. This figure seems insignificant - if we do not take into account that HIV infection is a new, recently unknown cause of death, often occurring at a relatively young age. In 2014, according to official data [Rosstat 2015], 98,953 Russians died between the ages of 30 and 39, of whom, according to our data, 11,396 - i.e. 11.5% of all deaths in this age group – had HIV. Given that Russian citizens aged 30-39 are most affected by HIV (Figures 3 and 4), it can be argued that HIV infection has become a significant factor in reducing the number of Russians and shortening their life expectancy.

Judging by the increase in the incidence rate (Figure 1) and the level of the Russian population's exposure to HIV infection (Figure 3), its contribution to premature mortality of Russians will increase steadily unless the further spread of HIV is stopped and the continued and effective use of ART is not organized.

The influence of HIV infection on reproduction

The proportion of women among HIV-infected Russians is 40% or more (Figure 5), which is directly related to fertility. The HIV infection of a large number of women (more than 410,000) cannot but affect the reproduction, if only because of the possible death of these women in childbearing age. One study [Pokrovskaya et al., 2014] showed that women diagnosed with AIDS who did not receive ART died at a younger age (mean age of men - 34.8, median - 33 years; mean age of women - 32.9, median - 31 years). In another study [Pokrovskaya et al., 2016], it was noted that at the time of the study HIV-infected women had fewer children than the average woman in the Russian Federation. Currently, ART and other measures that significantly reduce the risk of HIV transmission from the mother to a future child can be used with high efficiency. However, these techniques require the continued use of antiretroviral drugs under the regular supervision of doctors during pregnancy. Due to the fact that in Russia some HIV-infected women also use drugs, these requirements are not always strictly followed by them. For this reason, despite the fact that the importance of mother-to-child transmission of HIV is decreasing (Figure 5), about 400 children every year in Russia are infected by mothers during pregnancy and childbirth or breastfeeding, and

in the future will need ART to survive. Some optimism is inspired only by the fact that the use of ART can prolong their life to childbearing age and ensure the birth of HIV-free offspring.

The effect of migration on the spread of HIV

HIV was brought to Russia from abroad by various travelers 20-30 years ago, but at present the number of infected foreigners diagnosed in Russia is insignificant relative to the number of HIV-infected Russians, especially since most of them are deported from Russia. During the whole period of observation, 29,625 foreigners with HIV infection were registered in Russia, including 1,736 in 2016. Therefore, there is no reason to believe that foreigners currently have a significant impact on the spread of HIV in Russia. More important is internal migration, which results in the spread of HIV throughout the entire country.

DISCUSSION

While the problem of HIV/AIDS in Russia only recently attracted any particular attention from demographers, its role in demographic processes has gradually increased to a noticeable level. The data cited point to the continuing spread of HIV in Russia, leading to an increase in the incidence and population burden of HIV infection, and then to an increase in deaths from AIDS among the most active age groups of the population. From this it follows that the measures taken to counteract HIV/AIDS are still insufficient to overcome the consequences of the epidemic, which are harmful to the demographic situation in Russia.

Developing countries too can successfully fight HIV infection. A good illustration of this is Thailand (population 68 million people), where the number of new cases decreased from 152,000 in 1992 to 7,000 in 2015. The annual cost of HIV/AIDS programs in Thailand is about 300 million US dollars, which is close to similar expenditures of the federal budget of the Russian Federation in 2016, but twice as high per capita. These programs provide 65% of HIV-positive Thai people with ART [HIV and AIDS ... 2015]. However, as the well-known American philosopher F. Fukuyama wrote, "although a significant part of the problems of the fight against AIDS is a resource issue, another important aspect is the government's ability to implement health programs" [Fukuyama 2006: 6].

CONCLUSION

Rapid growth rates of new HIV infections in Russia, together with a high prevalence accompanied by a significant increase in AIDS deaths in the 30-40 age group, suggest that further development of the HIV/AIDS epidemic could worsen the demographic situation in Russia and adversely affect the economic situation of the country.

To prevent new HIV infections in Russia, it is necessary to introduce more effective HIV prevention programs and to improve and expand HIV treatment programs to increase the life expectancy of HIV-positive Russians. There is also a need for more in-depth studies of the social, psychological and demographic dimensions of the spread of HIV/AIDS.

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THE CONTRACEPTIVE REVOLUTION IN RUSSIA*

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In the 1960s and 1970s, with the introduction of hormonal contraception, as well as of a new generation of intrauterine contraception, Western countries saw cardinal changes in methods of fertility regulation so significant that the American demographers Ch. Westoff and N. Ryder called them "The contraceptive revolution." By this time, the transition to low fertility in developed countries, as, indeed, in Russia, was completed, and family planning had become a common practice. However, the new technologies significantly increased the effectiveness of birth control, and this change would have important social and demographic consequences. Underestimation of the importance of family planning and underdevelopment of the corresponding services in the USSR and in Russia led to the contraceptive revolution beginning here much later than in the West, not until the post-Soviet years with the arrival of a market economy and information openness. For decades, induced abortion played a key role in the regulation of fertility, and only in the 1990s did modern methods of contraception become widespread and the unfavorable ratio of abortions to births begin to change for the better. The article describes the composition of the contraceptive methods used in countries of European culture and of those in Russia, and attempts to explain the difference between them. Based on national representative sample data, an analysis is made of current practice of contraceptive use in Russia. The conclusion is drawn that the contraceptive revolution in Russia is proceeding rather quickly, but without substantial state support.

Key words: birth control, family planning, contraception, contraceptive revolution, abortions, fertility.

REGULATION OF FERTILITY IN THE WORLD BEFORE THE START OF THE CONTRACEPTIVE REVOLUTION

The famous American demographer Charles Westoff studied the reproductive behavior of American families for many years. In particular, he conducted, together with Norman Ryder, two rounds of the National Fertility Study: in 1965 and 1970. In 1975, speaking at the annual meeting of the Population Association of America (PAA), of which he was elected president, he described as the most important result of the 1970 and, to some extent, the 1965 survey that they made it possible to record extraordinary changes in the control of fertility - "changes so dramatic that we entitled our forthcoming monograph: 'The Contraceptive Revolution'"¹ [Westoff 1975: 573].

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¹ The book was published in 1977 [Westoff, Ryder 1977].

Were these changes revolutionary? By this time, contraception had long been familiar to residents of Western Europe or the United States. This was not some rare and mainly clandestine use of various ways of preventing conception, the kind which had been resorted to in special cases or in a special environment since time immemorial, but rather a mass practice which had never existed before. In Europe, as far back as the 18th century, "contraceptive practices were assimilated with vices such a sodomy. Even the atheists of the eighteenth century condemned them as a violation of "Natural Law", the new divinity" [Sauvy 1969: 362].

Nevertheless, already from the end of the 18th century there was a steady, continuous decrease in fertility in France, indicating that contraception had become a common method of regulating family size. This gave French authors grounds to assert that the contraceptive revolution described by Westoff and Ryder in the mid-1970s was in fact the second. The first had occurred in France, "in a narrow family circle, indifferent to the shocks of political and social history, deaf to the open debate about the "depopulation" of France and, possibly, dumb in the confessional" [Leridon et al.1987: 14].

According to Leridon and co-authors, France paved the way for the "first contraceptive revolution", for a long time walking it alone, while the English and American neo-Malthusians fought, seemingly in vain, for the family's right to *birth control*, for which they were persecuted and accused of irresponsibility and immorality. But the growing momentum of the demographic transition made birth control an increasingly urgent demand, and, in the final analysis, it was the French way that proved to be the only possible response to this demand. All European countries, the United States and even Russia would eventually set out on this path, and after the First World War were already confidently moving along it. Since that time, France has lost its exceptional position, its level of fertility no longer differing from that of other countries of European culture. Within a very short time, fertility in all these countries had fallen to an unprecedented level, often lower than in France (Figures 1 and 2). This could only mean one thing: within three to four decades the practice of deliberate birth control by married couples, only recently not recognized, had become a mass phenomenon. It was a truly revolutionary change.

The total fertility of women's cohorts born in 1910 and 1920, who had basically finished their reproductive activity by 1950-1960, in countries of European culture both in Europe itself and overseas (Table 1) only confirms the above: the practice, rare and to some degree or other forbidden in the 19th century everywhere except in France, of deliberate birth control by married couples had, already in the first half of the twentieth century, become universal.

Table 1. Completed fertility per woman of the 1910 and 1920 cohorts in some countries

Country	Number of births		Country	Number of births	
	1910	1920		1910	1920
Australia	2.37	2.70	Italy	2.74	2.44
Belgium	2.05	2.13	Netherlands	...	3.06
Canada	2.76	3.18	Scotland	...	2.50
Denmark	2.23	2.43	Sweden	1.89	2.14
England and Wales	...	2.00	Switzerland	2.02	2.27
France	2.27	2.50	USA (white women)	2.23	2.65

Source: [Festy 1979: 300-301].

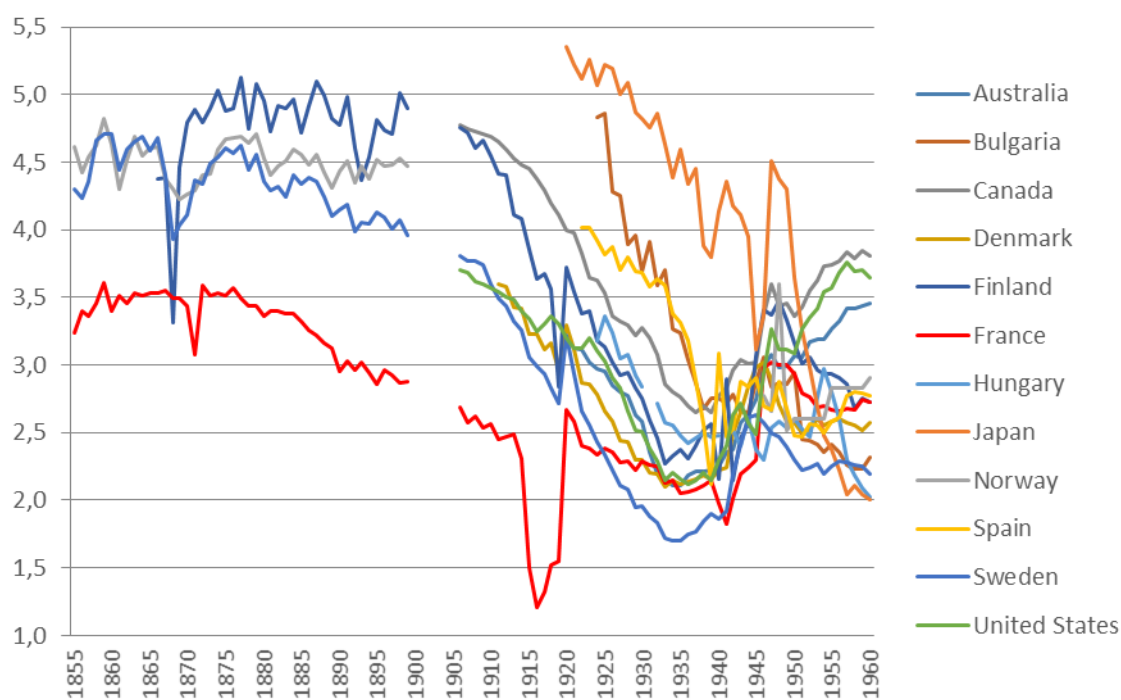


Figure 1. Total fertility rates in European countries and in Japan, 1855-1960, births per woman

Source: [Chesnais 1986: 517-521].

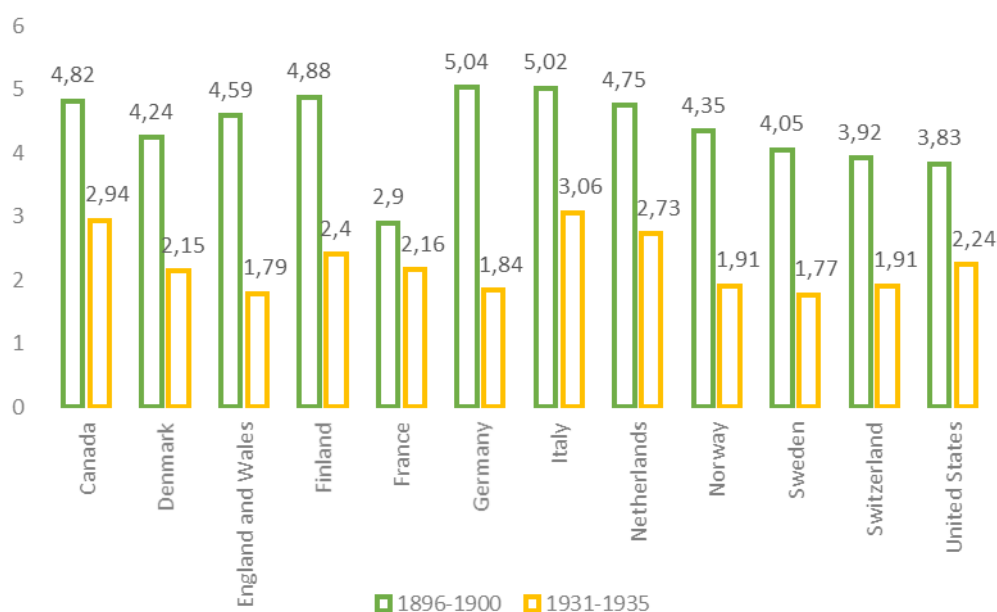


Figure 2. Total fertility rates in some countries of European culture in 1896-1900 (USA and Canada - 1901-1905) and in 1931-1935, births per woman

Source: [Chesnais 1986: 522-523].

All this is true of Russia too. A Russian woman born in 1891-1895, whose reproductive activity was mainly in the first decades of the twentieth century, despite all the upheavals of these decades gave birth to an average of 5.5 children. For the generations of women born in 1921-1925,

whose period of reproductive activity occurred in the 1940s - 1960s, this indicator decreased by half - to 2.25 [Demographic modernization ... 2006: 157]. The spread of birth control is obvious.

Conclusion: in the first half of the twentieth century there occurred huge changes of fundamental importance in the reproductive behavior of women in Russia as well as in all European countries and overseas countries of European culture, including eventually Japan (whose total fertility rate in 1931-1935 was 4.65, in 1961-1965 - 2.0 [Chesnais 1986: 522-523]). What had previously been considered unacceptable was now generally accepted: the vast majority of married couples had moved to the conscious regulation of the number of births.

These changes cannot be called anything but revolutionary. The question is whether this revolution was only *contraceptive*. Until the 1960s, the widespread practice of birth control relied on the use of long-known, if usually condemned methods of preventing pregnancy (mainly coitus interruptus, to a lesser extent condoms, female barrier methods and douching) or feticide. The latter was unavoidable, as the traditional methods of preventing conception were not sufficiently effective and reliable, a fact which, given the widening recognition of the rights of women and families to decide the number and timing of the birth of children, could not but lead to a rather widespread increase in the practice of artificial interruption of unwanted pregnancies. In France, for example, for a long time "the only method available to married couples was coitus interruptus, and failure in its application could lead to abortion (and at first, perhaps, to disguised infanticide)" [Leridon et al 1987: 285].

Abortion was everywhere banned and condemned, but in the 19th century many Western countries saw an increase in their number. Of course, there are no reliable statistics on abortions during the time they were legally prohibited, but only some estimates. According to such estimates, for example, in the second half of the 19th century one in five pregnancies in the United States ended in abortion [Pots, Selman 1979: 201]. In Germany in 1890 there were 8-10 abortions per 100 deliveries, and in 1924 - already 25 [Gens 1926: 3-4]. Indirect evidence of an increase in the prevalence of illegal abortion in Europe could be the increase in maternal morbidity and mortality from this cause [Paevsky 1970: 313-315]. In 1929 Marie Stopes, one of the most active champions of the right to birth control in the UK, who opened the first family planning clinic in the country, wrote: "...the fall in the birth rate at present is clearly not to be attributed solely to the use of "birth control" but to a much larger extent is due to criminal abortion" [Davey 1988: 333]. In the late 19th - early 20th century, the spread of abortion began to disturb Russian public opinion too [Demographic modernization ... 2006: 197-199].

It is precisely the presence of abortion among methods of birth control which calls into question the interpretation of changes in procreative behavior in the first half of the twentieth century (and they were in fact revolutionary) as a contraceptive revolution. At the same time, it seems that the role of abortion in Western countries has always remained secondary. In the West, the main methods of birth control have generally involved the prevention of pregnancy; its interruption has not been widespread. This can be judged from the statistics on legal abortions after they were allowed in many Western countries in the 1960s and 1970s. Abortion came out of the underground, became widely available, and statistics did indeed show a certain extension of the practice of legal termination of pregnancy. But no "explosion" in the number of abortions occurred even at the peak of its practice: it was still incomparably lower than in Russia at the time.

For example, in the United States, after the 1973 Supreme Court decision legalizing abortion, the number of abortions increased to 43-44 per 100 births in 1979-1984, after which the indicator declined. In France, despite the decriminalization of abortion in 1975, the number of abortions per 100 births later almost never exceeded 30. In Russia, with the same level of fertility as in the above countries, during the 1960s-1970s the number of abortions per 100 births exceeded 200, and sometimes 250².

Thus, with regard to Western countries we can, if somewhat loosely, still talk about the first contraceptive revolution, although it is more a preparatory stage in which the practice of preventing pregnancy through traditional, "pre-industrial" methods became widespread [Wrigley 1969: 188-190], and eventually led to the contraceptive revolution described by Westoff and Ryder.

THE CONTRACEPTIVE REVOLUTION IN THE WEST

Precisely because the practice of regulating fertility by preventing pregnancy was becoming more and more widespread in the West, efforts were also made to improve contraceptive methods in order to make them more convenient, reliable and safe. The original arsenal of such methods was inherited from the past, when there was neither the technical capacity to create effective contraceptives, nor a great demand for them. Now everything had changed: a public demand for more advanced contraceptive technologies had taken shape, and scientific and technological progress had made it possible to satisfy this demand, just as had happened in all other areas of human activity. This made possible a genuine contraceptive revolution.

A breakthrough came with the appearance of hormonal and intrauterine contraceptives. The search for them had taken several decades. The first sample of an intrauterine device was created in 1909, while the idea of hormonal contraception appeared in the early 1930s. But it was only in the early 1960s that both achieved the necessary standards of reliability. In 1960, contraceptive pills based on synthetic hormones were allowed for universal use, and at about the same time began the widespread use of intrauterine contraceptives (IUDs) made of inert plastic materials. The third reliable method of preventing conception was surgical sterilization, which also became widespread as of 1970, thanks to the introduction of mini-laparotomy and laparoscopy into surgical practice.

The new technologies began to spread very quickly. In the US market, hormonal or oral contraception (OC) appeared in 1960, and by 1970 it was being used by 6 million women or over 1/3 of married women practicing contraceptive methods [Westoff 1972: 11]. The proportion of married American women using one of these three methods (OC, intrauterine devices (IUD) or surgical sterilization) among women below the age of 45 at risk of unwanted conception was 52% in 1970, whereas in 1965 this proportion was equal to 1/3, and in 1960 less than 10% [Westoff 1975: 573-574]. The level of use of any method of contraception had also been high before – this indicator grew by only a few percentage points. What changed dramatically was the structure of contraceptive methods, towards ones that were more effective, user-friendly and, importantly,

² <http://demoscope.ru/weekly/app/app40ab.php>

under a woman's control (unlike the prevailing "male methods" of coitus interruptus and condoms).

Similar trends were observed in the 1960s and 1970s in European countries. The available statistics for Belgium show an almost sixfold increase in the proportion of users of pills to all users of contraception over 10 years: from 7% in 1966 to 41% in 1976 [Leridon 1981: 75]. In France, in 1968, about 6 million packages of contraceptive pills were sold, in 1970 - over 7 million, and in 1985 the number of packages sold exceeded 47 million. The number of IUDs sold grew from about 60,000 in 1970 to 950,000 in 1985. In 1968, only 4% of women aged 15-49 years used hormonal pills, in 1985 - over 27%. Another 13-16% of women used intrauterine devices, whereas in 1971 they were less than 1% [Leridon et al. 1987: 69, 72].

By the early 1980s, pills had become the most popular method of preventing pregnancy in many Western countries, although other methods that came with contraceptive revolution were also used. For example, in the United Kingdom sterilization was gaining popularity. If, before 1970, the share of sterilization in the structure of methods was invisible, in 1976 it was 19%, and in 1986 37% of families using contraceptive methods used sterilization [Cleland 2009: 167]. The same happened in the US and Canada. In the first half of the 1980s, in western countries, the number of married women who regularly resorted to modern contraception, as a rule, exceeded 50-60% (Table 2).

Table 2. Number of women using various modern contraceptive methods, per 100 married women under the age of 45

	Belgium (Flemish part), 1983	Great Britain, 1983	Canada, 1984	Netherlands, 1982	Norway, 1977	USA, 1982	Finland, 1977	France, 1982
Pills	32	25	12.7	26	13	13.5	11	27
IUD	8	5	6.7	10	28	4.8	29	18
Sterilization								
female	18	28*	28.3	25-30	6	27.5	5	8
male			13.2			11.4		0
Total	58	58	61.0	61-66	47	52.7	45	53

Note: *Approximately equally male and female

Source: [Leridon et al. 1987: 286].

By the end of the 1980s, modern contraceptive methods in the countries of Northern and Western Europe and North America had entirely replaced the unreliable traditional ones [Frejka, Ross 2001: 233-237]: the contraceptive revolution in these countries was completed. Its main result was a significant increase in the effectiveness of fertility regulation, with the number of unwanted births declining sharply.

The contraceptive revolution in the West had important social and demographic consequences. It made possible a multifaceted change in the behavior of people, which later became known as the "Second demographic transition." The freedom to get married and have children when you wanted had grown: despite a lowering of the age of sexual debut, these could

now be postponed to a later date. Women ceased to depend on men in the sense that they themselves were now able to avoid pregnancy if they chose to, since the link between sex and conception was gone. The number of unplanned pregnancies declined sharply and the “shotgun marriages” of old began to disappear [Lesthaeghe 2010: 216]. Abortion did not disappear completely, but it remained as an extreme measure, used only in cases of failure or misuse of contraception.

