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## ANALYSIS OF THE BIRTH RATE AND MORTALITY OF THE POPULATION OF RUSSIA IN 2019-2021

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The article highlights the problems of the high natural decline in the population of the Russian Federation observed since the beginning of 2019 due to the increased mortality and the decline in the birth rate of the population. It has been shown that the mortality caused by the coronavirus infection COVID-19 only aggravated the previously existing trend of reducing the population of Russia, but was not its root cause. It is concluded that the country is experiencing dangerous demographic phenomena, the socio-economic consequences of which may have a serious negative impact on sustainable development in the not-too-distant future. The demographic interests of the state and society, according to the authors, are in the formation of a new type of population reproduction, the main characteristic features of which should be: overcoming depopulation; deliberately regulated fertility aimed at complete replacement of generations; steadily decreasing mortality and increasing life expectancy; progressive age-sex structure of the population; optimal internal and external migration processes; strengthening the family as a social institution. To substantiate the conclusion about the historical conditionality of the deterioration of the country's demographic situation, the indicators of population dynamics over the past decades are analyzed, the negative impact of the demographic crisis in Russia on the country's security is shown, and an assessment of government measures to improve the demographic situation is given.

**Key words:** natural movement of the population of Russia, an increase in mortality, a decrease in the birth rate, demographic policy, the labor market.

**[А.В. Джиоев, Н.Г. Каберты Анализ рождаемости и смертности населения России в 2019-2021 гг.]**

Освещаются проблемы, наблюдаемой с начала 2019 г. высокой естественной убыли населения Российской Федерации по причинам возросшей смертности и падения рождаемости населения. Показано, что смертность, вызванная коронавирусной инфекцией COVID-19 лишь усугубила сложившуюся ранее тенденцию сокращения населения России, но не явилось ее первопричиной. Сделан вывод, что страна переживает опасные демографические явления, социально-экономические последствия которых могут оказать серьезные отрицательное воздействие на устойчивое развитие уже в недалеком в будущем. Демографические интересы государства и общества, по мнению авторов, состоят в формировании нового типа воспроизводства населения, основными характерными чертами которого должны стать: преодоление депопуляции; сознательно регулируемая рождаемость, направленная на полное замещение поколений; устойчиво снижающаяся смертность и увеличение продолжительности жизни; прогрессивная возрастно-половая структура населения; оптимальные внутренние и внешние миграционные процессы; укрепление семьи как социального института. Для обоснования вывода об исторической обусловленности ухудшения демографической ситуации страны проанализированы показатели динамики численности населения за последние десятилетия, показано негативное влияние демографического кризиса России на безопасность страны и дана оценка государственных мер улучшения демографической ситуации.

**Ключевые слова:** естественное движение населения России, рост смертности, снижение рождаемости, демографическая политика, рынок труда.

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In Russia, 2020 was a demographically shocking year due to the high mortality rate [5], which experts initially associated with the COVID-19 coronavirus infection pandemic [4]. In the first half of 2021, the number of deaths from coronavirus infection COVID-19 exceeded the number of deaths from external causes; more than 90% of those who died from certain infectious and parasitic diseases; 78% of those who died from external causes did not reach the age of 65, among those who died from COVID-19 - 28% [14]. In January-July 2021, according to the Rosstat estimates, 204.2 thousand deaths were registered with an established diagnosis of coronavirus infection COVID-19. However, the population of Russia began to decline since 2020 [11], and this year it has become a record for the last 16 years: in the period from January to August 2021, 1.1 million Russians died, which is 153.5 thousand people (or 16%) more than in 2020; population decline in Russia for seven months of 2021 increased by 62% [9]. A catastrophic population decline occurs against the background of a fall in the birth rate [7], which can not only act as a constraining factor for the country's sustainable development in the first half of the 21st century [10], but also lead to serious security problems for the country. So, S.V. Soboleva, N.E. Smirnova and O.V. Chudaeva write that "the frequency of infertile marriages in Russia is 15–20%. According to the WHO, the indicator of 15% is critical, in which case infertility can be considered as a factor that significantly affects the demographic indicators in the country and is a serious state problem" [12].