THE USSR: MISSED OPPORTUNITIES

Russia began its demographic transition later than many European countries, but at the turn of the 19th and 20th centuries the need for birth control began to be felt here too, and the corresponding practice began to spread. As expected, at first it relied on ineffective and unsafe methods. In particular, doctors recorded a significant increase in the number of patients who had had an illegal abortion [Demographic modernization ... 2006: 197-199]. The idea that the only reasonable alternative to the artificial termination of pregnancy is its prevention was clear to many specialists in Russia even then. An example is the presentation by Dr. L. Okinchits at the 4th Congress of the Society of Russian Obstetricians and Gynecologists in December 1911. According to the speaker, punitive measures against abortion do not work, and calls for abstinence are pointless, so the main way to reduce the practice of abortion should become "precautionary measures against conception." L. Okinchits also formulated the basic requirements for contraception: it must reliably prevent conception, be completely safe, easily and conveniently applicable, and also affordable for the poorest layers of the population [Okinchits 1912: 53-66].

However, neither before nor after the 1917 revolution did the practice of preventing conception receive full recognition in Russia, but was considered rather as a purely medical problem. In official documents, the use of contraceptive methods was allowed mainly for medical reasons, for example, if pregnancy threatened the life and health of a woman. For decades, the country's leadership adhered to the dogma that building socialism and raising the standard of living in the Soviet state would facilitate the return of large families, and consequently there was no need to develop family planning. A decree of the People's Commissariat of Health and the People's Commissariat of Justice of the RSFSR, legalizing abortion in 1920, stated that "the strengthening of the socialist system" and "the broad implementation of the principles of protecting motherhood and infancy" will lead to the gradual disappearance of abortion as a consequence of "the moral remnants of the past and heavy economic conditions of the present."³ As the chief specialist for family planning of the People's Commissariat of Health, A.B. Gens, wrote in the 1920s, the USSR did not recognize the neo-Malthusian movement, believing that radical social reorganization would improve the situation of workers, which would, among other things, solve the problem of unwanted pregnancies [Gens 1929: 79].

It cannot be said that nothing was done towards developing a family planning service. Contraceptives were legalized by a circular of the Narkomzdrav (The People's Commissariat of Health) in 1923. The Central Scientific Commission for the Study of Contraceptives and the

³ Decree of the People's Commissariat of Health and the People's Commissariat of Justice of the RSFSR of November 16, 1920 "On the artificial termination of pregnancy."

Scientific and Production Laboratory were established within the Narkomzdrav's Department of Protection of Motherhood and Infancy. However, the scientific basis for expanding the practice of contraception was of a low level⁴, and soon these efforts were curtailed too.

In 1936, when adopting the law on the prohibition of abortion, the authorities announced they would be developing the production of contraceptives. A decree of the Council of People's Commissars of July 31, 1936 set the task of expanding the production of rubber products (condoms, pessaries) and other preventive measures (aluminum uterine caps, the contraceptive paste "Prekonsol"). At the same time, it was decided to set up a condom production facility at the Bakovka plant, then under construction. But these decisions were not fully implemented [David, Popov 1999: 237-238], which should not be surprising. After all, references to the "conditions of socialism", "increasing the material well-being of the working people", and "the maximum development of the network of maternity hospitals, nurseries, kindergartens" contained in the law on the prohibition of abortion⁵ made sense only if they were opposed to any limitation on childbearing, not only abortion. In the conditions of the Stalinist USSR, this practically excluded any activity aimed at the development of contraception. Also of importance was the motive of authoritarian power to limit the freedom of the individual in making decisions, including the composition of the family [Avdeev 1989: 59]. "Doctors did not teach women how to use contraceptives, of which, moreover, there were not enough, and their quality too left much to be desired" [Sadvokasova 1969: 125]. In 1939, contraceptive sterilization was banned in the USSR⁶.

The repeal in 1955 of the abortion ban was only a recognition of the widespread practice of interrupting an unwanted pregnancy. The authors of the new law followed the same logic as the authors of the laws of 1920 and 1936: "Prevention of abortion," the law said, "can be achieved by further expanding state measures to encourage motherhood and educational and explanatory measures."⁷ Not only politicians, but also many specialists remained "in the networks of the concept of impediments" [Avdeev 1989: 61]. Thus, in keeping with this concept, the famous Soviet social-hygienist and medical demographer Ye.A. Sadvokasova, having constructed a complex system of reasons for women's refusal to give birth, concluded that at least 1/3 of abortions are the result of "absolutely eliminable reasons" such as "lack of living space", "material insecurity," "there is no one to leave the child with" – all of which would supposedly be eliminated as the communist society was built [Sadvokasova 1969: 152-163].

It is not surprising that in the context of underdevelopment of the family planning service and the shortage of contraceptives, the level of abortion in Russia was extremely high [Demographic modernization ... 2006: 215-224]. Little is known concerning the methods of preventing unwanted pregnancies in that period – the corresponding studies were almost never

⁴ For example, the issue of the possibility of using "spermotoxins" or X-rays as contraceptives was discussed [Gens 1929: 76-90].

⁵ A resolution of the Central Executive Committee and the Counsel of People's Commissars of the USSR of June 27, 1936 "On the prohibition of abortions, increasing material assistance to women in childbirth, establishing state assistance to large families, expanding the network of maternity hospitals, nurseries and kindergartens, strengthening criminal penalties for non-payment of alimony and some changes in the law on divorces."

⁶ Clarification of the People's Commissar for Health of the USSR No. 303 of August 7, 1939 "On the prohibition of surgery to dress or remove healthy fallopian tubes."

⁷ Decree of the Presidium of the Supreme Soviet of the USSR of November 23, 1955 "On the abolition of the prohibition of abortion".

carried out. According to a survey of married women of reproductive age conducted in 1966 at several Moscow enterprises (N=1351), despite the fact that most women tried to practice birth control (from 74.5% under the age of 25 to 92.6% at the age of 30-34 years), only 25% of respondents had no experience of abortion. In many cases, unwanted pregnancies occurred against the background of ineffective use of contraceptive methods, the most common among which were condoms and coitus interruptus [Belova, Darskii 1972: 126-137]. Another survey of women in Moscow⁸ showed that the main contraceptive methods in the early 1970s were vaginal douches, coitus interruptus and the often poorly understood calendar method [Polchanova 1973].

Technological innovations in the field of birth control methods, which marked the contraceptive revolution in the West in the 1960s and 1970s, did not reach Russia soon. In particular, the aforementioned survey of workers from Moscow enterprises in 1966 gave grounds to assert that "... neither oral pills nor intrauterine mechanical means were basically known to Muscovites at all" [Belova, Darskii 1972: 135]. The new contraceptives spreading in the West were viewed in the USSR with suspicion. The attitude of the USSR Ministry of Health to them was contradictory, and its policy was sluggish and inconsistent. In 1970 a Symposium on Hormonal Contraception was held in Moscow; its concluding documents noted the high effectiveness of hormonal contraceptives. While continuing to purchase foreign oral contraceptives from Yugoslavia, Hungary and some other countries, the Ministry of Health instructed leading research institutes and departments of obstetrics and gynecology to develop domestic hormonal means. But, as was often the case in the Soviet Union, good intentions and even decisions basically remained on paper. There is still no production of hormonal contraceptives in Russia. In 1974, the Ministry of Health circulated a letter in which the side effects of using oral contraceptives were so exaggerated that the continued use of them was in question⁹. Citing foreign sources, the letter presented data on deaths – not to mention various health disorders – resulting from the intake of synthetic hormonal drugs in different countries.

Within the conditions of a competitive market economy, Western countries were following the path of continuous development and improvement of contraceptives, and reducing the risk of their use. Yet the USSR Ministry of Health continued to focus on the analysis of complications associated with taking hormonal contraceptives. In 1981, the Ministry of Health issued a new information letter stating: "It's hard to agree with the opinion ... that the positive medical and social consequences of using oral contraceptives exceed their risk."¹⁰ The position of health leaders inevitably caused an almost hostile attitude towards hormonal contraception among the general population [Kohn 2010: 410]. The government intended to combat high abortion rates in two main ways: by intimidating women with information about the harm and dangers of abortion for health, and by promoting maternity and paternity [Polchanova 1973].

⁸ Sample characteristics and survey procedure are not specified

⁹ Information letter from the Ministry of Health of the USSR, the Office for the Introduction of New Medicines and Medical Equipment, the All-Union Center for the Study of the Side Effect of Drugs of 1974 "On Side Effects and Complications in the Use of Oral Contraceptives."

¹⁰ Information letter from the Ministry of Health of the USSR, the Office for the Introduction of New Medicines and Medical Equipment, the All-Union Center for the Study of the Adverse Effects of Medicines of 1981 "On Adverse Reactions and Complications Caused by Oral Contraceptives."

Nevertheless, albeit slowly, the tone of official documents changed, gradually coming to recognize the need to develop and promote contraceptives. Methodical recommendations published by the Ministry of Health in 1983, entitled "Methods of Preventing Pregnancy", began with the words: "The introduction of modern contraceptives is the main method of preventing abortion and of reducing gynecological morbidity and obstetric pathology" [Methods of Prevention ... 1983]. Priority was given to the IUD as the main method of contraception for married women, and its use in the 1980s grew rapidly [Demographic modernization ... 2006: 227-228]. In the documents appeared references to "subjective, psychological" factors influencing the decision to terminate a pregnancy, and not just material and housing difficulties. However, the chance had been missed: the gap between the USSR and the developed countries had become enormous.

The official policy in the country maintained a strong pronatalist orientation, and the authorities always feared that the promotion of family planning would lead to a further decrease in fertility.

This cautious attitude towards hormonal contraception was also shared by doctors, whose job it was, to the contrary, to promote this modern method in every possible way. "One factor holding back the spread of [hormonal contraception] ... is the negative attitude of obstetrician-gynecologists to the use of hormonal pills," the Russian Ministry of Health stated in 1992¹¹.

In general, despite some positive changes in the years of perestroika¹², the Soviet period was a time of stagnation in everything which concerned the development of modern methods of family planning for the overwhelming majority of women and couples. By the end of the Soviet Union, birth control in the country was characterized by widespread abortions, underdeveloped family planning services, a shortage of contraceptive means and a low level of sexual culture. One cannot fail to note also the absence of any detailed abortion statistics, the keeping of which poses no problems when abortion is legal.

THE START OF THE CONTRACEPTIVE REVOLUTION IN POST-SOVIET RUSSIA

In the post-Soviet period, the situation began to change. The emergence of the market, including the market of modern means of contraception, and information openness in few years significantly changed the situation.

An important role in the ousting of abortion by contraception was played by the federal targeted program "Family Planning", adopted in the early 1990s and in 1994 given the status of "Presidential". The President's Decree stated that the main reason for the development of the program was "the high prevalence of abortions with a decrease in fertility ... Abortion remains the main method of birth control, and about 4 million abortions are performed annually. In 1991,

¹¹ Letter of the Ministry of Health of the Russian Federation to the heads of the healthcare and pharmacy administrations of the administrative territories of the Russian Federation No. 06-15 / 7-15 of July 30, 1992 "On the state of abortion in Russia and organization of the family planning service".

¹² For example, in 1989 was created, by the decision of the CPSU Central Committee (!), The Family and Health Association, whose task was to provide information on methods of family planning and on contraceptives.

according to the State Statistics Committee of Russia, the rate of abortion per 1,000 women of childbearing age was 100.3. Abortions account for one third of the structure of maternal mortality." The goal was "to reduce the number of abortions by 25 to 30 percent of the baseline."¹³

For the first time in Russia, a state family planning service was starting to take shape, provided with modern equipment and contraceptives "in the right amount and assortment." Within the framework of the program, work was carried out to raise public awareness regarding the prevention of unwanted pregnancies. The introduction of a system of sexual education for adolescents was envisaged. About 40% of the funding for the "Family Planning" program was allocated annually for the purchase of hormonal contraceptives, which enabled many health care institutions to distribute them to socially unprotected groups of the population, such as youth and low-income women [Sharapova, Baklayenko 2003: 4]. Training courses were organized for specialists in the field of abortion prevention and safe maternity. Similar programs were adopted in the regions.

The program was largely initiated by the Russian association "Family Planning", which had existed since 1991 and was later, under the influence of the political conjuncture, renamed the Russian Association "Population and Development". One of the statutory goals of the Association was "to promote the introduction of modern methods of contraception for the prevention of unplanned pregnancies and abortions, the reduction of the level of maternal mortality, and the birth of desired and healthy children."

All of this activity was in full accord with the position of international organizations, formulated, in particular, in a report at the 1994 Cairo International Conference on Population and Development: "Governments should take appropriate steps to help women avoid abortion, which in no case should be promoted as a method of family planning, and in all cases provide for the humane treatment and counseling of women who have had recourse to abortion" [UN 1994: 7, para. 7.24].

The "Family Planning" program received funding (perhaps not very generous) from the state budget. Substantial financial and technical assistance was also provided by international organizations, government and private foreign foundations, in particular the United States Agency for International Development (USAID) and the United Nations Population Fund (UNFPA).

The program proved to be quite successful. The most eloquent evidence of this is the rapid decline in the number of abortions, which for several decades had been unachievable. The number of abortions per 100 births, or, in other words, the proportion of pregnancies ending in abortion, began to decline precisely starting in 1994, when the presidential family planning program was adopted, and fell despite the decline in fertility: abortion had clearly lost its role as a method of regulating childbirth, giving way to contraception. Since then, the number of births has been steadily approaching the number of conceptions, which indicates an increasingly effective family planning (Figure 3).

¹³ Decree of the President of the Russian Federation No. 1696 of August 18, 1994 "On the Presidential Program "Children of Russia".

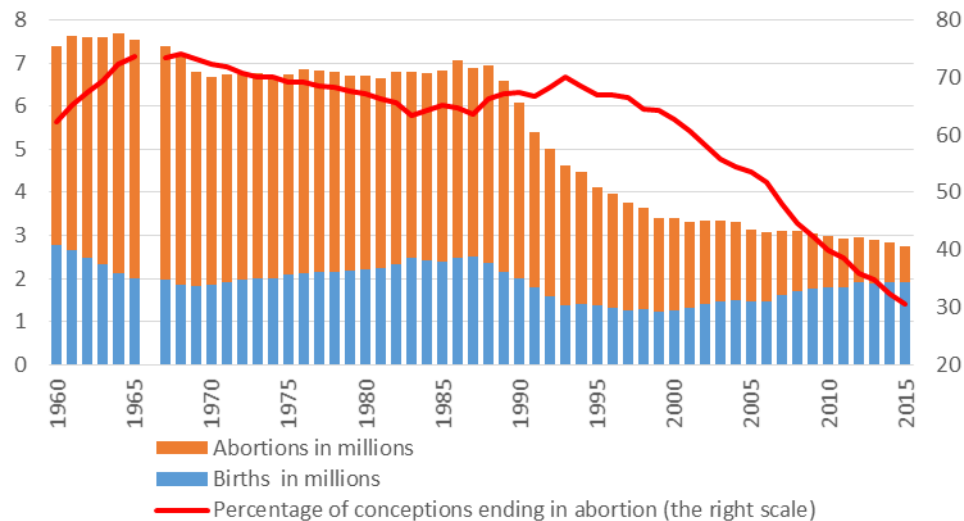


Figure 3. Number of births, number of abortions and percentage of conceptions ending in abortion, 1960-2015

Note: The number of conceptions is taken as the sum of births and abortions.

Source: Authors' calculations based on Rosstat data.

In 2015, the number of abortions per 100 births was more than 5 times lower than in 1993, after which the decline began. Now it is already possible to say with certainty that although Russian rates of abortion are still higher than the corresponding indicators of countries that have gone through a contraceptive revolution, the gap between them is declining year by year (Figure 4). Does this mean that this revolution is also taking place in Russia? And if so, how far has it gone?

To answer these questions, it is necessary to analyze the modern practice of contraceptive use in Russia.

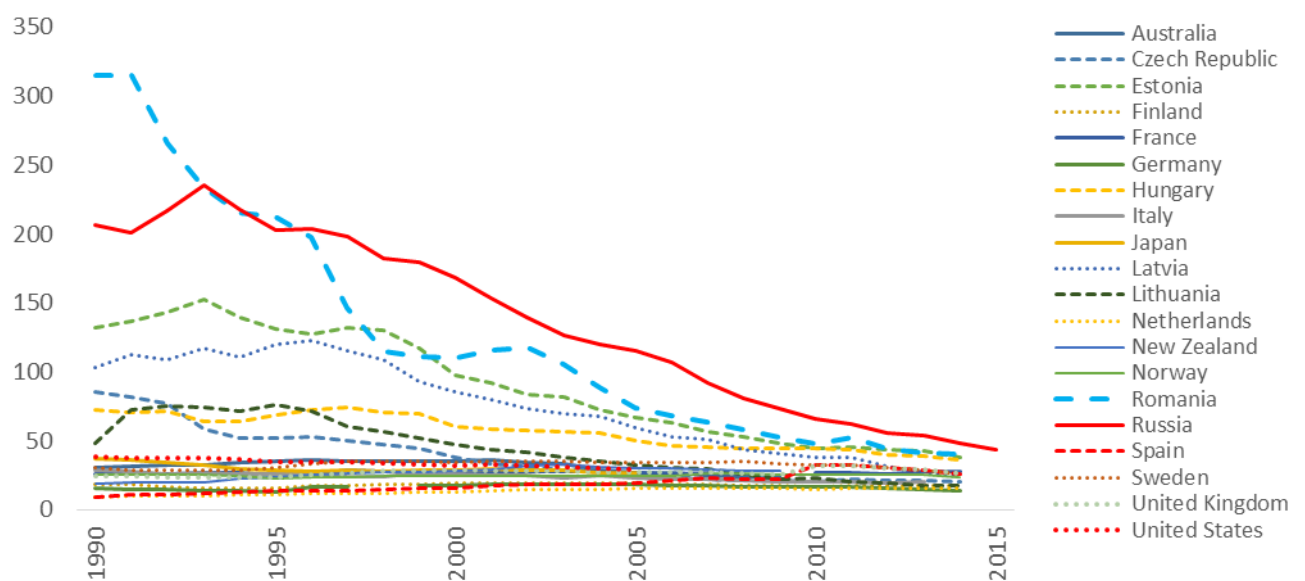


Figure 4. Number of abortions per 100 births in some countries

Source: [WHO Regional Office for Europe].

MODERN PRACTICES OF CONTRACEPTIVE USE IN RUSSIA

A low abortion rate alongside low fertility is an indisputable sign of the mass practice of birth control. However, we saw that in Western countries this practice was quite widespread even before the beginning of the "second" contraceptive revolution, which radically changed the structure of the methods used to prevent conception. What is happening to this structure in Russia? To what extent is the modern contraceptive practice of Russians based on the use of the latest-generation contraceptives, and to what extent do the methods used still remain traditional, i.e. insufficiently convenient, reliable and effective?

The main source of information about contraceptive behavior is usually sample surveys of the population. Unfortunately, in Russia until 2011 special nationwide surveys of the reproductive health of the population were not conducted. Some information about contraceptive use was contained in the program of two waves of the survey "Parents and children, men and women in the family and society" in 2004 and 2007 [Sakevich 2009; 2010]. A number of questions related to family planning are included in the program of "The Russia Longitudinal Monitoring Survey - Higher School of Economics (RLMS-HSE)"¹⁴. Valuable information about this little-known side of Russians' private lives was obtained as a result of several regional surveys, for example in Yekaterinburg, Perm and the Ivanovo region [Troitskaya, Andersson 2011], but how representative they are for the country as a whole is unclear.

In 2011 in Russia for the first time in her history a special "Russian Reproductive Health Survey (RRHS)"¹⁵ was conducted, containing, among other things, detailed information on attitudes to and knowledge and experience of contraceptive use in Russia. In this article, we use the results of this unique survey.

Both the RRHS and all other recent sample surveys that touch on family planning indicate that today the prevalence of contraception in Russia is high. The vast majority of couples resort to contraceptive methods for birth control, although not always successfully.

According to the RRHS, 72.3% of women aged 15-44 years who are married or in a partnership used contraceptive methods for 30 days before the survey (table 3). Russia here differs little from other countries with a post-transition type of fertility. Very close to the Russian rates of contraceptive use are those typical for countries such as Australia, Belgium, Germany, Austria, Spain, Romania and many others. However, in some countries the level of contraceptive use is even higher: in Norway 88.4%, in The Czech Republic 86.3%, and in Canada and China 85% of women in a partnership use contraceptive methods [UN 2016].

At the time of the survey, 27.7% of married women of reproductive age were not using contraception, and almost 85% of them named as the reason for this a current pregnancy, a postpartum period, a desire to become pregnant, an inability to conceive, or a lack of sexual

¹⁴ <https://www.hse.ru/rlms>

¹⁵ The survey was conducted by Rosstat jointly with the Ministry of Health of the Russian Federation with the assistance of the United Nations Population Fund, the United States Agency for International Development and the reproductive health department of the Centers for Disease Control and Prevention (USA); field work was carried out by the Information and Analytical Center "Statistics of Russia". A total of 10,010 responses were received from women aged 15-44.

activity: for all these categories of women contraception is not needed. A small proportion of women who did not use contraception said they did not think about contraception (2.6%), did not want to use it (3.3%), were afraid of side effects (2.2%), or yielded to a partner who objected to contraception (1.9%). Only a very few did not use contraceptive methods because they did not know where to buy them, could not afford them, or because of their religious beliefs.

Modern methods are preferred by 57.5% of women aged 15-44 who are married or in a partnership, or about 80% of contraceptive users, and this is the main difference of today's situation from that in Soviet times. According to the RRHS, the most popular contraceptive method among Russian families is the condom, which is used by almost 27% of couples or 37% of contraceptive users. A condom is considered a method of medium efficiency, since it is difficult to use ideally in practice¹⁶. The second most common method is intrauterine contraception (14.2% of couples), followed by hormonal contraception (13.2%). The question of why Russians give preference to the condom requires additional research. One possible explanation is a reluctance to deal once again with the public health system, a distrust of it, and a desire to avoid "medical supervision" in such a private sphere as one's sex life [Temkina 2011: 221-226; 2013: 10]; moreover, a condom can be bought freely in a supermarket. Perhaps some role is played by the fear of contracting HIV/AIDS and other sexually transmitted diseases [Temkina 2011: 213-215], whose incidence rate in Russia is high.

Table 3. Percentage of women aged 15-44 years using contraception, according to the Russia Reproductive Health Survey (RRHS), 2011

	Women married or in partnership	Sexually active women, never married
Any method of contraception	72.3	89.9
Modern method	57.5	79.2
<i>including:</i>		
condom	26.6	65.1
IUD	14.2	0.4
hormonal pills (oral contraception)	13.2	11.1
spermicides	1.3	1.7
sterilization of woman	1.5	-
other	0.7	1.0
Traditional method	14.8	10.7
<i>including:</i>		
calendar	4.2	1.1
coitus interruptus	10.1	9.5
other	0.1	-
Don't use contraception	27.7	10.1
Total	100	100
<i>Number of respondents</i>	<i>6091</i>	<i>447</i>

Note: Respondents not answering the question were left out.

Source: Calculations of authors based on the survey database.

¹⁶ With regular use of contraception for 12 months, the risk of failure using traditional methods is estimated at 14-26 unintended pregnancies per 100 person-years (naturally, the calculation applies only to women). With modern methods, the risk of failure is reduced to less than one unintended pregnancy per 100 person-years. The corresponding indicator for the male condom, which is usually considered a modern method, is estimated at 14 unintended pregnancies per 100 person-years [Frejka 2008: 74].

The preference given to one method or another depends on age (Table 4). Women under the age of 25 who are married or in a partnership use hormonal contraception 1.4 times more often those aged 30-34, whereas the IUD, on the other hand, is much more common in age groups over 30. But the condom occupies the first place in popularity in all age groups from 15 to 45 years.

Table 4. Structure of contraceptive methods depending on the age of contraception users. Women married or in partnership, 2011, %; according to the Russia Reproductive Health Survey (RRHS)

	Woman's age, years					
	15-44	under 25	25-29	30-34	35-39	40-44
Use contraception	100.0	100.0	100.0	100.0	100.0	100.0
Modern method	79.5	79.8	79.0	80.8	79.4	78.5
including:						
OC	18.2	22.2	20.6	21.5	15.5	11.8
IUD	19.6	6.8	13.7	22.2	25.1	26.5
condom	36.8	49.1	42.6	33.0	29.9	33.6
Traditional method	20.5	20.2	21.0	19.2	20.6	21.5

Source: Authors' calculations based on the database of the RRHS.

According to the RRHS 14.8% of women, married or in a partnership, use only traditional methods with low reliability. This, of course, is much less than in the Soviet period, but not so little. In Western Europe today traditional methods are used by no more than 5% of couples. The main reasons given by Russian women for rejecting modern methods of contraception were: fear of side effects (77% of users of traditional methods), the decision of husband / partner (77%) and low availability of modern means (65%). Very few respondents gave such reasons as religious beliefs or the high price of contraceptives.

Never married, but sexually active women use contraceptive methods more often than married women (Table 3), which is quite expected. Among these women, 65.1% indicated the use of a condom.

To assess the changes in contraceptive behavior of Russians over the past few decades, we compare the data of the RRHS with the results of a survey of women in three Russian cities (Moscow, Saratov and Ufa), conducted in 1983-1985. The 1983-1985 sample included married women under 35 living together with a partner and having one or two children. Accordingly, among the respondents from the RRHS we selected women of the same age, marital status and number of children born, living in Russian cities.

Tables 5 and 6 convincingly show that knowledge of and attitudes to contraceptive methods have undergone significant changes in the last 25 to 30 years.

In the mid-1980s, the population's views on various methods of birth control were formed in the context of very limited information, and even disinformation, about contraceptive methods, hence were extremely incomplete and often incorrect. In 1983-1985, 25-31% of young urban women did not know of the existence of hormonal contraception, whereas almost everyone knows about this method now. According to a survey in 2011, the practice of douching more or less disappeared, with a mere 6 out of almost 2000 women claiming to use it. Compared with the mid-1980s, the proportion of those who knew about spermicides had decreased, but information had appeared on sterilization and contraceptive injections, which were not used in the Soviet era.

The fact that women had heard about this or that method in the 1980s did not mean they had a good idea how they worked. When asked about the properties of contraceptive methods, many women in Moscow, Saratov and Ufa answered "I do not know," and the rest were distrustful of most methods (Table 5). Only 7-18% of the women surveyed considered oral contraception to be a reliable, and 4-6% – a harmless, method of birth control. The most effective (albeit unsafe) method was considered by residents of Moscow and Saratov to be coitus interruptus. Obviously, the situation was even worse in small towns and villages.

Table 5. Knowledge of contraceptive methods. Women younger than 35 years of age living together with a partner and having one or two children, % of respondents

Contraception method	1983-1985			2011
	Moscow	Saratov	Ufa	Urban population of Russia
IUD	95.6	94.8	96.2	98.0
Oral contraception	75.0	69.4	69.4	98.8
Condom	97.5	98.1	96.8	99.8
Chemical means (spermicides)	76.0	74.6	74.3	54.0
Female sterilization	-	-	-	77.0
Male sterilization	-	-	-	59.1
Injections	-	-	-	26.2
Coitus interruptus	93.6	91.6	86.7	92.5
Calendar method	95.1	91.7	91.6	80.4
Douching	86.8	89.5	89.5	...

Note: The number of respondents in 1983-1985 was 1000, in 2011 - 1973. In the questionnaire of the 2011 RRHS the question was formulated as follows: "Have you ever heard of ...?"

Sources: 1983-1985 - [Babin 1986]; 2011 - Authors' calculations based on the RRHS database.

Table 6. Opinions on contraceptive methods. Women under 35 years of age living together with a partner and having one or two children, % of respondents

	1983-1985			2011
	Moscow	Saratov	Ufa	Urban population of Russia
Consider method effective (reliable)*				
IUD	29.9	26.6	34.3	88.6
Oral contraception	18.1	7.0	8.9	91.0
Condom	36.8	34.7	29.5	93.5
Chemical means (spermicides)	3.4	4.1	6.7	n.a.
Female sterilization	-	-	-	68.5
Injections	-	-	-	17.8
Coitus interruptus	41.7	39.7	29.3	65.9
Calendar method	23.0	30.7	31.2	44.7
Douching	15.7	14.3	15.6	n.a.
Consider method safe (harmless)**				
IUD	20.6	25.5	28.5	16.6
Oral contraception	6.4	5.1	3.7	18.5
Condom	48.5	45.7	34.6	88.9
Chemical means (spermicides)	11.8	8.5	14.8	n.a.
Female sterilization	-	-	-	4.2
Injections	-	-	-	1.8
Coitus interruptus	10.3	7.2	5.6	n.a.
Calendar method	75.0	77.1	70.1	n.a.
Douching	36.3	37.7	43.2	n.a.

*Notes: *For 2011, the answers are combined: "very effective", "effective" and "somewhat effective". **For 2011, the answer taken is: "a low level of threat to health".*

Sources: 1983-1985 - [Babin 1986]; 2011 - Authors' calculations based on the RRHS database.

Today's city dwellers are much more competent in this matter, although even now only 18.5% of young urban women see no health threat in hormonal contraceptives, and 70% believe their use leads to weight gain. The long-term discrediting of hormonal contraception has borne fruit. Still today it is possible to hear women say: "They [hormone pills] are bad for the liver, basically like any medications you take", or "When it comes to pills, it seems to me they make you fat" (Temkina 2011: 217).

In the time between the two surveys attitudes towards condoms improved significantly (the quality of today's condoms can indeed hardly be compared with that of Soviet ones), however, opinions on the safety of IUDs worsened. In 2011, a majority of respondents (53%) called women's sterilization (rather than coitus interruptus, as in the mid-1980s) a "very effective" contraceptive method, after which came the IUD (26%) and oral contraceptives (20%), but hormonal injections are probably still little known to Russian women - only 3% of women considered them very effective.

The level of contraceptive use during the period under review has changed little, but there have been dramatic changes in the structure of the contraceptive methods used (Table 7). We see an obvious drop in the popularity of traditional methods (coitus interruptus, douching and the calendar method), the total proportion of which among all contraceptive users decreased from 60-65% in the 1980s to 21% in 2011.

Table 7. Contraceptive prevalence by method used by women younger than 35 years living together with a partner and having one or two children, %

	1983-1985			2011
	Moscow	Saratov	Ufa	Urban population of Russia
Use contraceptive methods including:	100	100	100	100
IUD	9.8	8.5	14.5	17.2
Oral contraception	2.0	2.5	1.4	20.1
Condom	24.4	20.5	15.1	38.8
Chemical means (spermicides)	2.5	3.0	4.2	1.7
Female sterilization	-	-	-	0.5
Coitus interruptus	24.9	20.7	19.2	15.9
Calendar method	27.0	27.6	26.0	4.3
Douching	8.1	17.0	18.2	0.4
Other	1.3	0.2	1.4	1.1

Note: 1983-1985 - "currently use"; 2011 - "used within 30 days before the survey".

Sources: 1983-1985 - [Babin 1986]; 2011 - Authors' calculations based on the database of the RRHS.

Particularly striking is the increase in the proportion of oral contraception. Used in 1983-1985 by only 2.5% of young married women in Saratov, 2% of Muscovites and 1.4% of women in Ufa, it is now the method of choice for one in five urban users of contraception younger than 35. This, of course, is not 2/3, as, for example, in Portugal, but the trend of the growing popularity of OCs is obvious. The percentage of women using another highly effective method - intrauterine contraception - also increased. Condom use also increased from 15-24% in the mid-1980s to 39% of all contraceptive users in 2011.

Despite undoubtedly important recent changes, the contraceptive practices of Russians are still significantly different from the corresponding practices in countries that went through the

contraceptive revolution of the 1960s and 1970s. In Russia, three of the most effective types of contraception – hormonal, intrauterine and sterilization – are less common. As can be seen in Figure 5, in many countries three quarters or more of couples resort to effective contraception, while in Russia this figure does not reach even half.

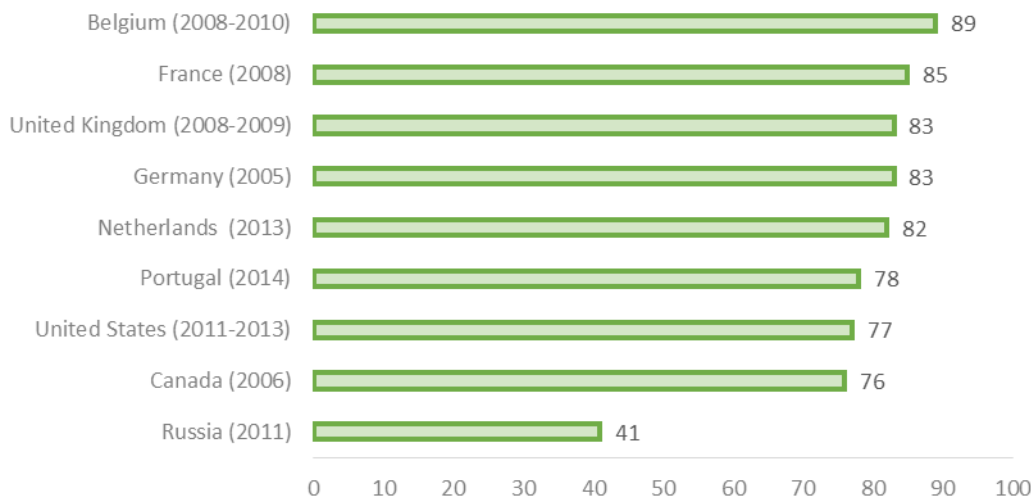


Figure 5. Percentage of women using three types of contraception (hormonal*, intrauterine and sterilization), among all women who are married / in a partnership and using contraception

*Note: *Including pills, injections, implants; Belgium - including also emergency contraception.*

Sources: [UN 2016]; Russia – authors' calculations based on the RRHS database.

The structure of contraceptive methods varies from country to country. For example, in France, Belgium, Portugal, Canada and the Czech Republic, over 40% of women who are married or in a partnership (or sexually active) use pills [UN 2016]. In the UK, about a third of all couples (29%) resort to contraceptive sterilization, with male sterilization more common than female sterilization; about the same number (31%) use hormonal methods. In the USA, the prevalence of sterilization is even higher: 33% of couples [UN 2016]. But all these methods are fairly reliable.

The same cannot be said about the modern structure of contraception in Russia. Although it has improved significantly compared with the Soviet period, it is difficult to call it optimal. It has a very high proportion of relatively unreliable methods, which is associated with a risk of unwanted conception and subsequent abortion. But the situation does not remain unchanged, and one can hope that the contraceptive revolution in Russia will reach its completion in the near future.

CONCLUSION

In all societies that have experienced the demographic transition (and in the world there are more and more of them), individual regulation of procreation is an integral part of a person's family and sexual life. All such societies recognize the right of a woman or a married couple to freely decide on the desired number of children and the timing of their birth. The twentieth century brought not only recognition of this right, but also convenient, safe and effective methods for its

implementation. Indeed, their rapid spread in the 1960s-1970s in many countries was the essence of the contraceptive revolution. New, more sophisticated methods of contraception pushed to the sidelines such an archaic way of regulating births as abortion, reducing its use to a minimum. At the same time, they opened up to women and men unprecedented opportunities to confidently plan their lives in such a way that the birth and upbringing of children could be conveniently combined with the solving of other vital tasks - education, the achievement of a certain social status, the acquisition of a necessary level of material well-being. This historically new situation is equally advantageous for parents, children, and the whole society.

Unfortunately, for several decades, Russia, along with the whole of the USSR, remained on the sidelines of this movement common to many countries with a similar level of development, and took practically no part in the contraceptive revolution. Significant changes began only in the 1990s. It was then that Russia quickly began to make up for lost time, and now it can definitely be stated that starting approximately from the mid-1990s the contraceptive revolution has been taking place in our country. Perhaps the most dramatic evidence of this is the rapidly declining number of abortions and the convergence of the number of births with the number of conceptions: people are becoming more and more confident and skillful in planning the birth of their children.

At the same time, one cannot fail to see that the contraceptive revolution in Russia has not yet been completed, and not all the obstacles in its way have been overcome. It's not just that the structure of contraception in Russia is still somewhat archaic, that it has a large proportion of not the most reliable methods which require daily vigilance and self-discipline. Very few people know about the newest methods of long-acting contraceptives (for example, hormonal implants and injections). There remains a suspicious attitude to hormonal contraception fostered in Soviet times. Sterilization among Russians is unpopular.

What is also important is that society, as represented by its state institutions, has not sufficiently realized the social significance of that shift called the "contraceptive revolution", its close connection with the general changes in the life of modern people.

In Russian public opinion, and in the minds of many Russian politicians, the myth lives on that family planning and affordable contraception lead to a decline in fertility. Meanwhile, this myth is easily refuted by the example of many European countries. Thus, in France, which has almost the highest level of fertility in Europe, there is partial compensation for the cost of contraceptives: 65% of the cost of hormonal pills (which is the most popular method in France), implants, IUDs and emergency contraception (if there is a prescription) is covered by basic insurance¹⁷. Underage French adolescents are able to receive contraceptives free of charge in special family planning centers or a prescription for free contraceptives from a school nurse [IPPF EN 2015]. Beginning from the age of 6, 2 hours per year of required sexual education classes are provided for French schoolchildren.

In the Netherlands, the prevention of unwanted pregnancies has been named one of the priorities of government policy. From 1971 to 2004, hormonal contraceptives, IUDs, diaphragms and sterilization were fully covered by basic medical insurance; after 2004, this applied only to

¹⁷ <http://www.radiancehumanis.com/conseils-sante/infos-sante/moyens-contraception-remboursements>

women under 21 years old, while other women could receive compensation for contraceptive costs through the supplementary insurance system. Family planning counseling is available in the Netherlands through general practitioners, special youth clinics and government centers for sexual health. Sexual education is compulsory for schoolchildren aged 6 to 15 years [IPPF EN 2015].

In Germany, where abortion rates are among the lowest in the world, for girls under the age of 18 the cost of contraceptives is fully covered from the mandatory health insurance funds, and for girls aged 18-19 years, a discount is provided. As in many other European countries, in Germany there is a system of compulsory sexual education in schools for children and adolescents aged 6 to 18 years [IPPF EN 2015]. State subsidies for purchasing contraceptives are also provided in Spain.

All of these are examples of how the state is meeting the demands of the time and the needs of its citizens, unlike the Russian state, which at best provides citizens the opportunity to decide for themselves personal issues that seem to it unworthy of even a mention when compared to the far more important cares of a great power.

The Russian Ministry of Health has proposed to make a distinction between the concepts of "the prevention of unwanted pregnancy" and "the prevention of abortion." In fact, they are of course the same thing, but by introducing an artificial distinction, officials propose to understand by the first the use of contraception, and by the second –measures to preserve an unwanted pregnancy, should one occur. All the activity of the Ministry of Health and other non-governmental organizations specializing in anti-abortion rhetoric focuses on this interpretation of "abortion prevention".

To the extent that the contraceptive revolution is nonetheless occurring in Russia, it is due to a sharp expansion of information and market opportunities, not to any state involvement. The Russian state does nothing to promote modern methods of family planning, despite the fact that there are practically no families which would not, in one form or another, practice such planning. According to a poll by the Levada Center, the main source of information about methods of preventing unwanted pregnancies among Russians are friends and acquaintances, not specialists¹⁸. In official documents, including documents of the Ministry of Health, the word "contraception" is not mentioned. Contraceptive means are not included in the compulsory medical insurance system. Modern means of contraception are not produced in Russia (with the rare exception of some IUDs and condoms) and not developed; mostly they are imported from the West (although produced, probably, like so much else, in Asia). Sexual education in Russia is lacking. Nevertheless, the contraceptive revolution in Russia is proceeding quite rapidly. The indifferent state does nothing to speed it up, but cannot stop it either.

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RUSSIANS IN THE REPUBLICS OF THE NORTH CAUCASUS: FRONTIERS OF GEO-DEMOGRAPHIC RETREAT (THE FIRST HALF OF THE 21st CENTURY) *

SERGEI SUSHCHIY

The article analyzes the geo-demographic dynamics of the Russian population of the republics of the North Caucasus in the post-Soviet period, registering the pace of reduction for each republic and studying the central role of migration in this depopulation process. Currently, the Russian population of the North Caucasus has returned to the level of the mid-1930s. The Republics of Chechnya and Ingushetia have lost almost all of their Russian population, while Dagestan has lost a significant part of its, too. Although demographic losses in other republics of the region have not been so great, a rapid reduction in the number of Russians has become a steady trend of the entire North Caucasus. In order to determine the corridor of the most likely demographic dynamics of Russians in the region up until 2050, a series of calculations was carried out, establishing that by 2030 the number of Russians in the North Caucasus will be reduced to 690-780 thousand people, and by mid-century – to 490-700 thousand. No less a threat will come from the deterioration of the age distribution of the local Russian population, which could lead to its demographic "collapse" in the period 2060-2070.

Key words: North Caucasus, Russian population, demographic dynamics and settlement, migration, assimilation processes.

NEW FEATURES OF MIGRATION POLICY

Russians, who account for more than 80% of the country's population, are the most numerous ethnic group of the Russian state. Therefore, their traditional presence in all macroregions of the country, as well as their active participation in the social life of these regions, is not surprising. Accordingly, a significant demographic indicator is the socio-demographic dynamics of the Russian population in the regions of the Russian Federation, including in national autonomies. The dynamics of the size (and proportion) of the local Russian population, the directions of its migration and the scale of its outflows are significant characteristics of the level of integration of the republics in the life cycles of the whole of Russia.

Therefore, the rapid shrinking of the Russian population of the North Caucasus in the post-Soviet period is quite reasonably perceived by experts and Russian society in general as an alarming sign. The number of studies devoted to various aspects of this topic is quite large [Ataev 2013; Belozarov 2001; Denisova, Ulanov 2003; Dzadziev 2007; 2008; Kabuzan 1996; North Caucasus ... 2010]. However, a detailed analysis of the modern quantitative dynamics of the Russian population of the North Caucasus, as well as its geodemographic prospects, has not attracted sufficient attention from specialists.

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The outflow of Russians from the region is a process that began long before the collapse of the USSR. Already in the 1960s, migration of the Russian population from Dagestan was recorded (Table 1). However, in general, net migration of Russians remained positive throughout the region. But already in the next decade the situation changed dramatically: In the 1970s, almost the whole of the North Caucasus became a zone of negative net migration of Russians. This situation continued in the 1980s. The main outflow in the last two Soviet decades came from the two eastern republics of the region - Dagestan and Checheno-Ingushetia.

Table 1. Migration dynamics of the Russian population in the republics of the North Caucasus in the 1960-2000s, thousand people*

Republics	Periods				
	1959-1970	1970-1979	1980-1989	1989-2002	2002-2010
Adygea	5-7	- 1-2	0	7-8	- 5-6
Dagestan	- 25-30	- 30	- 31-33	- 35	- 8-9
Ingushetia	-	-	-	-20	- 1-1.5
Kabardino-Balkaria	30-35	3-4	- 2-3	- 9-10	- 15-16
Karachaevo-Cherkessia	0	- 3-4	6-7	- 18	- 11-12
North Ossetia	2-3	- 9-10	- 18-20	- 18	- 4-5
Checheno-Ingushetia	0	- 45-50	- 55-57	-	-
Chechen Republic	-	-	-	-248-250	- 2-3
All republics	12-15	- 85-92	- 100-106	- 341-343	- 60-65

*Note: * - Calculated by the author on the basis of data on the overall dynamics of the population of the Russian population and on the natural growth of Russians in the republics of the North Caucasus in the relevant periods.*

The total migration loss of the region's Russian population in the 1970s-1980s came to about 200,000 people. Such a significant decline could not be compensated for by natural growth. The number of Russians in the North Caucasus, having reached its historic maximum (the first half of the 1970s), began to decline. During the period 1970-1979 it fell from 1,436,000 to 1,412,000 people.

The rate of decline of the Russian population, which had increased gradually up to the end of the Soviet period, in the 1990s moved into high gear. In the first post-Soviet decade, about 340,000 Russians left the region. In some cases, migration, in fact, took the form of an ethnic exodus. It is hard to describe otherwise the events that took place in the Chechen Republic and Ingushetia in 1991-1993, when about 200,000 people left the republic, the bulk of whom were Russian. Another contribution to the reduction of the Russian population came from natural decline, which, by the beginning of the 21st century was 5-6 ‰ per year. As a result, by 2002 the number of Russians in the region had fallen below the one-million bar, returning to the level of the turn of the 1940s.

Russia's political and socio-economic stabilization at the start of the 21st century made it possible to significantly reduce the outflow. However, Russian migration from the North Caucasus continues in the 2000s. In 2002-2010, the Russian population of the region according to official figures decreased by more than 100,000 people. Given that the size of the natural loss of Russians during this period was about 4% (about 40,000 people), the remaining 60,000 people of the demographic decline were accounted for by migration, the intensity of which in a number of republics has even increased.

In total, from 1989 to 2010 the Russian population of the North Caucasus shrank by more than 1.5 times. Even more noticeable were the percentage losses: the share of Russians in the region's population, which had reached 44% at the turn of the 1960s, fell to 27% by the end of the Soviet period, and in 2010 was only 12%.

The reasons for the demographic "collapse" of these republics' Russian communities are well known. Repeatedly voiced in the expert literature, they include: an economic factor (the de-industrialization of the North Caucasus and the loss by the Russian population of its main production niches); the complex ethnicization of the social life of the republics (a significant dominance of indigenous peoples in power structures and in all prestigious hierarchies); and the legal precariousness of the Russian population and presence of inter-ethnic tensions.