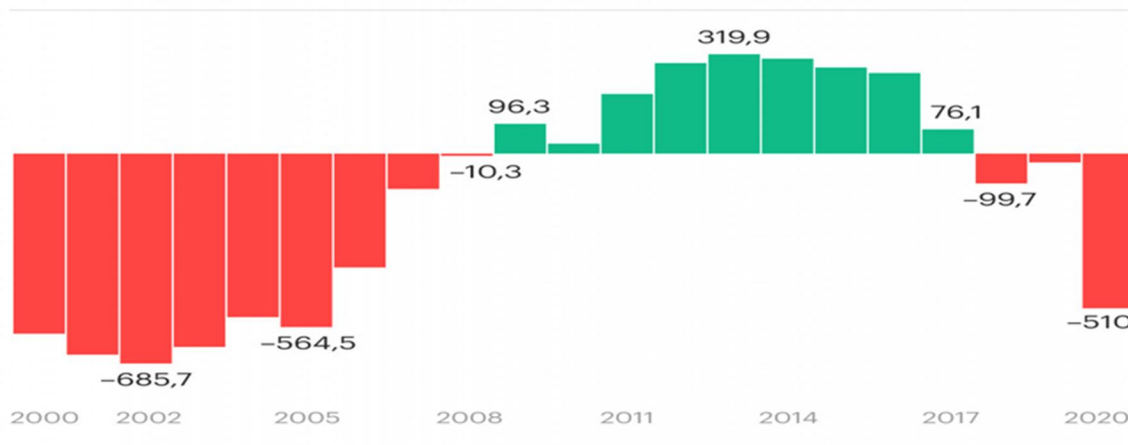
From the official information of Rosstat, it follows that the population in the Russian Federation in 2020 decreased by 510.5 thousand people (Table 1, Fig. 1), and in the first half of 2021, the natural decline in the population of Russia, according to Rosstat data, amounted to another 512, 5 thousand people. These data are several times higher than the mortality data due to the incidence of coronavirus infection COVID-19 [13].

**Table 1. Dynamics of the population of Russia in 2017-2021**

Year	Population of Russia	Annual increase (+), decrease (–)
01.01.2017	146 804,4 people	
01.01.2018	146 880,4 people	+76 people
01.01.2019	146 780,7 people	-99,7 people
01.01.2020	146 748,6 people	-32,1 people
01.01.2021	146 238,2 people	-510,4 people

*Compiled by the author based on: For the first time in 15 years, the population of the Russian Federation has decreased by more than 0.5 million. Interfax. URL: <https://www.interfax.ru/russia/748286>*

Over the past 20 years, such a high natural population decline was recorded twice in 2002, when the population decreased by 685.7 million, and in 2005, when the number of Russians decreased by 564.5 million (Fig. 1).



**Fig. 1. Population growth and decline in Russia in 2000-2020, thousand people**  
 Source: Rosstat

However, if such a sharp decrease in the population by 1.023 million people for the period 01.01. caused not by a new viral incidence, but by demographic factors proper, then the priority national projects launched since the beginning of 2006 aimed at strengthening the health, living conditions, childbearing and education of Russians, which gave in the period of 2013-2015 the greatest effects in the form of an increase in average duration and an excess of fertility over mortality, based on the results of implementation, may turn out to be ineffective. This is actually stated by the Ministry of Economic Development of Russia, according to its forecasts, the population of Russia by 2024 will decrease by 1.7 million people relative to 2020 due to a decrease in the number of women entering reproductive age.

The analysis of Rosstat data confirms the high probability of implementation of the forecasts of the Ministry of Economic Development of Russia. As can be seen from Fig. 2, the monthly number of deaths since the beginning of 2020 significantly exceeds the number of births. These data can be supplemented with statistics on the number of registered children born in Russia in 2019-2021: for example, in July 2019, 140.7 thousand children were born, in July 2020 - 130.7 thousand children, and this year - only 124,7 thousand children.

Since 2019, the President has set priority goals for strategic development until 2024, to achieve which national projects, state federal and regional programs are aimed. Will Russia be able to implement them against the background of a shrinking population, especially young and middle age? And who will be affected by the effects of the state demographic policy if such a high population decline persists, which can be considered as a threat to the country's security.

The answers to these questions lie, among other things, in the past, since the general demographic situation reflects not only the population size, but also the prevailing trends in the ratio of generations and the features of the demographic transition [6].

An analysis of data on the demographic situation in the 1990s shows the first signs of a demographic catastrophe in Russia, by which we mean the long-term preservation of the situation of excess of mortality over birth rate. In world demography, this situation, which had finally developed in Russia by 2005, was called the "Russian cross". The situation was aggravated by the fact that life expectancy fell sharply, especially among the male population. Thus, the average man in 2005 did not live up to retirement: the average life expectancy for men was 59.5 years. According to A. Blum and S. Zakharov, "the unfavorable demographic situation of the first half of the 90s, which is often seen as a manifestation of an extraordinary demographic crisis, is, of course, connected with the general crisis situation in the country. But to an even greater extent, it is predetermined by the grave consequences of the social catastrophes of the 20th century" [2].

Therefore, the nomination of social national projects by the President of the Russian Federation V. Putin in 2005 and the emphasis on demography is not an accident. The country simply did not have a chance for safe economic development due to the decline in the number of the working population [1].