It is also obvious that the "Russian question" is not independent, but represents only one of a wide set of problems, a solution to which is possible only through the successful implementation of a project of systemic transformation of the North Caucasus - a serious modernization of its political, socio-economic, and cultural life, which in turn presupposes corresponding changes in the social realities of Russia as a whole. However, Russian authorities today prefer not to undertake such a monumental task, meaning there is every reason to believe that the geodemographic dynamics of the Russian population in the North Caucasus will continue to be determined by factors contributing to its further quantitative reduction and spatial compression.

This process, which represents a complex derivative of ethno-political, socio-economic and sociocultural factors that determine the scale of the outflow of Russians, will differ significantly in different republics. However, not only migration, but also indicators of the natural dynamics of the Russians can vary within a fairly wide range. The ratio of fertility to mortality will depend on the socio-economic success of both the entire Russian Federation and each specific region, as well as on the demographic policy of the Russian government, the scale of the fertility promotion programs, the level of development of the health care system, the diffusion of a healthy lifestyle, and the effectiveness of the state (and society) in combatting alcoholism, smoking and drug addiction.

This article attempts to assess the possible changes in the size of the Russian population in the North Caucasus republics using the component method with different options for changing the parameters of the natural reproduction of Russians in this region. As the main parameters for calculating a *pessimistic* (negative) scenario, we extrapolated to the mid-term (up to 2025-2030) and long-term (up to 2050) indicators for fertility, mortality, age-specific survival rates, and the life expectancy of the population of Russia in 2010, assuming a slight improvement in each decade of the analyzed period.

In this scenario, the average life expectancy for both men and women in Russia for the period 2010-2050 should grow by about four years (from 63 to 67 and from 74.8 to 79, respectively), while the survival rates for different age groups of the Russian population (i.e. primarily Russians, who account for about 80% of the population of the Russian Federation) would, by the middle of the century, improve by 10-20% compared to 2010 indicators.

To calculate the *optimistic* scenario, we proceeded from the assumption that the main demographic indicators of the population of the country and of Russians during the period under

review will improve significantly. It is assumed that by the middle of the century life expectancy in the Russian Federation, having increased by 13-14 years relative to 2010, will be comparable with the current population of the countries of Western Europe and North America.

As a result, if, under the negative scenario of natural dynamics, Russians in the North Caucasus for the period 2010-2050 will have lost about 23-26% of their numbers, then the unfolding of the optimistic scenario makes it possible to reduce these losses to 14-16%.

Thus, the combination of different scenarios of natural and migratory dynamics forms a certain corridor of likely demographic opportunities for Russians in the republics of the North Caucasus in the medium and longer term. The combination of a positive scenario of natural dynamics and the maximum possible reduction in outflows (for each republic its real value was selected) set the upper limit of this corridor. The negative scenario of natural decline, combined with the preservation of a significant outflow, determined the lower level of the possible demographic dynamics of Russians.

THE CHECHEN REPUBLIC

The 2002 census recorded only 40,600 Russians in Chechnya, of whom about 24,000 belonged to federal armed forces. Thus, the civilian population (the remains of the Russian "old-timers") was no more than 16,000 people. Most of them lived in a small number of settlements in two of the Nadterechny districts of the republic (Naursky and Shelkovsky), as well as in Grozny itself. Thus, the overwhelming majority of settlements in Chechnya, including very large ones, had practically no Russian population at the beginning of the 21st century.

By 2010, the Russian population of the republic was reduced to 24,000 people, primarily due to the reduction of the military presence, which, however, still represented a significant number of Russians (about 11,000). Thus, the actual Russian community (the civilian population) was about 13,000 people, having decreased by about 20% compared to 2002.

The age composition of local Russians, minus the peaks formed by the "feds" (contract soldiers and officers), reveals a fairly even contour (a "rectangle") with an increased proportion of middle-aged and older people (Figure 1). However, this form of the age pyramid does not suggest a rapid natural shrinking of the diaspora in the coming decades.

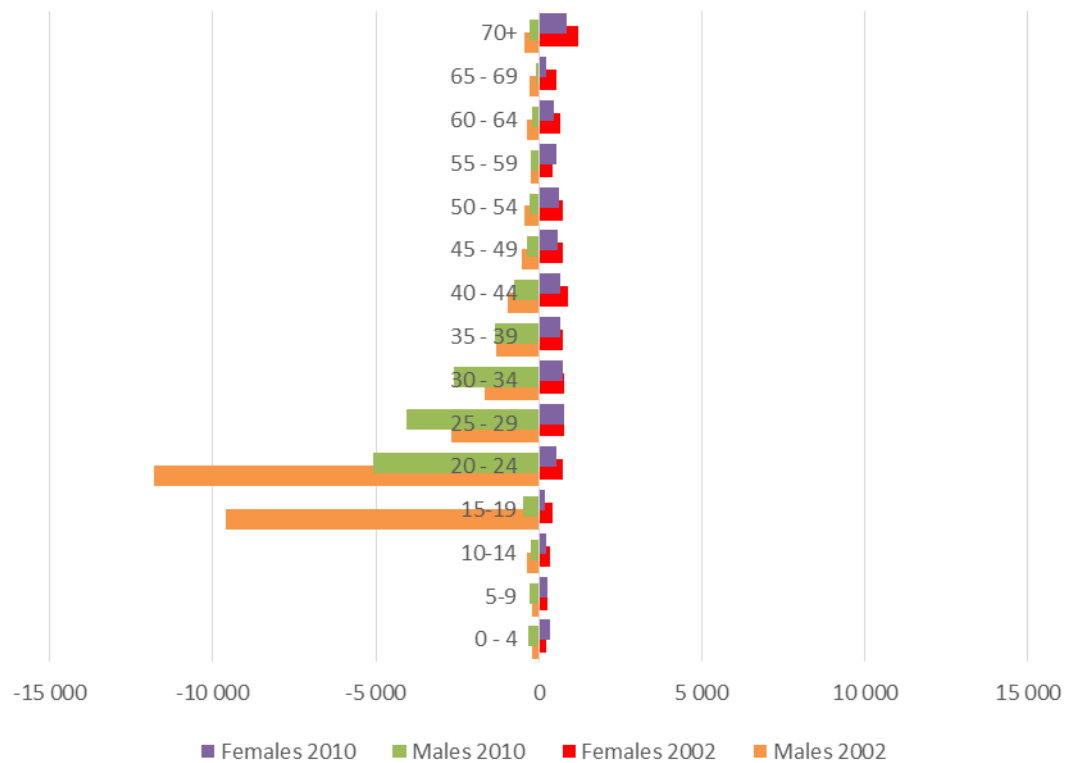


Figure 1. Age composition of the Russian population of the Chechen Republic, 2002-2010, people

In other words, if the problem of the outflow of Russians from the republic were solved, even such a small diaspora could last for a long time, including in the years 2030-2040 about 10-12,000 people (that is, a little less than at present). However, further migration of Russians from the republic is almost inevitable. In addition, in order for the quantitative conservation scenario to work, the community needs to maintain at least the level of fertility characteristic of the entire Russian population of Russia. Yet, according to the 2010 census, for one Russian woman at active reproductive age (20-39 years) in the Chechen Republic there were 0.76 children under the age of 20 years¹, while the Russian national rate was 1.28 children.

The main reason for the extremely low level is not in the actual small number of local Russian women, but in inter-ethnic (Russian-Chechen) marriages. The bulk of children in such mixed families are recorded by the census as having the father's nationality, as being part of the indigenous people. Such a principle of national self-determination of mixed offspring of interethnic families, in this case, fully corresponds to the social realities of the republic. In the conditions of a traditional society with the absolute dominance of the father-husband, almost all the children born in such marriages become representatives of the Chechen people in their psycho-social and sociocultural specifics.

¹ Not including a certain number of representatives of the federal forces - young men aged 18-19.

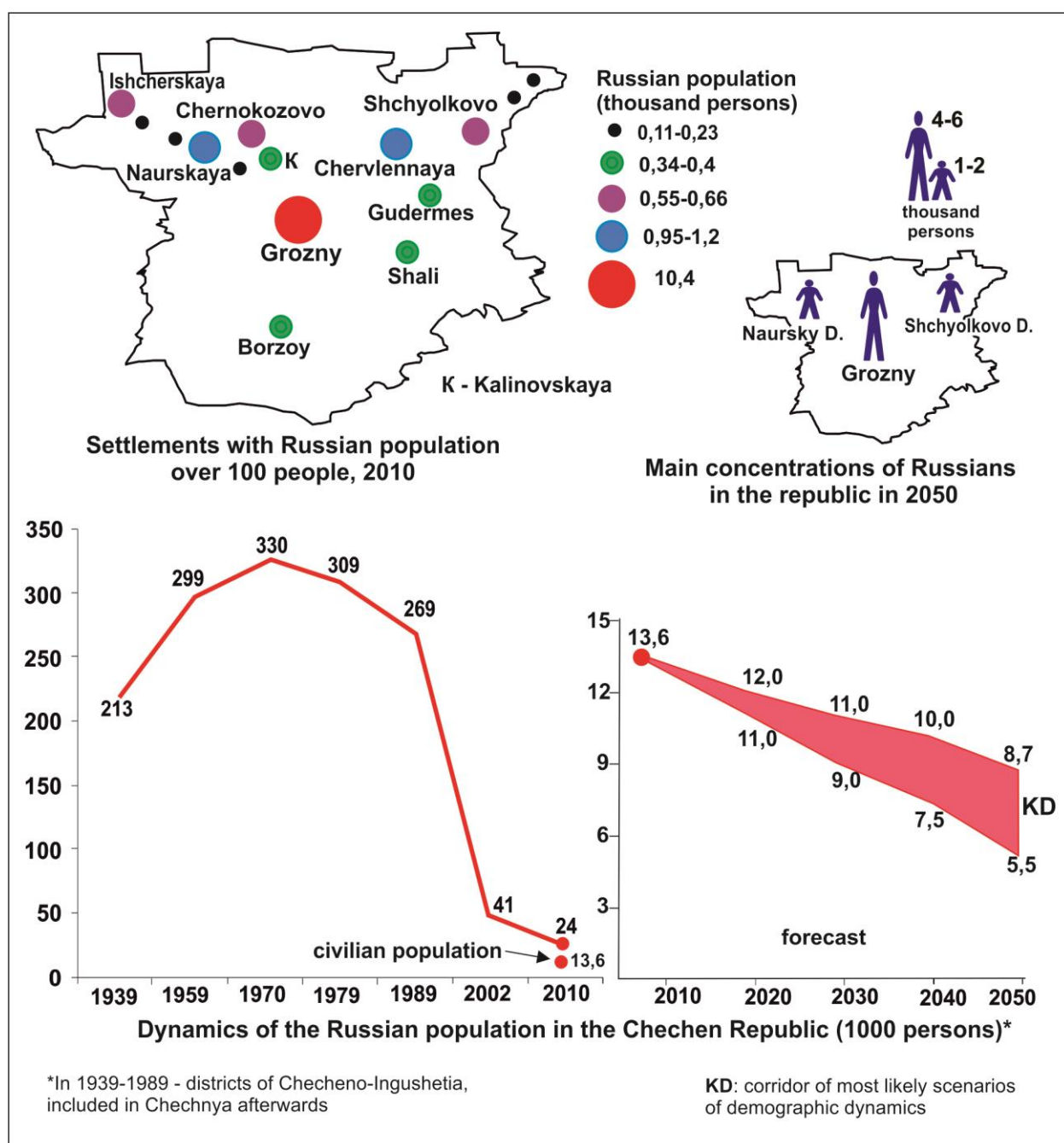


Figure 2. Russians in the Chechen Republic, 1939-2050

Based on the existing indicator of the average number of children, it can be assumed that up to 30% (possibly more) of Russian women of active childbearing age currently living in the republic have an "indigenous" husband. Consequently, a significant proportion of potential mothers are excluded from the demographic reproduction of the Russian community of Chechnya.

Meanwhile, the total number of Russian women of childbearing age in the republic began rapidly declining in the middle of the current decade: those now entering adulthood are the not numerous natives of the late twentieth century. Even without taking into account possible migration, the number of Russian women aged 20-39 in Chechnya by 2020 will be reduced to 1,700 (from 2,700 in 2010), and in 2030 will be only one thousand. As a result, all future

generations of Russians in the republic will inevitably be several times smaller than groups of middle age or older.

The most probable quantitative range of the demographic dynamics of the Russian community of Chechnya is shown in Figure 2. At the same time, the possible work of the assimilation factor is not fully taken into account in the chart, and therefore a more negative demographic scenario is not ruled out.

However, it is also necessary to take into account the fact that for "representative" purposes of the Chechen authorities it is advantageous to have at least some number of settlements with a distinct presence of Russians. To do this, it would be prudent to support and preserve the remaining centers, where, if necessary, it would be possible to bring high-ranking guests from the federal center. This practical consideration may somewhat prolong the life of the Russian community concentrated by the middle of the century in a number of settlements in northern Chechnya and, perhaps, in Grozny.

INGUSHETIA

The "Russian question" in Ingushetia repeats, in its geodemographic aspect, the situation of neighboring Chechnya, with the difference that in the areas of Soviet Chechen-Ingushetia, subsequently included in Ingushetia, the Russian population was initially limited quantitatively. At the turn of the 1990s, it numbered about 25,000 people. About 20,000 of them left the republic in the first post-Soviet decade.

The 2002 census recorded 5,500 Russians in Ingushetia. However, an analysis of their age composition makes it possible to classify about a thousand people as belonging to the federal forces. Thus, the republic's Russian community might have numbered approximately 4,500 people at that time. At the same time, a significant part of it was compactly concentrated in several *stanitsas* (Cossack villages), mainly in Troitskaya, Ordzhonikidzevskaya, Nesterovskaya, and Voznesenskaya.

The 2010 census recorded a reduction in the Russian community to 3,000 persons, meaning that it contracted by about a third during the "aughts". Given the limited scale of natural decline, this was mainly the result of the continuing intensive migration outflow, which for 2003-2010 could have been between 1,000 and 1,500 people. Moreover, since the beginning of 2005 the target program "Return and resettlement of the Russian-speaking population" had been operating in the republic. Its complete absence of results was clear evidence that the "de-Russification" of Ingushetia was a *fait accompli*.

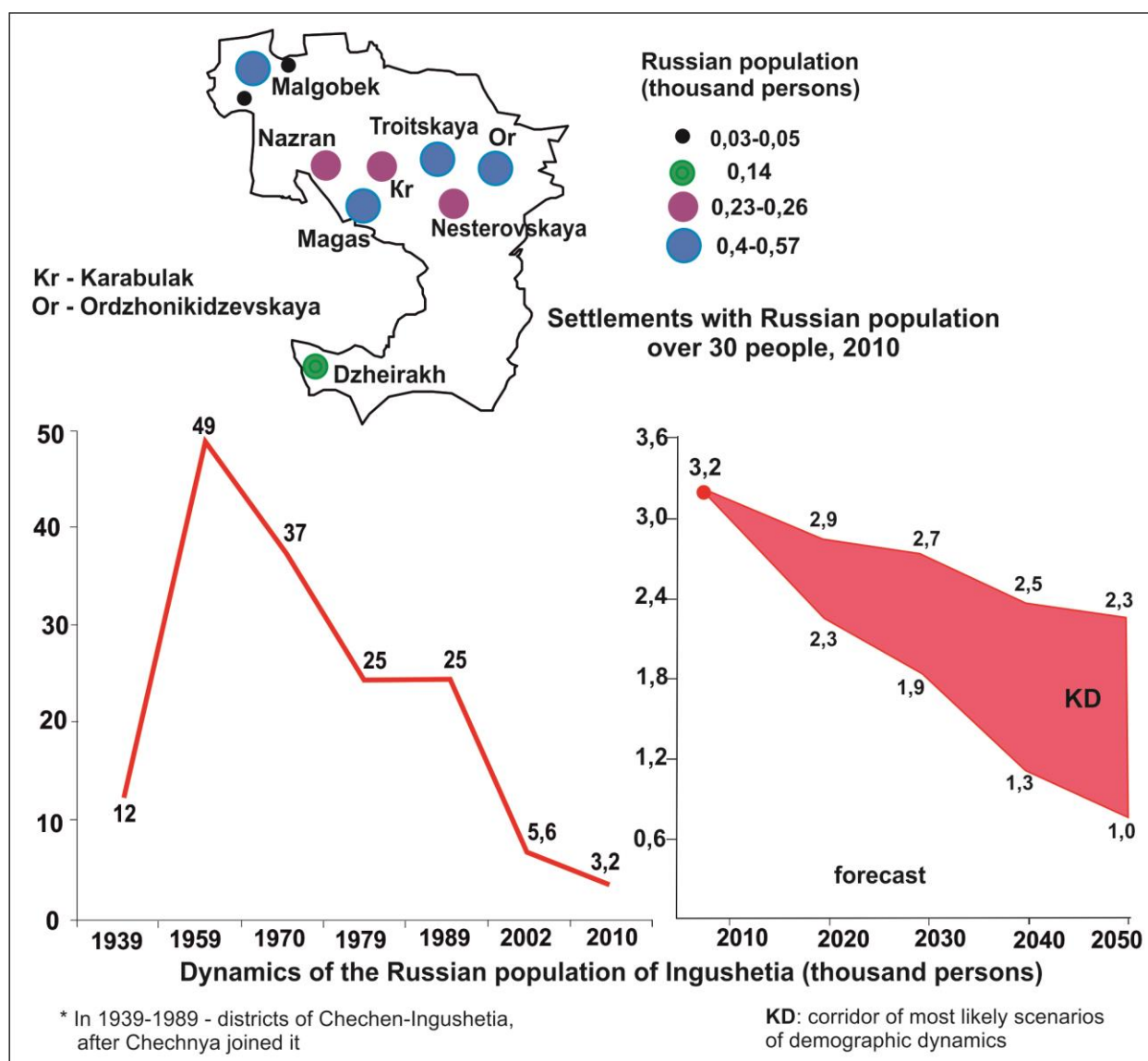


Figure 3. Russians in Ingushetia, 1939-2050

Each following census of the Russian population would record a further reduction of the local Russian community, primarily due to further outflow and assimilation, rather than natural decline. According to the 2010 census, Russians in the republic had only 0.88 children per active woman of childbearing age. The reason for such a small number of children is the same as in neighboring Chechnya. Corresponding calculations suggest that currently in Ingushetia about 20-25% of Russian women of reproductive age are married to Ingush, i.e. "help" the demographics of the indigenous people. Rapid quantitative reduction of the community in such a situation is inevitable even without taking into account migration (Figure 3). At the same time, the lower edge of the quantitative range shown on the map is calculated for a smaller outflow of Russians from the republic than existed in the first decade of the 21st century. But the preservation of migration at the level of the 2000s, with the participation of the assimilation factor and natural decline, will already by 2030 have reduced the local Russian community to several hundred people. In this case, by the middle of the century, the Russian population of the republic, minus the security forces there on duty, will be represented by a small group of old-timers and a tiny number of random people brought to Ingushetia by the whims of life circumstances.

DAGESTAN

The most significant progress in reducing the number of Russians has been made in the third republic of the North-Eastern Caucasus, Dagestan. This process has been underway for more than half a century, but accelerated greatly in the post-Soviet decades. At its peak, in the mid- and late 1990s, as many as 4,000-6,000 Russians left the republic annually. By 2010, this figure was reduced to 1,000-1,500 people.

In the first years of the 21st century, the outflow was reduced to 1,500-2000 people, and in 2003-2005 came to 1,200-1,500 annually [Dagestan-2005 ...: 15]. In the mid-2000s was launched the "North" program, aimed at bringing back the Russian population. However, in the second half of the "aughts" migration outflow of Russians from Dagestan was about a thousand people a year and significantly exceeded their natural decline.

The 2010 census recorded 104,000 Russians (101,000 not including military units) in the republic. Thus, over the period 2002-2010 the community decreased by 14,000 people, of whom no more than 4,000-5,000 were the result of natural decline.

Analyzing the possible prospects of the Russian community, it is necessary to take into account the geographical narrowness of its modern presence in the republic. Most of Dagestan by now has practically no Russian population. In half of the country's rural areas, groups of Russians make up no more than 20-30 people (tenths, and sometimes hundredths of a percent of the population). Out of almost 1,500 settlements of the republic in 2010, Russians were completely absent or had a minimum number (1-2 people) in 1,124 of them (3/4 of the settlement network of the republic). If you take into account the settlements in which there were only a few Russians (3-10), the share of "derussified" settlements rises to 90%.

About 60% of the republic's Russians are concentrated in the metropolitan agglomeration of Makhachkala and Kaspiisk and in Kizlyar. If we include Derbent, Khasavyurt and the two northern regions of Kizlyar and Tarumovsky, this share grows to 80%.

At the same time, the modern age "pyramid" of Russian Dagestan (Figure 4) has the form of a rectangle, i.e. almost does not differ from the federal one and does not suggest any rapid demographic shrinkage in the coming decades. But two factors (as in the two Vainakh republics) - migration and assimilation - will significantly accelerate its reduction.

The low fertility of Russian women in Dagestan (0.98 children per woman aged 20-39) recorded by demographic statistics is not as pronounced as in the Chechen Republic and Ingushetia. But it also shows that currently about 15-20% of local Russian women are in inter-ethnic marriages.

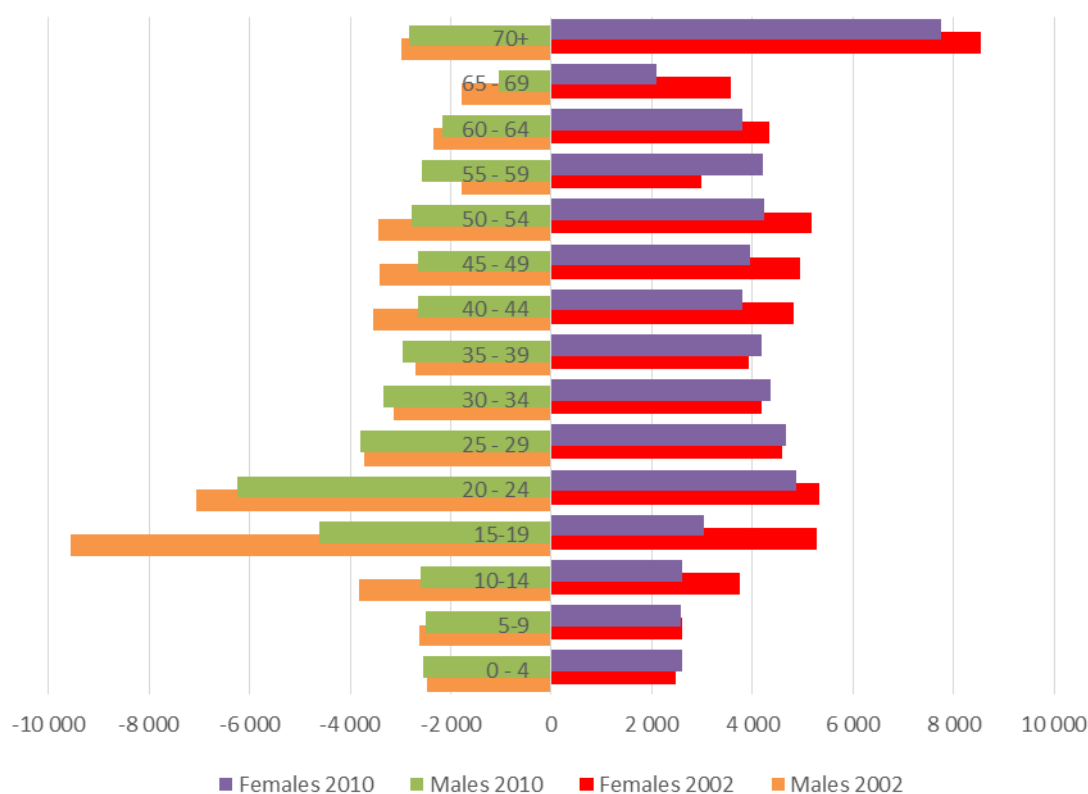


Figure 4. Age composition of the Russian population of Dagestan, 2002-2010, people

An important role in the downward demographic dynamics of local Russians will obviously be played also by migration. The complex ethno-political and socio-economic situation in the republic, just like the existing migration tendency, practically predetermines the further outflow of Russians from the republic. Only its scale is in question. Given the long-term persistence of annual migration rates at the current level (up to 1% of their total number) and the negative scenario of natural dynamics (the lower bar of the corridor of demographic opportunities), the number of Russians in Dagestan may drop to 75,000 by 2030, and by mid-century will be less than 50,000 (Figure 5).

But even the unfolding of the scenario of minimal natural loss with a threefold decrease in the outflow rate (about 0.3% per year) will lead to a reduction in the Russian population of Dagestan by 2050 to 75,000 people.

Thus, the range of likely demographic dynamics of the Russian population of Dagestan cannot be called catastrophic, but it does not inspire optimism either. Russians, who at the turn of the 1960s represented more than one fifth of the population of the republic, by 2040-2050 will have become once and for all a small ethnic group (1.5-2.0% of the inhabitants of Dagestan), having fallen from second place (1959) to eighth or ninth in the demographic ranking of the peoples of the republic. The territory of Russian resettlement in the middle of the 21st century will essentially be limited to Makhachkala, Kizlyar and two northern districts of Dagestan.

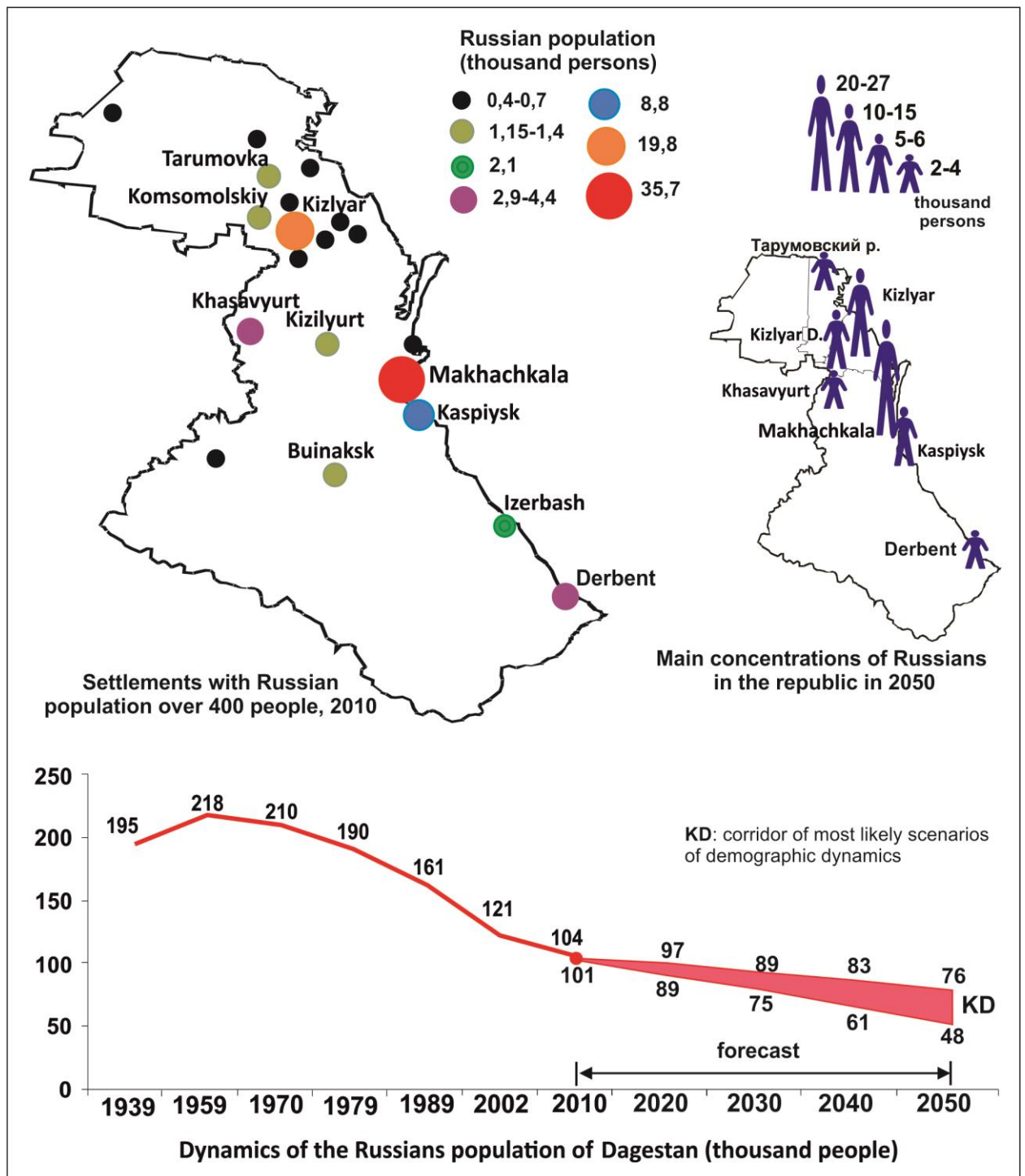


Figure 5. Russians in Dagestan, 1939-2050

NORTH OSSETIA

The "Russian question" in North Ossetia is not as acute as in the North-Eastern Caucasus. There are a lot of Russians here, and they continue to be the second largest ethnic group in the republic. However, their demographic decline remained a stable trend throughout the post-Soviet period. In the 1990s, the annual outflow, according to A.B. Dzadziev, remained at the level of 800-1,000 people, and the overall reduction of the Russian population in the republic in 1989-2002 (by 24

thousand people) was equally conditioned by natural decline and migration [Dzadziev 2008: 133-137].

But there is every reason to believe that the real outflow of Russians was even greater. The 2002 census recorded 165,000 Russians in the republic. However, an analysis of their age composition allows the attribution of about 11,500 people to the federal forces. Thus, the "civilian" Russian community of North Ossetia at the beginning of the 21st century numbered 153-154,000 people, and its real reduction for the period 1989-2002 could be about 34-35,000 people, indicating a much higher rate of migration, which at the peak of Russia's systemic crisis (the early through the mid-1990s) could have reached 2,000 people a year, and by the turn of the new century should have shrunk to an annual 1,000-1,500.

The outflow of the Russian population at this time was almost ubiquitous. In droves Russians left Vladikavkaz and other cities, as well as rural areas. The trend continued into the first decade of the 21st century. According to the 2010 census, there were more than 147,000 Russians left in the republic, of whom about 4,500 belonged to the federal forces. Thus, the old-timer population was about 143,000 people, having declined since the previous census by 10,000-11,000 people. About 6,000-7,000 of this number could be due to natural decline, about 4,000-5,000 to migration (the average annual level is 500-600 people). Thus, the outflow of Russians significantly decreased in comparison with the first post-Soviet decade, but remained a stable trend, significantly accelerating the demographic contraction of the local Russian community.

Analyzing the reasons for the migration of the Russian population from the republic, researchers tend to focus on economic factors. Given the high level of socio-cultural modernization and the Orthodoxy of a large part of the indigenous population of North Ossetia-Alania, there are at first glance no other serious reasons for an intensive outflow. However, the systemic ethnicization of the republic's society makes itself felt in full in post-Soviet Ossetia. And sociological surveys record a clear understanding by local Russians of their lack of social prospects (their "second-rateness"), which does not allow them to compete on equal terms with the indigenous population for status positions [North Caucasus ... 2010: 24].

The steady outflow of Russians from the republic testifies to the fact that they have not yet fully accepted their increasingly marginalized social status. More precisely, obvious age differences are visible: if the older generation has somehow been reconciled to its loss of status, a significant part of young people (about a third) are hoping to leave for "big" Russia. It is young people that make up a significant part of the modern Russian migration from North Ossetia.

Thus, the dynamics of the Russian population in the republic, both in the near (until 2020) and long term, are more likely to be determined by the double "work" of natural loss and migration. And the existing age composition of the Russian community indicates that in the current decade natural decline may play a more significant role in its demographic contraction. According to the 2010 census, in North Ossetia the oldest age group (people 70 and older) represented 12.6% of all Russians, and 23% including those aged 60-69 (Figure 6). For Russia as a whole these figures were 10.4 and 19%, respectively.

Meanwhile, the small generations of those born in the 1990s are now entering childbearing age. Suffice it to say that in the republic the number of Russian women of active reproductive age

(20-39 years) will decrease from 22,200 in 2010 to 18,300 by 2020, and in 2030 will be only 14,600 (and this without taking into account the migration factor). With such a significant reduction in the number of potential "moms", it is almost impossible to count on fertility, which can completely compensate for the natural decline in a population. However, if we assume that for one Russian woman of reproductive age in the country in the 2020-2030s there will be about 1.7-1.8 births, then the community, without taking into account the migration factor, may decline very slowly in the coming decades.

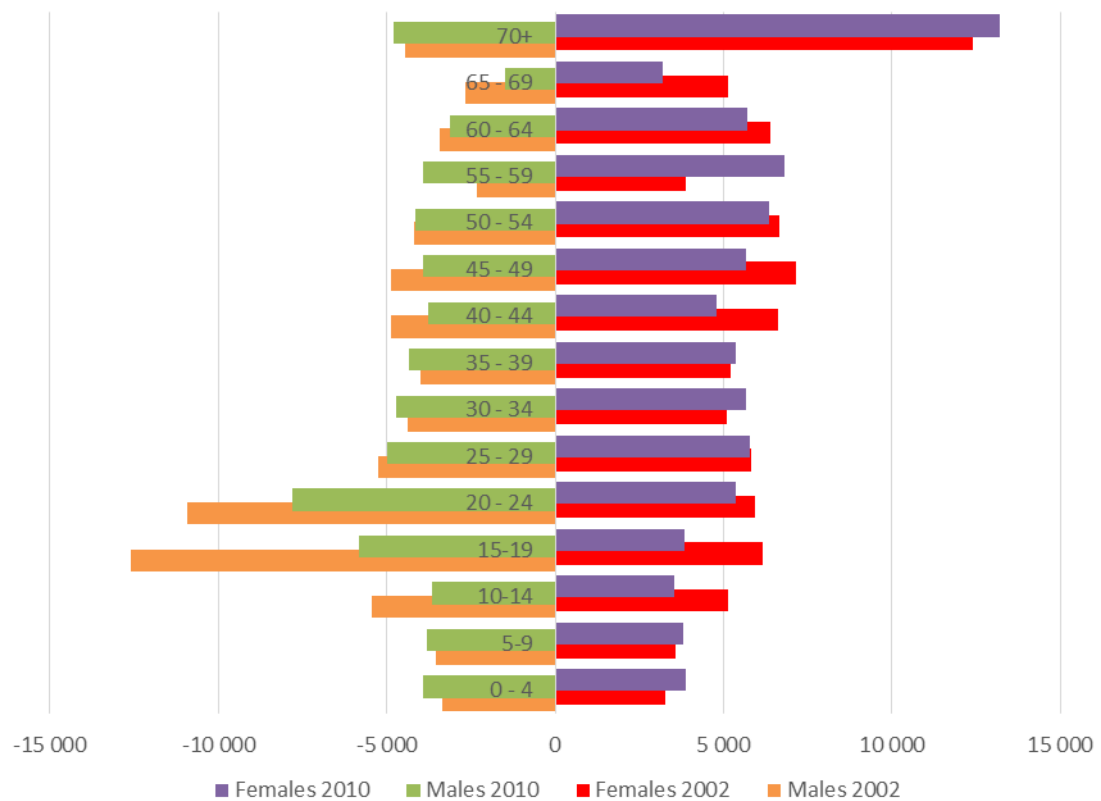


Figure 6. Age composition of the Russian population of North Ossetia, 2002-2010

It is significant that the ratio of children to women of reproductive age among Russians in the republic coincides with the indicator for Russia as a whole - evidence that the assimilation factor, so clearly recorded in the republics of the North-Eastern Caucasus, does not play a significant role in the demographic dynamics of the Russian population of North Ossetia. A common religion and similar levels of sociocultural modernization have substantially smoothed out the effects of this factor (that is, the mixed offspring of Russian-Ossetian marriages have become more evenly distributed between the two ethnic groups).

But there is still the migration factor. It is very likely that the outflow will continue for the foreseeable future. If its current scale remains unchanged, the Russian community could lose several thousand people every decade and, by the middle of the century, number fewer than 100,000 people (Figure 7).

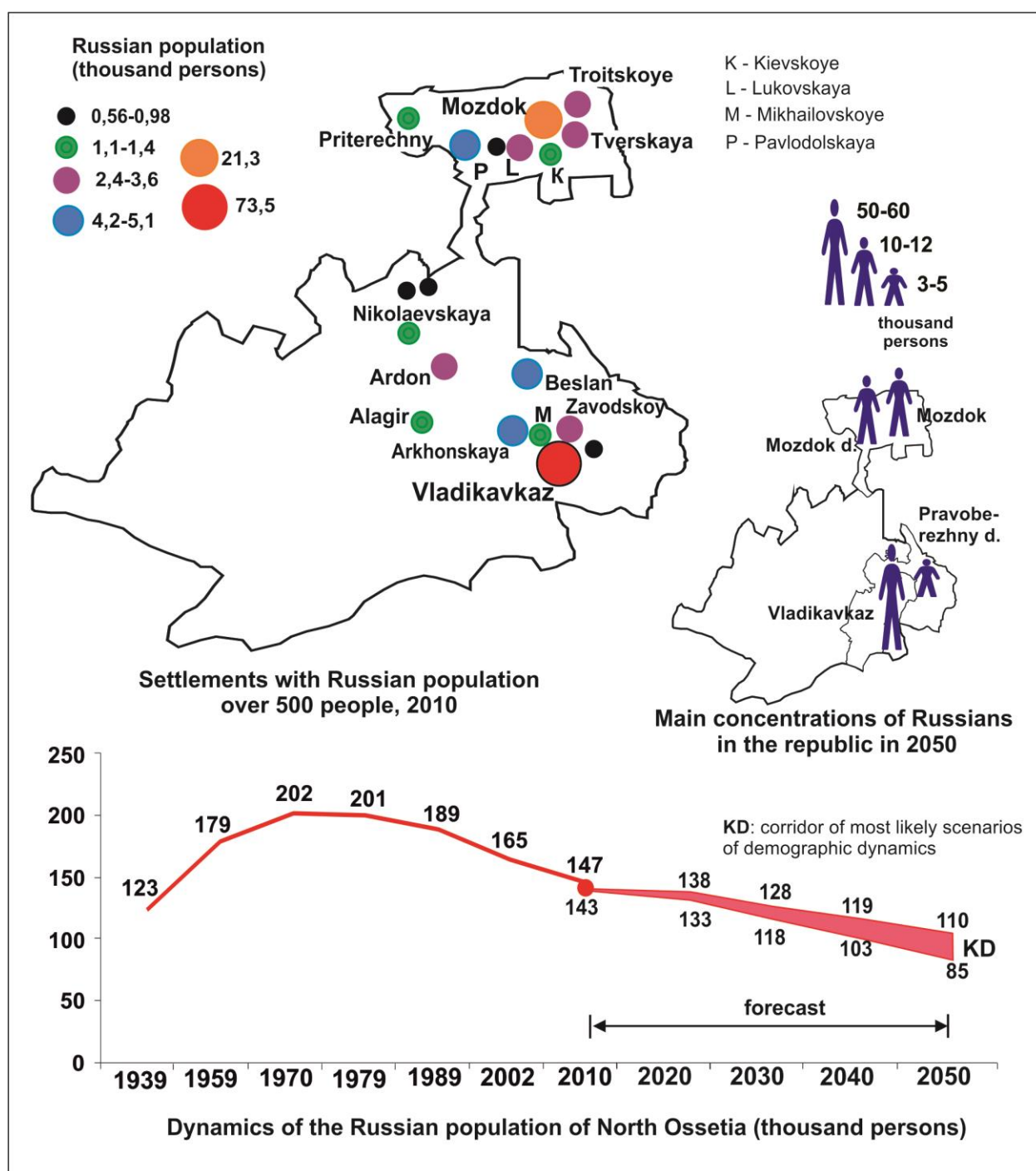


Figure 7. Russians in North Ossetia, 1939-2050

What matters, however, is not only the quantitative scale of the outflow, but also the deterioration in the age composition of the remaining Russians. The role of this indicator in the demographic depopulation of the Russian community over the next 15-25 years may be invisible for now. But after this period, the consequences could be almost catastrophic: in the middle of the century, the number of Russians may begin to "melt" at a rate of 3-4% per year. However, this scenario assumes not only a sustained outflow, but also a sustained migration loss of a notable share of local Russian youth.

Currently, the geography of the Russian population in the republic is mainly limited to Vladikavkaz and Mozdok with the Mozdok region. In total, these two centers and the region

account for more than 80% of all local Russians. In 71 settlements (almost 38% of the republic's entire settlement network), there are no Russians or their number is minimal (1-2 people). And if we include those settlements where the number of Russians is only 3-10 people, half of the resettlement system is essentially devoid of a Russian ethno-cultural presence (North Ossetia tends toward the deeply "derussified" Northeast Caucasus in this regard). And in the long term, the geography of Russians in the republic will continue to shrink, becoming more and more limited to the capital and the Mozdok region.

KABARDINO-BALKARIA

Back in the early 1970s, the Russian population accounted for 37% of the republic's population and, only slightly inferior in number to the Kabardians, continued to grow until the end of the Soviet period (240,000 in 1989).

The 2002 census recorded 226,200 Russians in Kabardino-Balkaria. Consequently, for the period 1989-2002 its number must have shrunk by only 14,000 people, of whom, according to A.B. Dzadziev, 12,000 were from natural decline and only 2,000 from migration [Dzadziev 2008: 131]. However, in another publication he gives quite different figures, asserting that in 1989-1998 alone about 7,700 Russians left the republic [Dzadziev 2007: 57]. In fact, this discrepancy may mean that the results of the 2002 census in Kabardino-Balkaria overstated not only the number of indigenous persons, but of Russians also.

There is every reason to believe that the total migration loss of the Russian population in 1989 - 2002 could come to about 10,000 people. Consequently, the number of Russians in the republic in 2002 was about 220,000 (about 218,000-219,000 without the military forces).

This assumption is partly confirmed by the further dynamics of the Russian community. According to the 2010 census, the number of Russians in the republic was 193,000 – 34,000 fewer than in 2002. If we proceed from these figures, we will have to acknowledge a significant increase in the migration outflow of Russians from the republic in the 2000s. Considering the size of the natural decline (about 9,000-11,000 people), about 23,000-25,000 people must have migrated in 2002-2010 (about 3,000 annually). In other words, the intensity of the outflow increased several times in comparison with the first post-Soviet decade. This could hardly be true.

But there is no doubt that the migration losses of Russians in the 2000s were indeed great. According to Kabardino-Balkaria's Migration Service, in 2005-2007 they came to about 2,000 people each year. Accordingly, for the entire intercensal period the outflow could amount to about 15,000-16,000.

So, the population decline of the Russian community was more even than follows from the official results of the post-Soviet censuses (21,000-22,000 for 1989-2002, 25,000-26,000 for 2002-2010). But this result does not negate the main conclusion: on the whole, the republic that had successfully made it through the 1990s became, in the aughts, one of the leading regions in terms of the outflow of Russians from the North Caucasus.