During the period 2005-2018, the implementation of an active demographic policy in Russia managed to achieve high indicators:

- firstly, the life expectancy of men in Russia has increased to 72.5 years (this is 14 years more than in 2004), the life expectancy of women in Russia has increased to 78.5 years;
- secondly, since 2009, there has been a steady increase in the birth rate of the population in most regions of Russia;
- finally, thirdly, the humility of the population began to fall.

It should be noted that the voluntary annexation of Crimea to Russia increased the population of the Russian Federation by almost 2.5 million people.

However, since 2018, the demographic situation has become unstable again.

Thus, we can conclude that the coronavirus infection aggravated, but did not cause, the increase in the decline in the population of Russia. Although there is no doubt that the following factors of an indirect order of the spread of coronavirus infection had a colossal impact on the increase in mortality:

Firstly, the self-isolation regime and the loss of jobs by millions of people led to a deterioration in the material situation of the population and an increase in poverty to 19.9 million people, which is 13.5% of the total population of the country;

Secondly, the flow of labor migrants dropped sharply, which supported the indicators of the population of Russia.

Nevertheless, it is obvious that coronavirus alone cannot explain such a sharp decline in the population of Russia. In the United States, where the incidence of COVID-19 turned out to be much higher, and the population decline due to a new infection exceeded the similar indicators in Russia several times, the population in 2020 increased by more than a million.

Numerous studies show that there is no universally accepted theory of demographic processes [3]. For example, for the 1950-1970-s baby boom and a further sharp decline in the birth rate (for example, in the United States in 1976, the birth rate fell by half compared to the mid-1950s, amounting to 1.75 children per woman), scientists put forward about a dozen mutually contradictory scientific hypotheses [17]. Also, many explanatory opinions have been put forward about the sharp drop in the birth rate after 15 years of pronatal (aimed at increasing the birth rate) in Russia. Experts agree on one thing: in the coming years, Russia will be overtaken by Mexico, Ethiopia, the Philippines, Congo, Egypt, Vietnam in terms of population. The number of workers in Russia is constantly decreasing,

and even at a faster pace than the population, because the number of pensioners is growing, and the number of able-bodied citizens is decreasing. This means that the country is unattractive for investors and that it is impossible to increase GDP at the required pace. And the rates have been spinning around 0-1% for 12 years. In addition, the importance of the resource economy is decreasing, the role of the knowledge economy is increasing, in which it is the number of people that matters with the increasing importance of each individual as a potential carrier" [8].

It is no longer possible to make up for Russia's demographic losses in recent decades, taking into account the upcoming population decline in the next decade. After all, if we soberly assess the situation, then we can conclude that Russia has no opportunity to increase the birth rate. In the postmodern world of the 21st century, with its low motivation to have children, this is a difficult problem to solve. In the foreseeable future, only migration policy remains the main source of small growth, and maybe even preservation of the population of Russia [15]. Consequently, our country should not only be attractive for low-skilled labor, but also for education, for a "smart" economy.

Negative forecasts of a natural decline in the population of Russia are compounded by a decrease in the number of migrants in the past two years. In 2020, the migration growth of the Russian population amounted to 106.5 thousand people - 2.7 times lower than in 2019, according to Rosstat data. Before the pandemic, Rosstat predicted (in the basic version of the demographic forecast) that the migration increases in 2021–2030 would amount to 253–262 thousand people annually. Now Rosstat expects that the net inflow of international migrants will be 228-240 thousand people in 2022-2025.

The new coronavirus infection objectively aggravates demographic problems and hinders the achievement of sustainable development of the country and economic growth [16]. These circumstances suggest a further strengthening of measures to increase the birth rate and reduce the death rate of the population, which now in Russia include:

#### *1) Increased fertility*

The President of the Russian Federation Vladimir Putin formulated the next measures to increase the birth rate in his Address to the Federal Assembly in 2020. He stated that Russia is facing the task of increasing the total fertility rate (the number of children born by one woman) to 1.7 by 2024 against the current 1.5.

✓ Since 2020, maternity capital is paid at the birth of the first child, and the program itself has been extended until 2026.

✓ After the birth of their third child, families can receive 450 thousand rubles from the state. to pay off the mortgage loan.

✓ Introduced several additional payments to families with children in need.

#### *2) Reduced mortality*

In the Decree "On National Goals and Strategic Development Objectives of the Russian Federation for the Period up to 2024", the President demanded that the government ensure:

✓ an increase in healthy life expectancy up to 67 years;

✓ increase in the proportion of citizens leading a healthy lifestyle, as well as an increase of up to 55 percent in the proportion of citizens regularly involved in physical culture and sports;

✓ formation of a system of motivating citizens to a healthy lifestyle, including healthy eating and giving up bad habits.

Since 2013, a state program of medical examination (preventive medical examinations) of the adult population has been in effect in Russia.

That is, in order to ensure natural population growth, it is necessary to increase the birth rate and reduce the mortality rate. In Russia, measures are now being taken in both directions.

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