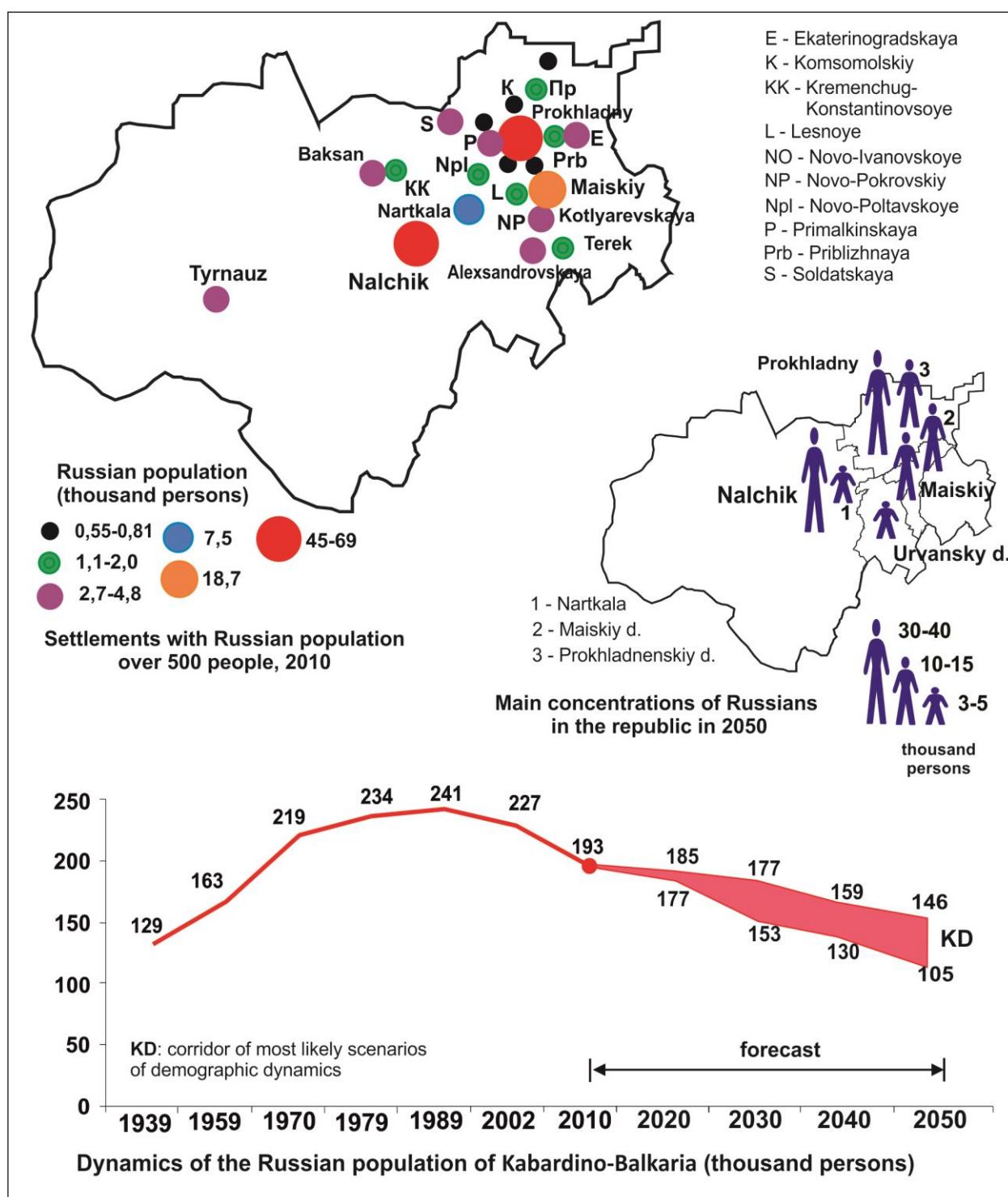


Figure 8. Russians in Kabardino-Balkaria, 1939-2050

Migration in the 2000s accounts for 60-70% of the demographic decline of the local Russian population. Moreover, it was young people who left the republic most intensely (as in North Ossetia). A calculation of the natural dynamics of the Russian community in the 2000s, taking into account the survival rate of different age groups, makes it possible to determine their migration losses. Among those in their twenties (20-29 years), the outflow was about 3,500 people, while for those in their thirties (30-39 years) it was over 8,000. In other words, Russian migration was primarily composed of young and middle-aged persons.

Should this trend continue, the future age structure will have a large proportion of elderly people. The full negative impact of such a transformation of the republic's Russian community on its demographic dynamics may begin to be felt only in the second third of the century. But the current outline of the age pyramid already suggests a noticeable increase in natural losses in the second half of the current decade, when the representatives of the largest group of the republic's Russians, people aged 70 years and over, start to disappear en masse. In 2010, they accounted for 12.4% of the Russian population of Kabardino-Balkaria.

However, as already noted, migration plays a central role in the demographic compression of the republic's Russians. Its continuation in the coming decades at the level of 1% (up to 2000 people a year) could lead to the collapse of the Russian community by the middle of the 21st century. However, the probability of such a demographic scenario is close to zero; more likely is a reduction of the outflow. With a decrease in its annual outflow rate to 0.7% and a negative scenario of natural dynamics, the number of Russians in Kabardino-Balkaria may drop to the 1,000 mark by the middle of the century (Figure 8).

A positive development of natural dynamics, along with migration at 0.3% per year, will allow the Russian community in 2050 to maintain its population at the level of 145-150 thousand people. In this case, despite shrinking significantly in number and share, Russians will still be in second place in the demographic ranking of the peoples of the republic, outstripping the Balkars.

The geography of local Russians will retain its basic contours under any demographic scenario. Already at the present time it is very narrow, with 90% of all the republic's Russians concentrated in Nalchik and two northeastern regions (Prokhladnensky and Maisky), occupying only one sixth of the territory of Kabardino-Balkaria. These regions and the republic's capital will also remain the main centers of the Russian population in the middle of the 21st century.

KARACHAEVO-CHERKESSIA

During the second half of the twentieth century, the Russians were the largest ethnic group of Karachaevo-Cherkessia. Although their share in the population has been declining since 1959, the total number continued to grow until the end of the 1980s. Back in 2002, Russians accounted for more than a third of the population of the republic. At the same time, in terms of the rate of outflow of Russians in 1989-2002, the republic lagged behind only Chechnya and Dagestan - about 18,000 people (about 1,500 per year).

The socio-economic stabilization of the 2000s did not affect the intensity of this migration. Expert estimation of Russian migration losses for 2002-2010 gives a figure of 11-12 thousand people (the same 1,500 per year). And taking into account natural decline, the total demographic losses of the republic's Russians in this period were 17-18 thousand people.

All the more surprising therefore were the data of the 2010 census, according to which the number of Russians in the republic was 150,000, i.e. had grown by a thousand people. Obviously, this figure has a weak relation to reality, as the real number of Russians in the republic can be only about 130,000, some 80% of whom are currently concentrated in Cherkessk in the two western

regions of Zelenchuk and Urupk (Figure 9) - that is, as in all other republics, the Russian population is distributed on the territory of Karachaevo-Cherkessia very unevenly.

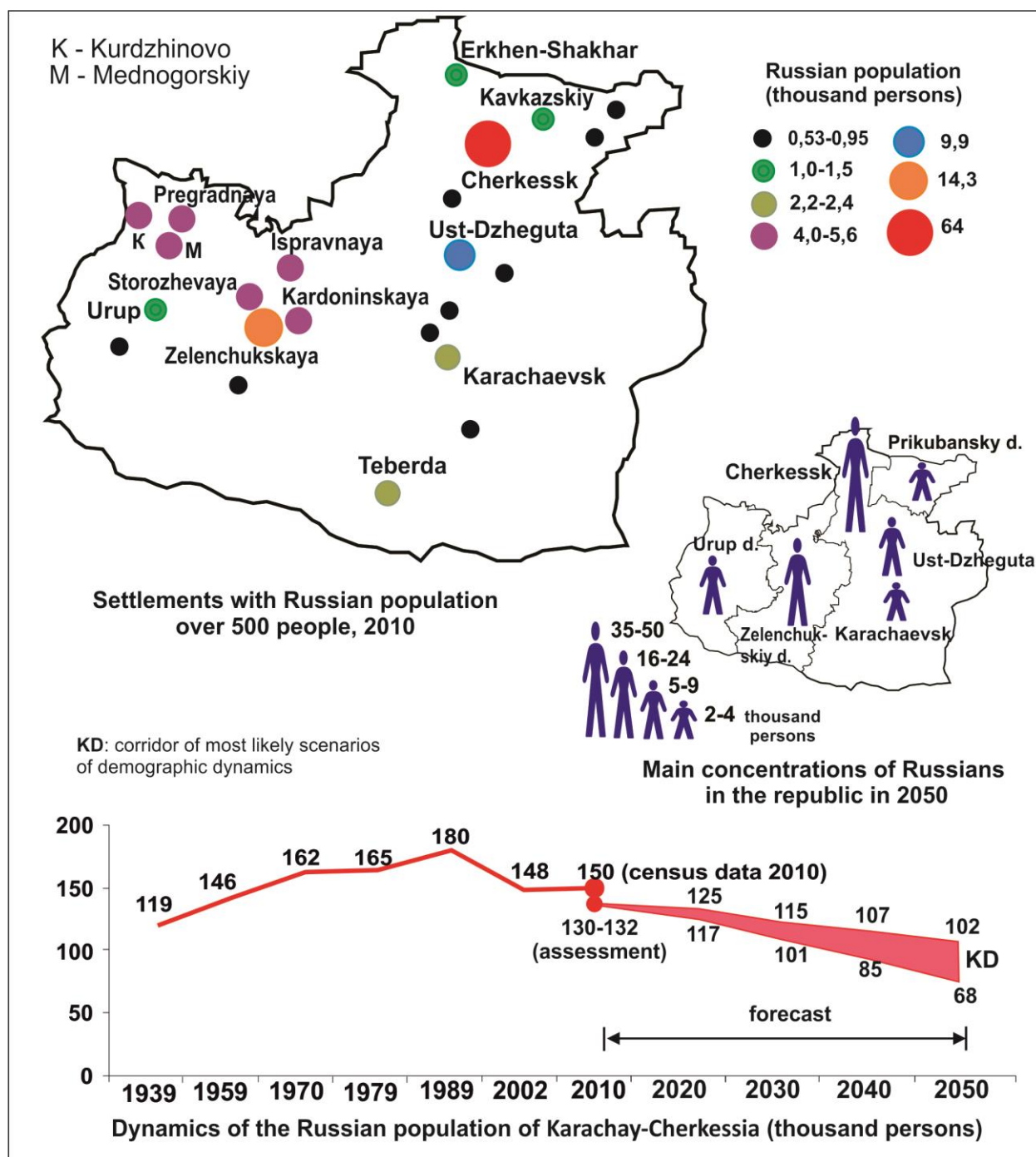


Figure 9. Russians in Karachaevo-Cherkessia, 1939-2050

The overcounting done in 2010 makes forecasting much harder. Moreover, it is hardly possible to check the results with those of the next censuses, since these future results will most likely become "hostages" of the falsifications that have already occurred. Indeed, given the steady decline in the local Russian population, the 2020 census, if conducted without overcounting, should give a figure that is substantially inferior to that of 2010 (since in addition to the demographic shrinking of the last decade, the overcounting of 2010 would have to be deducted). Such a sharp reduction in the number of Russians in the republic could be negatively perceived

not only in society, but also in the structures of the federal government, which is likely to force the republic's leadership not to take the risk and to resort to more overcounting.

Calculations of the likely dynamics of the Russian population of Karachaevo-Cherkessia for the medium and longer term lead to a mid-century demographic corridor in the range of 70-100 thousand people. The upper limit would result from a positive scenario of natural dynamics and an outflow at the annual level of 0.3% of the local Russian population, while the lower one would result from a negative natural dynamics and migration at the level of 0.8% per year.

It is also necessary to take into account the deformation of the sex and age composition. As in other republics, Russian migration from Karachaevo-Cherkessia consists mainly of young people. So, already in the second half of the 21st century the local Russian community, by critically increasing the proportion of the elderly population, could increase several times over the rate of its natural decline and within one or two decades become a candidate for compression under the Dagestan scenario.

ADYGEA

Adygea is the only republic in the North Caucasus where Russians continue to be the main ethnic group. It is significant that even in the 1990s, characterized by a surge of local nationalism, Adygea remained attractive to Russian migration from other regions of the Russian Federation. During the period 1989-2002 the number of Russians in the republic decreased from 297,000 to 289,000, while their natural loss came to about 15-16 thousand people at that time. Thus, about half of the losses were compensated by the migration inflow.

Also minimal were the practical results of the republic's migration policy aimed at bringing back the descendants of the 19th century Circassian Muhajirs. It is significant that even the Syrian Circassians, forced to leave their war-torn country, were for the most part sent to Europe and Turkey. The total number of foreign Circassians returning to the North Caucasus during the post-Soviet period (i.e., over a quarter of a century) was several thousand people, of which only a part returned to Adygea.

The "joining" of the republic to Krasnodar Krai (one of the main centers of attraction of immigrants from all over the Russian Federation) determined the positive migration balance of Adygea in the 2000s. Inflow exceeded 10,000 people, a significant part of whom were Russian.

This replenishment was supposed to make up for half of the demographic losses from the natural decline of the republic's Russians, which for the period 2002-2010 was about 11-12 thousand people. But in this case, the total number of Russians in Adygea should have shrunk over the intercensal period from 288,000 to 282-283 thousand. However, the 2010 census recorded a population of only 271,000 Russians in the republic, as if its natural loss had been supplemented by an outflow, which obviously does not correspond to migration statistics.

But even if we assume that the influx of Russians into the republic in the next few decades will be replaced by an outflow and that this trend will become stable, the very scale of the demographic importance of Adygea's Russians is a reliable guarantee of their remaining the most numerous ethnic group in the region for a long time to come (Figure 10).

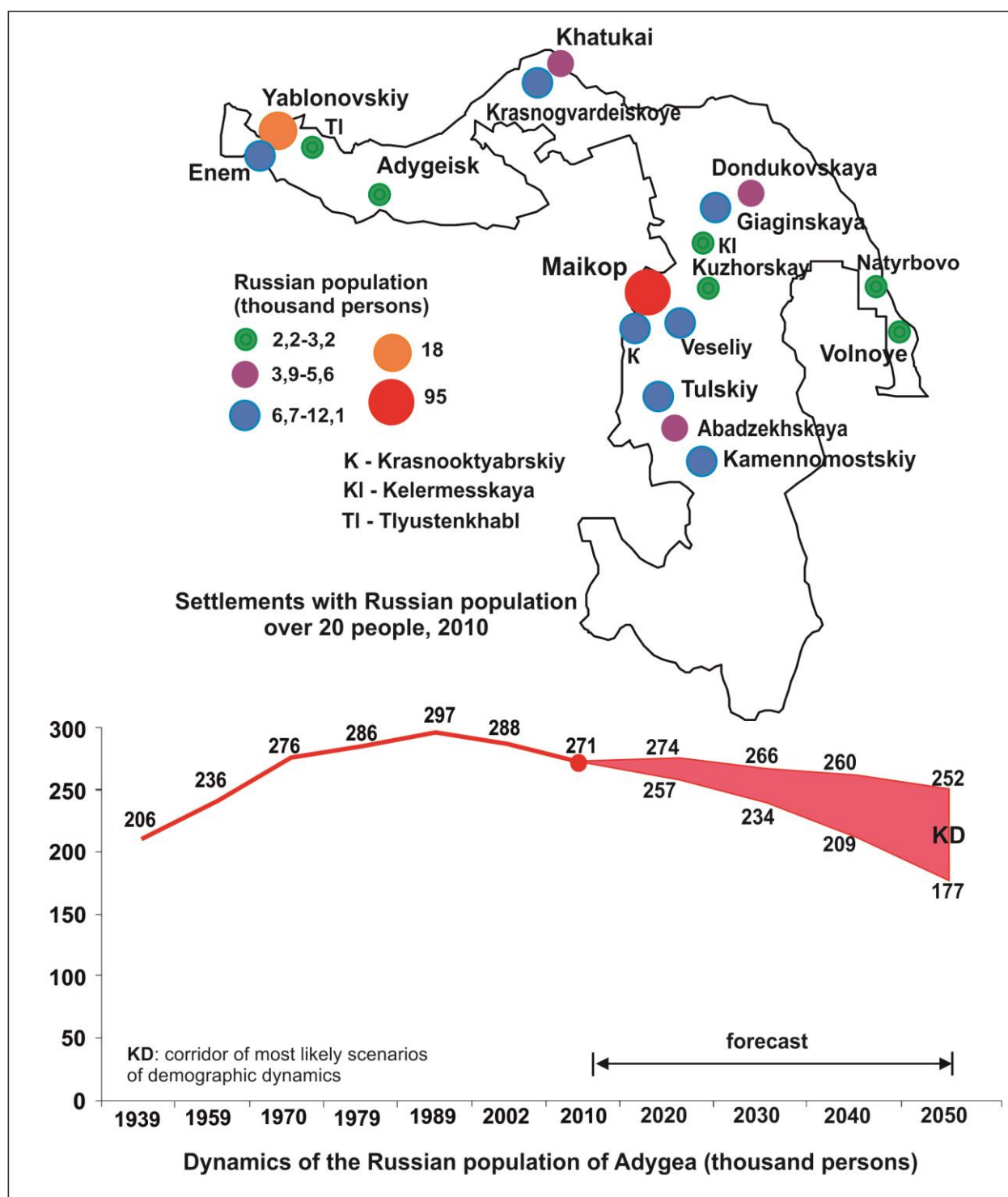


Figure 10. Russians in Adygea, 1939-2050

With an annual outflow of 0.3% and a negative scenario of natural dynamics, the number of Russians in the republic by the middle of the century may drop below 180,000 people, yet it will still be 1.5-1.6 times higher than the number of Adygeans. But Adygea, let's repeat, is an exception among all the region's republics.

CONCLUSIONS

The decline of the Russian population in the republics of the North Caucasus, which began in the 1970s, has now developed into a stable trend. Given the existing ethno-political, socio-economic and socio-cultural realities, stopping it appears impossible. The only question is whether it can be minimized by reducing the scale of the migration outflow of Russians. But even such a compromise solution of the "Russian question" in fact presupposes a fairly serious modernization of the North Caucasus consistently implemented by the federal center, which also seems extremely unlikely, given the peculiarities of the ethnic policy of the current Russian government and its very limited capabilities for long-term planning.

This means that the process of the natural decline of Russians in the North Caucasus, characteristic of the entire Russian Federation, will be substantially supplemented and accelerated by migration outflow from the republics. It is migration in the next 2-3 decades that will continue as the central mechanism for the accelerated reduction of the Russian demographic presence in the republics of the region. At the same time, not only the quantitative scale of the outflow, but also the deterioration in the age structure of the remaining Russians (the bulk of migrants are people aged 20-40 years) are of great importance.

The role of the migration factor will begin to grow rapidly by the middle of the century, when in the group of pensioners there may already be about 30-40% of the entire Russian population of the republics of the North Caucasus, and thus it will enter a period of intensive and, some time later, possibly catastrophic shrinkage.

However, the natural losses of Russians will begin to grow significantly in the near future, since the progressive reduction in the number of Russian women of reproductive age in all republics (as well as in the Russian Federation as a whole) has already begun, and by 2030 their number will be reduced by 25-30% of the 2010 level.

In other words, the shrinking of the Russian population of the North Caucasus is inevitable; the only question is how it will play out. At present, its size has already dropped to the level of the mid-1930s. By 2030, under a negative demographic scenario, there may remain fewer than 700,000 Russians in the region, and by the middle of the 21st century, fewer than 500,000 (Figure 11). However, a positive scenario is also possible, in which the demographic losses will be considerably smaller and the number of Russians will fall by no less than 700,000 by 2050.

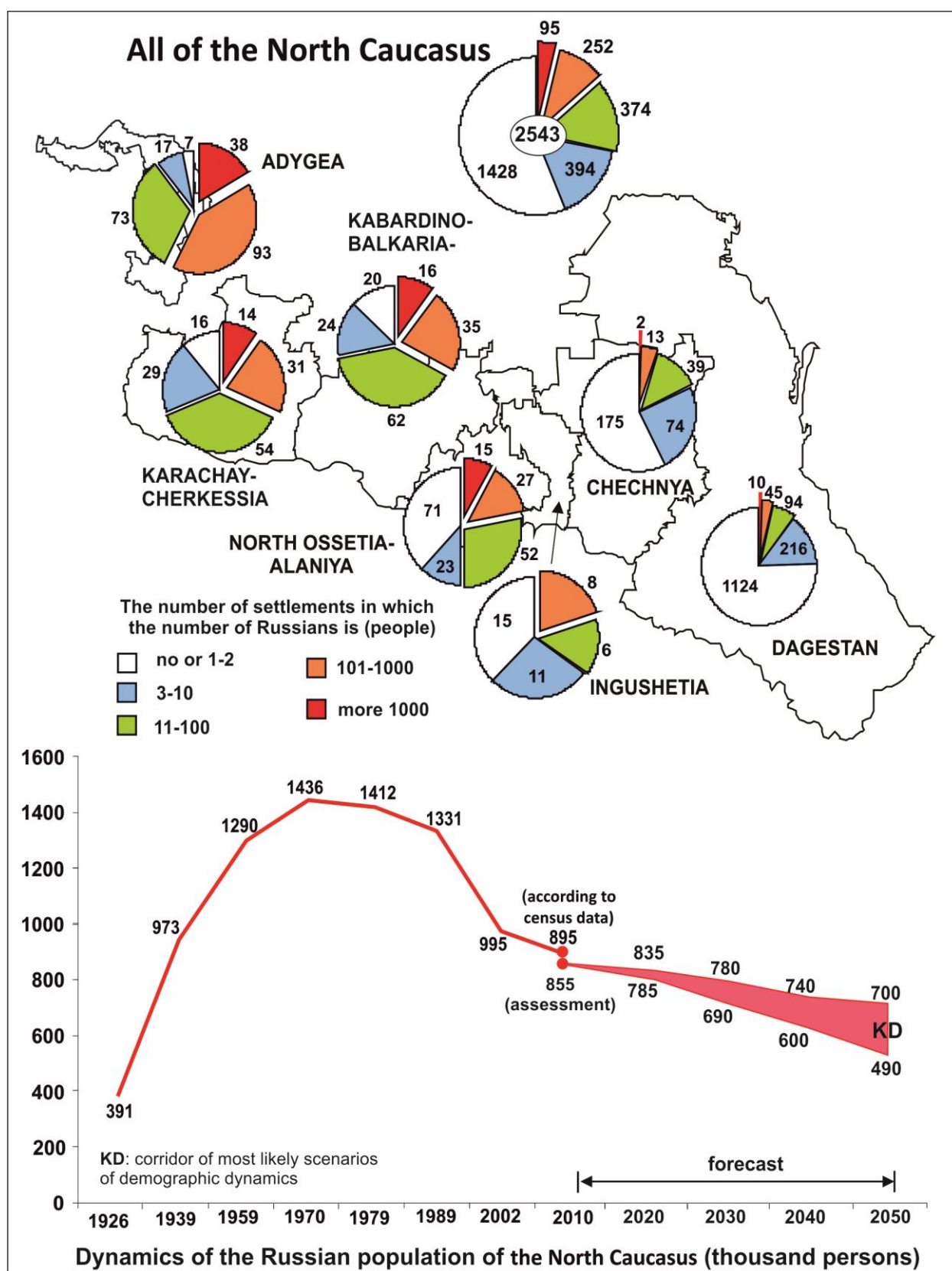


Figure 11. Russians in the North Caucasus, 1926-2050

Almost inevitable too is the further reduction of the "geographical" representation of Russians. Already at present, out of 2,500 settlements in the North Caucasus, more than 56% are practically lacking a Russian population, and only in 358 (14%) of them are there territorial groups of more than 100 people. Obviously, over time, the number of settlements without a Russian

population will increase (primarily due to small settlements). At the same time, the specific ratio of different subregions of the North Caucasus will change. While in the middle of the 20th century almost 44% of the Russian population of the republics lived in the east of the national region, at present the share of the three eastern national autonomies has fallen below 14%, and by the middle of the century is likely to drop to 11-12.5%. In the central part of the North Caucasus the share of Russians will decrease from 54.6 to 51.4-52.8% (Figure 12), while in the western subregion (Adygeya) it will grow to 36%.

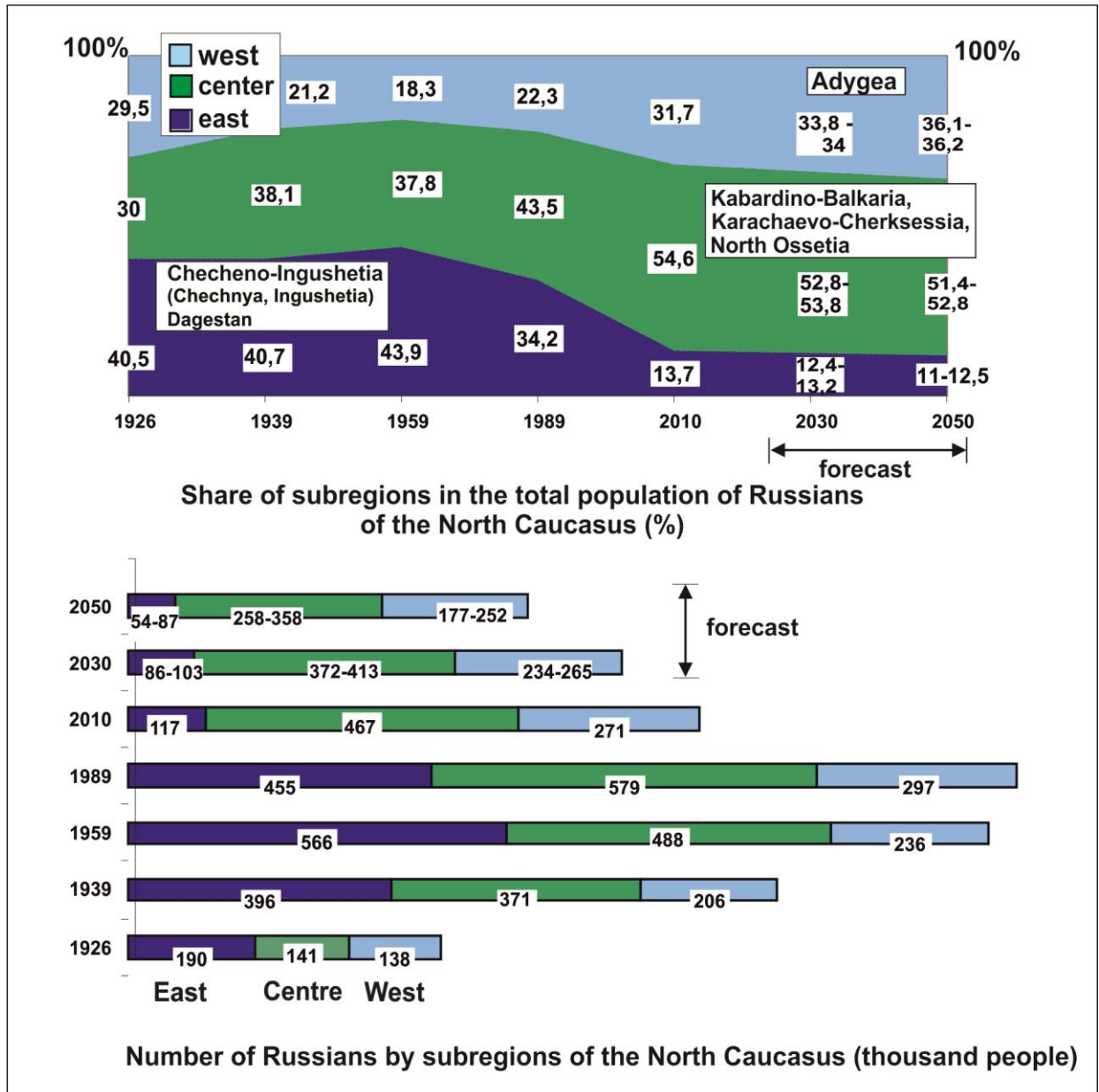


Figure 12. Russian population in the subregions of the North Caucasus, 1926-2050, %, thousand people

However, it should be understood that the horizon of our research is limited to the mid-21st century. Until that time, the probability of a sharp reduction in the number of Russians is small. But the very stability of natural decline and migration outflow, together with negative shifts in the age and sex composition, significantly increases the likelihood of the demographic collapse of the republics' Russians in the second half of the century. And it doesn't matter whether this will take

place in the century's third or fourth quarter. Whether 20-30 years earlier or later, the median age of the Russian population of the North Caucasus could exceed 50 years, and from that time on its demographic contraction will begin to acquire an irreversible and self-accelerating character.

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ALEXANDER KULISCHER

ON THE DEMOGRAPHIC FUTURE OF RUSSIA *

MARK TOLTS

In the late 1920s and early 1930s, Alexander Kulischer published three demographic articles in the most authoritative and widely read newspaper of the Russian post-revolutionary emigration – “Poslednie novosti” [The Latest News] (Paris). These articles were devoted to problems of population dynamics in some countries around the world. They were the first where the general scheme of demographic changes – now known as the concept of a “demographic transition” or “demographic revolution” – was used in predicting the demographic future of Russia. This publication provides these articles, which are now almost inaccessible to contemporary readers. A preface and helpful explanations have been added to the articles. The preface explains Kulischer’s articles in the context of the development of demography of that period and his interest in the demographic future of Russia.

Key words: history of demography, demographic transition, demographic revolution, demographic dynamics, fertility, mortality, population of Russia, Alexander Kulischer [Alexandre Koulicher] (1890-1942).

In the course of studying the contribution of the Kulischer family to the theory of demography, three forgotten articles by its youngest member, Alexander Kulischer, devoted to the problems of demographic dynamics, were discovered. They had been published in the late 1920s and early 1930s in the most authoritative and widely read newspaper of Russian post-revolutionary emigration, *Poslednie novosti* [The Latest News] (Paris), of which the author was one of the leading staff members. In them was used, for the first time ever in the forecasting of Russia’s demographic future, the general scheme of demographic changes now known as “demographic transition” or “demographic revolution.”

Today we know that Kulischer was one of the pioneers of the theory of demographic transition, the concept of which he presented in publications of the first half of the 1930s in German and French [Vishnevsky, Tolts, 2015]. The newspaper articles written before that were a necessary stage on the path that led him to the successful formulation of these theoretical positions. They undoubtedly deserve to be republished, a task we have therefore undertaken (see below). Before proceeding to an analysis of these long-forgotten articles, it is necessary to make a few preliminary remarks in order to better understand the reasons for their implicit focus on predicting Russia’s demographic future, as well as some circumstances that contributed to the formation of Kulischer’s views on demographic processes.

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(PREFACE, PREPARATION OF THE TEXT FOR PUBLICATION AND COMMENTS).

ALEXANDER KULISCHER [ALEXANDRE KOULICHER] (1890-1942).

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Alexander Kulischer, 1927

The post-revolutionary Russian emigration, to which Kulischer belonged, was able to maintain a high level of intellectual activity in exile (see, for example, [Raeff 1990]). Naturally, the former citizens of Russia, who now found themselves outside its borders, were keenly interested in the situation in the homeland they had left behind and in the prospects for its development. At the same time, the ideas of the proponents of a special path of development of Russia – above all, Eurasianism – had become quite popular. However, it is known that Alexander Kulischer's father, Michael Kulischer, a prominent scholar, as far back as the late 1870s had been the first to come out against the adherents of Russian "national uniqueness" [Tolts 2015]. He believed that "the general scheme of development is the same for all peoples" [Kulischer 1887: X]. Of course, Russian post-revolutionary émigrés were interested not only in the overall prospects for the development of their country, but also in its demographic future, on which much depended. Here Alexander Kulischer showed himself to be a loyal follower of his father. In published articles he, unlike many eminent contemporaries (see below), relied on the universality of general scheme of demographic development in predicting the future dynamics of the population of Russia.

While Kulischer's focus on the search for a general scheme of population development undoubtedly came from his father, I do not yet have a definite answer concerning the origins of his specific demographic ideas. In this regard, one can only point to his direct connection with the first American scholar to note some general patterns of population development, which later became part of the concept of the demographic transition. This was the well-known sociologist Edward Ross, who persistently, but unsuccessfully – he sent recommendations to eighteen different places – tried to find an academic position for Kulischer in one of the US universities at the beginning of his emigration [Doykov 2009: 124]. It is known that they exchanged letters in 1922 [Scifres 1964: 52]. Ross is rightly called one of the pioneers in the history of the formation of the theory of demographic transition [Hodgson 1993: 7]. In a book published as early as the beginning of the last century, he noted that the drop in mortality preceded the decline in fertility, leading to a period of accelerated population growth [Ross 1909: 36]. Later, Kulischer would constantly emphasize this stage of demographic transition in his publications. However, confirmation that he was acquainted with Ross's book, where this was first noted, has not yet been found, although Alexander Kulischer repeatedly cites other works of his in a monograph published in co-authorship with his brother Eugene Kulischer [Kulischer, Kulischer 1932].

After these necessary preliminary remarks, we can go directly to the analysis of the content of the articles published below. The first of them is largely a continuation of the story about the World Population Conference, held in Geneva in 1927, to which Kulischer had previously dedicated a special article in the same newspaper [Junius (Kulischer) 1927; see also Tolts 2017]. An informational reason for this article was the appearance of data on the sharp decline in fertility and natural increase in England [Junius (Kulischer) 1928]. Kulischer writes: "[D]evelopment shows that the population of England, as well as of a number of other countries – Sweden, Switzerland, Germany and, in all probability, the United States of America – is clearly transitioning to that stable state in which, until the World War, only the population of France found itself. <...> The issue is one of a stability based on low fertility and low mortality: it is this which constitutes the novelty of the phenomenon in the history of the humankind."

Kulischer also notes that "[t]he tremendous growth of the population of European countries in the 19th century was due not to an increase in fertility, but solely to a decrease in mortality." At the same time, he demonstrates a fairly clear understanding of the demographic transition when, based on the conclusions of a report presented at the Geneva conference by the famous Dutch demographer Henry Methorst, he writes: "[L]arge population growth should be regarded, in essence, as a *transitional period* (italics mine – M.T.), when the successes of hygiene and general culture have already led to a significant reduction in mortality, but there has not yet begun the decrease in fertility which, as the experience of other countries shows, follows on the heels of these successes." Kulischer also knew well the features of the preceding, pre-transition phase, characterized, in his words, by "a steady state of population size" which "was an ordinary, one might think normal state of humankind throughout vast epochs of history." Thus, already in his first article on demographic dynamics, he demonstrates an understanding of the overall pattern of population development: the transition from a state of relative equilibrium with high fertility and mortality to a new state of relative equilibrium with low fertility and mortality, with a period of accelerated demographic growth between them.

Kulischer explains that with the high fertility and mortality prevalent throughout most of human history, the number of surviving children in a family was usually very low. Note that this feature of the traditional reproduction regime had been described quite clearly by his elder brother, the outstanding historian and economist Joseph Kulischer, in *History of Economic Life in Western Europe* [Kulischer 2004: 225, 227]. Of course, Alexander Kulischer was familiar with the classic study of his brother, and hence inherited from a member of his famous family his understanding of the demographic realities of the past. However, his own vast erudition allowed him to find in Adam Smith an example to illustrate the concept not presented in the works of his older brother. Unfortunately, even after the works of the Kulischer brothers, erroneous ideas denying the widespread existence in the past of families with few children at high fertility still needed to be fought against for a very long time [Vishnevsky 2005: 185].

Alexander Kulischer in this article also touches on the problem of the motivation for procreative behavior, emphasizing its dependence on the stage of development of human society. He notes the distinctive attitude to the value of a child's life in traditional society when he mentions "Russian peasant women of old, always pregnant and always dreaming that 'God would take' [to Haven] some of their children." In this he anticipates the conclusions of contemporary researchers [Vishnevsky 2005: 257-281]. Continuing the theme of motivating procreative behavior, Kulischer

writes: "Strengthening the 'maternal instinct' in the sense of caring for the welfare of children – above all for the preservation of their lives – is precisely a phenomenon of modern times: it leads to a reduction of child mortality, but the same 'maternal' and even 'parental' instinct is one of the incentives to reduce fertility."

Observing the demographic changes that have already taken place does not mean seeing in them a universal scheme for the development of the population. Thus, the already mentioned Methorst, who in his report reviewed the indicators for 55 countries, including Russia, did not say anything about its demographic prospects. In Methorst's interpretation, the demographic transition scheme did not play the role of an instrument that could be used to foresee the future of countries that had not yet made the demographic transition, meaning the scheme was not yet complete, or more precisely, had not yet been given the necessary universality. This would be done by Kulischer, who, having given the theory of demographic transition the universality required for its completion, then used it to predict the demographic future of Russia.

In describing the contemporary demographic situation in his abandoned homeland, Kulischer wrote already in 1928: "Russia is still at a rather early stage of this [transitional] process. The acceleration of the growth of the Russian population in the late nineteenth and early twentieth centuries is ... explained entirely by a decrease in the mortality, which fell in the second half of the 19th century." However, on the basis of a universal understanding of the direction of demographic changes, Kulischer confidently predicted: "Undoubtedly, Russia will see a further reduction in mortality, but there is no reason to expect that it will also be spared a decrease in fertility."

To appreciate the significance of Kulischer's conclusion, it is useful to compare it with the vision of Russia's population prospects put forth in an article by Warren Thompson, the leading American demographer of those years and a recognized pioneer of the theory of demographic transition [Szreter 1993: 661]. In this article, which appeared a year after Kulischer's, Thompson [1929] suggested that Russia, thanks to its vast size, could maintain a high population growth rate for a long time. Thompson's generalization was less universal and, applied to Russia, turned out to be wrong.

The news prompting the publication of Kulischer's second article, devoted to the problems of demographic dynamics, was the appearance of the first results of the new census of the population of Great Britain. These results reflected a clear slowdown in population growth rates, characteristic of the advanced phase of the demographic transition that it had already reached [Junius (Kulischer) 1931]. Much later, a staff member of the *Poslednie novosti* recalled Kulischer's unusual ability to find the material he needed for his work: "Not a single line in a single newspaper in many languages of the world, if it could be useful to him, escaped his attention. When he found the time to read all this, no one knew. Knowledge and information ranging from issues of current politics to the social sciences and its teachings – all this was absorbed like a sponge by A.M. Kulischer"[Meisner 1966: 201].

For this particular article of Kulischer's, one essential source was a newspaper publication by the leading English demographer of the time, Alexander Carr-Saunders, in which he discussed the results of the new census in his country [Carr-Saunders, 1931]. Analyzing these results against the background of the demographic situation in different parts of the world, he devoted a special section to the population of Russia. The article of Carr-Saunders told Kulischer quite a lot, yet he

was far from fully agreeing with his venerable English counterpart. And on the main point of interest to Kulischer, the demography of Russia, he was definitely at odds with Carr-Saunders.

The English demographer did not find common patterns in the demographic development of Western Europe and Russia, considering the Russian conditions as "Asian." He did not see in Russia's demographic situation of the 1920s a stage of demographic development similar to the one Western Europe was in.

Kulischer, on the contrary, in his article continues to hold fast to the universal scheme of demographic development, firmly rejecting the English demographer's distinction: "The opposition of 'Europe' and 'Asia' here is hardly more correct than in all such cases." Speaking about the demographic prospects of Russia, Kulischer presciently writes: "This stage [of rapid growth in Russia] should continue until the moment when the fall in fertility begins to catch up with the drop in mortality. The whole point is to reach this moment without catastrophic extermination of human lives. Left to itself, this moment should come sooner or later." Unfortunately, a year later the demographic catastrophe would arrive. In 1932-1933, famine would hit all the grain-producing regions of the USSR, and disaster would strike Kazakhstan even sooner.

At the same time, Kulischer shares Carr-Saunders' negative assessment of the statements by Moscow propagandists about the rapid population growth inherent in the Soviet system. According to their interpretation of the works of Karl Marx, decreasing fertility is the destiny of only capitalist societies, whereas under socialism the population must grow rapidly. It is well known that this "socialist population law" would continue to hinder the development of Soviet demography for many decades (see, for example, [Volkov, 2014: 521]). Kulischer, however, with his great ability to foresee the ideological turns in Bolshevik Russia, showed readers of *Poslednie novosti* the failure of this pseudo-scientific dogma even at the time when it had started to be a part of the canon of Soviet propagandists.

Kulischer's view of Russia's demography provoked a sharp rejection by opponents of *Poslednie novosti*, who were competing with the newspaper for influence over the minds of Russian post-revolutionary émigrés. Thus, when attacking him, another Paris newspaper, *Vozrozhdenie* [The Revival], mockingly mentioned the demographic views of the scholar: "It was said that Kulischer is a former professor of wartime who, instead of the five-year program, completed accelerated scientific courses in two years. Biographers argued, in addition, that Kulischer is a former friend of Spengler, the grandson of Feuerbach and adopted son of Nietzsche. They also talked about him as if his scientific works on childbearing in Russia were extremely well known in the large university centers of [Ukrainian provincial towns] Konotop, Vinnitsa, and Belaya Tserkov" [Psevdonimy ... 2016: 309].

Pavel Milyukov, a well-known Russian historian and politician who denied as a matter of principle any "special paths" of Russia's development [Doykov 2004: 211], seems to have sympathized with Kulischer's demographic views. This is confirmed by the appearance in *Poslednie novosti*, whose content was completely controlled by Milyukov, less than a year after his second article, of a new publication by Kulischer devoted to the same topic [Junius (Kulischer) 1932]. This article is of particular interest in that it reflects the period of rapidly developing views on population and the tools of demographic research in use in the late 1920s and early 1930s.

"It seems that demographic science is entering a new stage," Kulischer wrote in the new article. At the same time, he mentions the studies of two German demographers, Robert Kuczynski and Ernst Kahn. Here, of course, the contemporary reader will ask: why, alongside Kuczynski, the author of well-known classical works, does there appear the name of Kahn, a name which even today is unfamiliar to most specialists? Recall that in 1928 Kuczynski published in English the first volume of his fundamental work *The Balance of Births and Deaths*, devoted to the countries of Western and Northern Europe [Kuczynski 1928]. It was this volume that Kulischer had in mind when he first mentioned Kuczynski in his previous article. However, the second volume of the Kuczynski study, devoted to the countries of Eastern and Southern Europe [Kuczynski 1931], was published in the US only a few months before the writing of Kulischer's third article, and quite probably had not yet reached him in Paris. Hence, Kulischer did not have the opportunity to use the indicators calculated by Kuczynski (the total fertility rate and the net reproduction rate) to compare the situation in Russia with other countries of the world using this system of indicators.

At the same time, between the appearance of the first and second volumes of Kuczynski's study, in 1930 Kahn's book, *The International Birth Strike* [Kahn 1930], was published. Its author was a socially oriented economist. This was reflected in the subtitle of his book on fertility: *Extent, Causes, Effects, Countermeasures*. Many years later, the leading Polish demographer Edward Rosset wrote that in this book Kahn "though not a demographer, made several statements whose aptness can be fully appreciated only now" [Rosset 1964: 282].

In his book, Kahn gave his estimates of a fertility indicator for many countries in the world, including Russia, which attracted the attention of contemporaries (see, for example, [Correspondent 1931]). With these Kulischer would acquaint his readers. However, Kahn, in his book, based his calculations on the number of births per one marriage for a given calendar period. The fact that this indicator underestimates fertility, as it does not take into account the factor of marriage dissolution, would be proved by Kuczynski only five years after the publication of Kahn's book [Kuczynski 1935: 38].

However, Kulischer in his article shows some caution, noting at the end that the aforementioned "methods of calculating ... raise objections, also not without foundation." It is worthwhile to quote Kahn himself: "At the moment it seems that everything indicates a decrease in the population. However, no one can know how big this decrease will get and how long it will last, because the habits and views of people are as difficult to foresee as the influence of the development of medicine, which is so crucial for the prospects of human longevity; this must always be emphasized"[Kahn 1930: 208]. Indeed, the baby boom in Western countries, as well as the consequences of the discovery of antibiotics for all countries of the world, turned out to be unforeseen.

At the same time, Kulischer's forecast, made in his third article, came true. After all, in essence, the main dispute was with the opinion that there is "unlimited human material" in Russia, which Stalin "throws into the furnaces of his 'socialist' factories: of such stuff, the Russian people, there will always be enough." Objecting to those committing this error, an error shared by the Bolshevik leader himself, Kulischer wrote: "[T]he huge amount of 'labor' that is – or rather, was – at Stalin's disposal is a purely temporary phenomenon." And again he was right!

Acquaintance with the three articles published by Alexander Kulischer shows that he was almost the first to clearly understand and consistently apply the general scheme known today as the theory of "demographic transition" or "demographic revolution" to interpret both contemporary and future trends in the reproduction of the population. It was precisely on the basis of this concept that he was able to accurately predict the demographic future of Russia. The development of its population in the twentieth century did indeed follow the path of modernization foreseen in the late 1920s and early 1930s by this remarkable scholar (see, for example, [Demographic Modernization ... 2006]).

In the articles republished below, all notes, including thoses within texts, have been prepared by me. Copies of the articles were made available through the efforts of my friend Professor Shaul Stampfer, for which I am very grateful. The photo of Alexander Kulischer was provided by the archive of the Jabotinsky Institute in Israel, to whose staff members I am also deeply grateful.

EXTINCTION

Junius [Alexander Kulischer]

Poslednie novosti [The Latest News] (Paris). 1928. 8 February: 2.

I have had occasion to write about the Geneva Population Conference (see [Junius (Kulischer) 1927]), at which were presented exhaustive factual data on the development of this "question of all question" in recent years, and a sharp dispute arose between advocates of a further decline in fertility, fearful of global overpopulation, and advocates of an increase in fertility, who feared the extinction of the most cultivated races and peoples. The expression "advocates" of one or the other position needs to be understood, of course, very conditionally. The task of the scholars arguing in Geneva was primarily to put the question correctly and to determine the direction of actually occurring natural processes that are very little amenable to change through the influence of a particular propaganda or policy. But, of course, arguments about the "desirability" of such complex and profound phenomena can only be made after first clearly understanding what they actually are. Unfortunately, on precisely this question the enormous scientific work done in particular of late remains almost completely unknown even to the educated public.

A recent sensation in this regard took place last year in England, where fertility fell to a "record" low of 16 per thousand population. It should be noted that such a figure for a single year, and any conclusions about an impending population decrease based on it, are in fact of very little interest. Statistics of fertility and mortality have their own "tricks". Until recently, in England there was a significant excess of fertility over mortality with a very low level of both: 18 and 12 per thousand population. Knowledgeable people pointed out that the extremely low mortality rate was not only due to the tremendous successes of hygiene, especially in the area of childcare, but was to some extent fictitious, since when fertility falls, the percentage in the population of young children subject to high mortality decreases; when the current generation of young adults and middle-aged adults becomes old and dies, the overall mortality rate will increase and, probably, the number of English people will be almost unchanging, as happened long ago with the French population. But the opposite is also possible: an actual decrease in mortality among persons who

have not yet reached puberty or who have already gone through it sometimes leads to a fictitiously low fertility rate.

Thus, all the arguments that the English population in some particular year "will begin to decrease" and so forth do not have much value. It is not the sensational figure of one year that is important, but the development over a number of years. And this development shows that the population of England, as well as of a number of other countries – Sweden, Switzerland, Germany and, in all probability, the United States of America – is clearly transitioning to that stable state in which, until the World War, only the population of France found itself.

Here it is necessary to make an important caveat. The issue is one of a stability based on low fertility and low mortality: it is this which constitutes the novelty of the phenomenon in the history of humankind. Generally speaking, a steady state of population size was an ordinary, one might think normal state of humankind throughout vast epochs of history. Peoples did not increase numerically, just as normally the total number of animals of one kind or another does not increase – and for the same reasons. At the end of the 18th century, Adam Smith talked about his observations of the Scottish Highlanders of the time, who normally had ten children in their family, of whom just as normally only two survived [Smith 1981: 97]. Later, a similar "normal" situation could be observed in Russia, and now many parts of India, China, etc. have not gone far from it. In India, a girl who does not marry after reaching puberty brings general contempt for her family and violent religious punishments to her ancestors in the other world. In some provinces, a quarter of the children formally marry at the age of 5-10 years. And, indeed, fertility in India is reaching 40 per thousand population, but mortality too is now reaching 36 per thousand: 1/4 of the children die before reaching the age of one year. Until 1890, the population of India did not increase at all: infant mortality, epidemics and famine maintained an "equilibrium." In such an "equilibrium", interrupted only from time to time by epochs of exceptional economic progress and population growth, or, it must be added, by epochs of cruel population reduction through famines and wars, such as the era of the Thirty Years' War, etc., humanity too existed, in those blissful times when no one was afraid of "extinction" and "a weakening of the maternal instinct."

If there is currently strong population growth in India – causing talk about "overpopulation" – it is occurring not at all due to even greater gains in the fertility of Hindus, but solely to a certain reduction in mortality, at least to the cessation of famine as a "normal" periodic phenomenon. The tremendous growth of the population of European countries in the 19th century was due not to an increase in fertility, but solely to a decrease in mortality. According to the conclusions of a speaker at the Geneva conference, the Dutch professor Methorst, who studied the statistics of 50 countries¹, large population growth should be regarded, in essence, as a transitional period, when the successes of hygiene and general culture have already led to a significant reduction in mortality, but there has not yet begun the decrease in fertility which, as the experience of other countries shows, follows on the heels of these successes. This, in particular, was true precisely in England, where the history of the population was particularly well studied: the growth of its population at the end

¹The publication of the preliminary version of this report details data for 1919-1923 for 55 countries of the world [Methorst 1927b: 123-125]. However, in the text of the report, which later appeared in the volume of the Geneva conference proceedings, the main attention was paid to the Netherlands, and it only talks about data from 35 countries during the same period [Methorst 1927a: 172], which is probably a typo.

of the eighteenth and nineteenth centuries was the result of a consistent reduction in mortality, despite the decline in fertility which had already begun in the 1880s. In Germany, the same process began later. At the beginning of the twentieth century, it experienced a period of rapid growth, and the Germans boasted of their "vital" strength in comparison with the already "degenerate" French and "degenerating" Englishmen and on this basis demanded world hegemony, as a "fresh and strong" people. But after the war², German fertility too quickly descended to the level of the French, "stabilization" figure. Russia is still at a rather early stage of this process. The acceleration of the growth of the Russian population in the late nineteenth and early twentieth centuries is also explained entirely by a decrease in the mortality, which fell in the second half of the 19th century from 37 to 31 per thousand population. And this last figure is still terrible from the Western European point of view. But the decrease also resulted in huge record growths in the population (17, and in some years 22 per thousand population) due to the still very high fertility rate. Undoubtedly, Russia will see a further reduction in mortality, but there is no reason to expect that it will also be spared a decrease in fertility.

The fact is that the maternal instinct, which according to Sutherland's theory (mentioned in the article of Mr. Dioneo in *Poslednie novosti* on this question; see [Dioneo (Shklovsky), 1928] and [Sutherland 1898]) is the source of all morality – this maternal instinct must by no means be confused with the instinct of procreation, and even less with the instinct of maximum procreation. Otherwise we would have to regard the rabbit as a model of maternal love and every kind of morality, and as part of humankind – the above-mentioned Indian mothers or Russian peasant women of old, always pregnant and always dreaming that "God would take" [to Haven] some of their children. Strengthening the "maternal instinct" in the sense of caring for the welfare of children – above all for the preservation of their lives – is precisely a phenomenon of modern times: it leads to a reduction of child mortality, but the same "maternal" and even "parental" instinct is one of the incentives to reduce fertility. Among French peasants, the "two children" system is motivated directly by the desire to leave undivided land to the son – but in general one of the reasons for reducing childbearing is the desire to provide the means for raising the existing children. Along with this, of course, there are purely selfish motives that lead to an increase in the number of people not getting married or having children – not because of an increase in selfishness in the population as such, but because of greater prudence and caution in assuming certain obligations.

Whether this phenomenon is "for better or for worse", I will not decide. In France, the lack of population growth is treated as a danger mainly from the point of view of the country's military defense. This motif naturally plays a lesser role in England, where supporters of the stabilizing or shrinking of the population perceive it as the only way out of the economic difficulties resulting from the fact that Britain has lost its commercial monopoly and can no longer be continuously conquering new markets to feed a large number of its people by means of industrial production for export.

Generally, proponents of "birth control" usually argue that after plowing the best fields in all parts of the world, population growth should slow down: if this is not done by a reduction in

² Here and below, the First World War and, accordingly, the period preceding it when referring to pre-war time are meant.

fertility, it will be done by famine, wars, etc. Representatives of the opposite view object that, for now, stabilization of the population by a reduction in fertility is occurring only among some peoples, and, what is more, among the richest and most socially and culturally advanced of them. If these "bourgeois" peoples really managed to achieve "equilibrium" on the basis of a high level of well-being, then they would only cause greater envy among the rapidly multiplying and miserable "proletarians". These latter peoples will increasingly seek to enter the protected paradise of rich countries, and prohibitions of immigration, such as those adopted by America³, will lead only to violent and bloody conflicts.

As can be seen, it is indeed a very complex issue, in which one must above all beware of simplistic solutions.

THE POPULATION CYCLE

Junius [Alexander Kulischer]

Poslednie novosti [The Latest News] (Paris). 1931. 17 July: 2.

The just-published data of the population census in England fully confirm the projections that follow from the cycle of population evolution about which I have repeatedly had to speak in these columns. Over ten years, starting in 1921, the population of England and Wales has increased from 37,886,699 to 39,947,931. It should be noted that this increase is entirely thanks to England, since in Wales, on the contrary, there has been a slight decrease due to resettlement in England. The same decrease over this period took place in Scotland and Ireland. Of the entire territory of the British Isles, the population is growing only in England, in the true sense, that is of course in English cities. According to Harold Cox⁴, this growth has now reached such proportions that further continuation would mean the transformation of the whole country into some kind of a very unaesthetic urban suburb. The all-powerful growth of the city continues steadily, despite industrial stagnation, despite unemployment. It continues, from a certain point of view, even more intensively than before, when both a significant part of the population growth of the country was going overseas and when the mining towns of South Wales were also attracting people. Now it all has ended. People are heading only to the city and, moreover, to ever larger centers, which grow by occupying the surrounding area, simply physically liquidating villages and towns. There is no need to expect a change in this trend. It can be weakened only by a decrease in population growth as a whole. This, in part, has already begun.

Now in England the population of 37 million has increased over ten years by two million people; in the 1870s, the population of 26 million increased over the same period by three million. In other words, not only has there been a significant decrease in the population's reproduction – and in relative growth – but this decrease has led to the fact that absolute growth has also decreased. What's more, such growth too could continue for another ten years, but then, according to the calculations of the statistical office, there should be a real reduction in the population. The current fertility rate is only 16 per thousand, instead of the pre-war 26. True, mortality has also decreased,

³ The restrictive US immigration laws of 1921 and 1924.

⁴ His sharp criticism of the process of urbanization is most fully given in: [Cox 1922: 46-66].

and this explains the continuing growth. But this reduction in mortality is partly artificial, due to the relatively large percentage of adults in the population compared to young children and the elderly. When the present generation of English adults begins to die out, it will not be replaced by the current children, since there are not enough of the latter for this. These predictions cannot claim full accuracy, since it is not known how much medical progress might further increase average human life expectancy. But based on the current trend, it is obviously leading to a steady and even slightly diminishing population in England, as in other countries of northwestern Europe. In the opinion of the American statistician Kuczynski, who recently published a major study on this issue (see [Kuczynski 1928])⁵, the tendency to "extinction" is particularly strong in England and Germany, in contrast to France, where population growth stopped long before the war, but where there is no such "downward" trend as in the two countries mentioned, where this growth is still continuing. By the same calculations, this trend can also be seen in the United States, although the trend is not to "extinction", but to stabilization. Significant growth is still occurring in Italy, which remains on the "crest" of the cycle: fertility and mortality are there decreasing in parallel, without changing the result in terms of growth. As is known, Mussolini never ceases to declare that Italy should "expand or explode", which does not prevent him from pursuing a policy of further population increase⁶, declaring war on the trend to decreasing fertility, obviously with the goal of accumulating forces for the planned "explosion."

The situation is quite different in the east of Europe: in Poland, in Romania and, in particular, in Russia. As noted by Prof. Carr-Saunders, in an article on the results of the English census (see [Carr-Saunders, 1931]), the Soviet authorities have their own way of following the data of world statistics and drawing conclusions from them. Recently an English professor had occasion to listen to a radio lecture from Moscow in the area of his own field of science. "Marxist" sociologists explained that the "magnificent" growth of the population in Russia, the "magnificent" fertility of Russian women, testifies to the contentment of the population, while the fall in the fertility rate in the capitalist countries testifies to the disappearance of the vital impulse in the population, due to the bleakness of the bourgeois system.

According to Carr-Saunders, the "life force" of the Soviet population means nothing other than Asian, in contrast to European, conditions for the existence and reproduction of the population. Asian fertility does not mean, of course, a rapid increase, since it is accompanied by "Asian" mortality, as chronic as it is "catastrophic". But, with the slightest decrease in this mortality, a tremendous increase is obtained.

The opposition of "Europe" and "Asia" here is hardly more correct than in all such cases. There was a time when the most "real" Europe also had a generally stable population size, with both high fertility and high mortality. So, in France the population was, on average, stationary from the 14th to the 17th century, although there were then "normal" families with not ten, but two children. Those who were not carried away by diseases were eliminated from time to time by famine, plague and war, more or less as still occurs in China. The decrease in mortality starting in the second half of the 18th century created large population growth in one country after another.

⁵ Robert Kuczynski was a German scholar, but the majority of his demographic works are published in English, including the one, printed in the USA, to which Alexander Kulischer refers.

⁶ On pro-natalist politics in fascist Italy, see, for example, [Ipsen 1996].

The pioneer country in this respect, as well as with respect to all sorts of "modernization" in general, was the same – England, whose population growth was considered record-breaking. Marx, whom the Moscow demographers seem to have poorly read, even argued that this "life force" is the creation of capitalism, one of the capitalist "atrocities." Through child labor etc. capitalism encourages fertility and purposely creates for itself the proletariat which it, capitalism, needs. Capitalism itself sees to it that there is always an excess of human material, so that it can exploit it as much as it likes. By analogy, an orthodox Marxist, in essence, would have to accuse the Soviet authorities of creating the ruthlessly exploited human material they need for "industrialization."

However, there is no objective basis for such an accusation, since Marx's theory on this question was generally mistaken. In fact, strong population growth in the era of "burgeoning capitalism" is a consequence not of high fertility as such, but of a drop in mortality alongside fertility that is no higher than before and even beginning to fall slightly. That's exactly what is happening now in the "modernizing" Eastern European, South American, some Asian and African countries. The combination of medical care and hygiene, already beginning to show its effects, with a very fresh and naïve population, overwhelmingly rural in its customs and psychology, is creating such an increase in the population as to inspire feelings of ridiculous "national pride" and cause fears among its neighbors. The peculiarity of Russia lies in the fact that its significant population growth has been going on continuously since the first half of the 18th century, mainly due to the colonization of Russian spaces, which, for the most part, has replaced catastrophic extermination of the population or emigration.

Now, however, Russia too is in the midst of the process of increasing growth, due to a drop in mortality with a still high, although starting to fall, fertility rate: a fertility rate of 42 per thousand population (instead of the pre-war 45)⁷, together with mortality that has fallen to 18 per thousand population, is giving "record" growth rates.

This stage should continue until the moment when the fall in fertility begins to catch up with the drop in mortality. The whole point is to reach this moment without catastrophic extermination of human lives. Left to itself, this moment should come sooner or later – simply by virtue of the fact of resettlement in cities, where population growth heads and where it undergoes a certain "sterilization"; urban fertility is always below the rural level, and it is an almost normal situation when the usual development of the urban population by itself leads to a deficit, so that the increase in the urban population is obtained only because this deficit is more than compensated for by resettlement in cities. But the very fact of the urbanization of the population, i.e. an increase in the percentage of the urban population, should sooner or later lead to a reduction in the overall increase. For a long time the fall in relative growth does not mean a fall in absolute growth, but then the latter too begins to fall, and finally a new steady state will be reached based on low fertility and mortality. It can be assumed that in the future any prolongation of human life will cause a corresponding decrease in fertility. This process, however, is the process of "quality replacing quantity". And that is why the advanced peoples of Europe, who have reached the end of the cycle,

⁷ The figures given for the European part of the USSR for 1928 correspond to those reproduced later, when A.M. Kulischer was no longer alive, in the book of his brother E.M. Kulischer [Kulischer 1948: 80]. A.M. Kulischer was the actual co-author of this monograph, which is again confirmed by the appearance in his publication of these figures long before the publication of the mentioned book.

have no reason to fear the "vital force" of peoples, who, though more backward, are ultimately following the same path.

THE FUTURE OF HUMANKIND

Junius [Alexander Kulischer]

Poslednie novosti [The Latest News] (Paris). 1932. 2 April: 3.

It is necessary to return to the issue of population to which I have devoted so many articles. This issue, on which the future of modern culture ultimately depends, is undergoing tremendous changes before our very eyes. What was a hypothesis is becoming an established fact. On the other hand, "obvious" facts turn out to be the results of inaccurate statistical methods, and the use of more accurate methods opens up prospects of a completely different kind.

There was a time when the halt of population growth in France was considered an exception, indicating a special "degeneration" of the French people in view of the "stagnation" caused by the French petty-bourgeois spirit. The French reactionaries saw in this fact evidence of the harmful consequences of the revolution, which destroyed the "family" principle. They were echoed by reactionaries and militarists of all countries, including Trotsky. This educated writer and "revolutionary" figure never went beyond his "pre-war" knowledge on this issue, and continues to point to the halt to the growth of the population in France as the sort of fact after which this "stalled" people with its "stalled" regime is not even worth discussing.

As for the rest of humanity, it was taken as an irrefutable position that it was likely to become overpopulated. Military philosophers and philosophizing military men treated with great contempt those who pointed to the irrationality of war: what has reason got to do with it, since peoples are destined to "suffocate" due to the lack of space necessary for continuously emerging "surpluses"? And since these "surpluses" are formed everywhere, the stern representatives of war-mongering always have a choice: either to point out the existence of "surpluses" in a given country and to demand an "inevitable" war, or to warn against any urge of this people to reduce the production of their "surpluses", pointing to the fact that this people will be flooded with the "surpluses" continuously being produced by their neighbors.

After the war one began to notice that some other nations, besides the French, are beginning to show a tendency to the same "stagnation" and are more interested in ensuring the possibility of a decent existence for their offspring than in multiplying the number of this offspring. The British, the Swedes, the Swiss, even, surprisingly, the Germans, have begun "degenerating" with great rapidity. Then the nationally minded researchers came to the following conclusion. All northern Europeans, all the most "advanced" nations, are headed gradually towards "stagnation". These nations have clearly lost the biological "will to live." So much the worse for them. With newer nations, it is different. First, the Italians. Italy, according to Mussolini, must "either explode or expand." The following year, the figures for the falling birth rate began to indicate that the Italian people seemed to prefer some third way out. Do not dare, Mussolini ordered. How could you want to expand if you do not increase the overpopulation that I so eloquently complain about?

And, in any case, if the whole of Western Europe "degenerates," so much the worse for it. This means that it will be flooded by a terrible wave from the east. There, among the Slavic peoples, in Poland and already especially in Russia, there is a monstrous growth of the population. Europe, beware – Stalin has a surplus of human material! Stalin himself is sure of this; also sure are those who, having "reeducated themselves" in exile, have discovered the great wisdom of this leader who so "sternly" gives no second thought to the human material he throws into the furnaces of his "socialist" factories: of such stuff, the Russian people, there will always be enough.

It seems that demographic science is entering a new stage. The research of Kuczynski (of whom I have already had occasion to speak), Ernst Kahn (see [Kahn 1930]), et al. put the issue in a completely new perspective. If these scholars are to be believed, then in one or two decades, perhaps even earlier, it will be necessary to stop all talk about a surplus of human material, about a "stern" need to exploit this material, which stern rulers "use". It will be necessary to stop the "frightening" of some peoples with the "surpluses" of others and proceed to an extremely considerate treatment, devoid of all severity, of this human material, which, apparently, no longer intends to tolerate such sternness, to let itself be "used" by "strong-willed centers", and will respond to any outburst of "strong-willed impulses" with a rapid reduction of its own "reproduction".

The new school in demography points first of all to the extreme inaccuracy of methods that have been usual until recently, as if directly intended to create misconceptions about the actual development of the population.

Let's take a simple example. If we compare the number of births and the number of deaths in Germany, we get an excess of fertility – a "natural increase" of about 400,000 people per year, about 5 per thousand. This is less than before the war, when there were more than 800,000, – about 14 per thousand. And nationally minded circles are extremely unhappy with this, as the reproduction of the military force necessary to conquer new "space" is not going fast enough. But still the population increases – in a Germany already overpopulated as it is. And since other nations do not want to give the Germans the necessary "space," what solution remains other than Hitler?

But let's look at this question from a different point of view. If all the children born were to survive and, in turn, produce offspring, then two children per marriage would be enough to maintain the population at the same level, and with more than two children, there would have to be an increase in the population. In reality, of course, it is not so, for many die in childhood and many do not get married at all. So, for the reproduction of the same number of people – not to mention its increase – it is necessary that each married couple, on average, produce more than two children. This minimum for Germany – bearing in mind the figures of child mortality and singlehood – can be considered to be three children, on average, for each family. In reality, this number is now less than two (1.9)⁸. In other words, the German population is actually rapidly shrinking.

The riddle of the contradiction of these figures is that the German population grew quite rapidly up to the war (as a result of the rapid decline in mortality, despite a slight fall in fertility –

⁸ The figure given here is according to calculations by Ernst Kahn [1930: 12].

in the 20th century, before the war, the birth rate per married couple was 4). During and after the war, there was an extremely rapid fall in fertility. As a result, the number of young people of marital and "reproductive" age in the German population is disproportionately large, compared with children and the elderly. Thus, mortality has now been artificially decreased, and fertility (for the entire population) artificially increased, since the percentage of people marrying is very large. When today's young people grow old, and their place is occupied by today's far less numerous adolescents, then mortality will increase and fertility will fall, as has already occurred in England, where population growth has already "formally" stopped.

In France, since population growth stopped even before the war, the percentage of the elderly is much larger, and therefore French mortality seems higher than in Germany. This difference (18 per thousand deaths in France, instead of 14 in Germany) is explained, as even German statisticians now admit, only by the high percentage of the elderly in the French population, and not at all by allegedly backward sanitary conditions. In fact, the average life expectancy of a Frenchman is higher than that of a German, and infant mortality in France is lower than in Germany. The number of children per family in France is slightly higher. The fact is that the French population began long ago adapting to the conditions of a new culture, while Germany is only now scurrying to adapt. In France, one can expect a very slow decline in the population, slowed by migration; in Germany, this reduction will occur with great rapidity.

But what about the "Slavic flood" – in particular, the "unlimited human material" in Russia?

It is true that in Eastern European countries the decline in fertility before the war was almost imperceptible, although the drop in mortality was rather rapid. The "adaptation" is occurring that much faster today. Again, the general figures of fertility and mortality are misleading. If these figures are used, then the rate of population growth in Russia is now a record 24 per thousand (fertility: 42, against mortality: 18)⁹. But these figures are again explained by the huge percentage of young people of marriage and "reproductive" age. In view of this, fertility for the entire population in Russia dropped from just 45 per thousand before the war to 42. In reality, the decrease in the fertility of the population is incomparably more significant. The average number of children per marriage in Russia is now only three (instead of 5.5 pre-war)¹⁰, and this figure has been steadily falling from year to year. According to E. Kahn, referring to the higher child mortality figure in Russia than in Germany, one should raise the question of whether or not a population deficit in Russia too is effectively already beginning. In any case, the huge amount of "labor" that is – or rather, was – at Stalin's disposal is a purely temporary phenomenon.

Let us confine ourselves for now to presenting these data. The newest methods of estimating population development, by means of which these conclusions are obtained, also raise objections, also not without foundation. But not to reckon with these methods – with their great

⁹ See note 7.

¹⁰ Here the author proceeds from the figures in the book of Ernst Kahn [1930: 64-65], where, however, the figure for 1900 is 5.4. Later Robert Kuczynski [1935: 38], using the example of Ukraine, criticized these estimates and showed that the value of the indicator for 1929 should be evaluated higher if we take into account the marriage dissolution: 3.6 births per marriage, whereas Kahn's calculation gave only 3.1 births. Note that, in the absence of data at his disposal for 1929, Kahn took the indicator for the whole of the USSR to be equal to this underestimated value for Ukraine for this year – 3.1 births [Kahn 1930: 65].

clarity, strength and certainty of the results obtained – is obviously impossible. To an analysis of these results from a more general point of view, we will turn some other time¹¹.

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¹¹The continuation of this series of articles was not found in the available issues of *Poslednie novosti*; it may not exist.

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