

# Poverty in Russian regions in 2000-2017: factors and dynamics

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## Abstract

The article considers the level and dynamics of the level of poverty in the regions of Russia for 2000-2017, shows the sustainability of regional differentiation, despite the changes in the distribution of regions by the level of poverty. Regions with different rates of poverty reduction in the period of economic growth and the factors that accelerated this process are allocated. The weak impact of the two recent crises on the dynamics of poverty in the regions with different dynamics of income is revealed. The influence of demographic (child burden) and income factors (income level and income inequality), the cost of living in regions and the level of urbanization on regional poverty indicators is considered. The change of influence of different factors of poverty in the early 2000s and in 2017 is shown. An analysis of changes in the regional picture of poverty in transition from absolute to relative criteria of its measurement is carried out.

## Keywords

regions of Russia; poverty level; absolute and relative poverty; age structure of the population

## Introduction and Problem Statement

Poverty in Russia is characterized by significant regional differentiation both by scale and profile. Besides, during the post-Soviet period the level of poverty in the Russian regions has been changing under macroeconomic and demographic factors as well as peculiarities of regional labour markets and social security systems. Research of the regional aspects of poverty started only at the late 1990s, however, by the end of the 2000s and the beginning of the 2010s the academic interest to this issue declined as the acuteness of the problem reduced.

The prolonged decline in incomes of the population in 2014-2018, due to the economic crisis, has once again increased attention to the problem of poverty, including its regional aspects. Reduction of poverty by half has been declared as one of the objectives of the Pres-

idential decrees for the period of 2018-2024. The feasibility of this goal raises doubts among experts, and the possibilities of its implementation at the regional level were not calculated, as far as the author knows.

The article discusses the level of poverty and its changes in the regions of Russia in 2000-2017, as well as the impact of principle factors — income of the population, income inequality, the minimum of subsistence — on the poverty level. In addition to income characteristics, the factors include the level of urbanization, as in Russia the risks of poverty in rural areas are much higher than in urban areas.

Poverty in the regions of Russia, as in the whole country, is measured by an absolute monetary criterion, the poverty line is the regional subsistence minimum, calculated according to the methodology of the Ministry of Labour. Developed countries use a relative poverty criterion (50% or 60% of median per capita income). They also increasingly use multidimensional poverty criteria, which goes beyond current income estimation and takes into account the various types of deprivation in access to basic services. The article analyzes at a qualitative level how the application of a relative criterion can change the regional picture of the poverty level in Russia.

## Research Overview

In Russia, the first poverty studies were carried out by Institute for Social and Economic Studies of Population (ISEPS) of the Russian Academy of Sciences in the 1990s [Mozhina 1994], because in Soviet times the issue of poverty was not officially recognized. A significant contribution to the analysis of the factors, level and profile of poverty was made by L. N. Ovcharova and her colleagues at ISEPS and Higher School of Economics (HSE) (Ovcharova 2009; Ovcharova et al. 2014; Ovcharova and Biryukova 2018).

The number of works on Russia in general is large, however, regional studies are relatively small. The issues of poverty are most fully covered in several studies. R. Yemtsov in his paper for the World Bank (Yemtsov 2003) analyzed the problems of inequality and poverty in the regions on the basis of data of the Household Budget Survey of Rosstat for 1994 – 2000. With the help of convergence calculations the author revealed different dynamics of inter- and intraregional inequality of income of the population and on this basis made a forecast that by the end of the 2000s the poor will concentrate more and more in underdeveloped regions. ISESP authors analyzed regional income inequality by means of calculations of the Gini index and its impact on the poverty level (Shevyakov and Kiruta 2001).

The study of regional poverty was also carried out within the framework of the ILO Office in Moscow project (Ovcharova 2002), it examined the main factors of regional disparities in poverty levels and changes in poverty levels in the regions in the late 1990s. Based on the analysis, a typology of regions by poverty level and factors influencing it has been developed. Five types are identified — least developed with the maximum poverty level, less developed with a high level, a large group of “middle-level” regions, few relatively prosperous and only three prosperous regions, including Moscow and oil and gas autonomous districts of the Tyumen region. The impact of budgetary policy of the regions on poverty issues was also considered, recommendations for poverty reduction in regions of different types were developed.

In the book of D. Rudenko (2011) modelling of the relationship between indicators of socio-economic development and poverty level in the region is performed. It is shown that changes in the level of poverty are complexly and nonlinearly correlated with changes of

three components: average nominal income, income inequality, and poverty lines. In this book, the level of relative poverty by regions is calculated on the basis of the author's methodology and analysis of the relationship of both indicators of poverty with economic and social indicators according to data for 2009 is performed.

Factors of poverty in the regions are identified by E. Grishina using regression analysis (Grishina 2014). The author has shown that reduction of poverty is positively influenced by social payments to the poor (increasing their share in all social payments and the volume relative to the subsistence minimum), the wage level (the ratio of the average wage to the subsistence minimum), and negatively by the share of the population older than the working age, because since the end of the 2000s pensioners receive additional payments from the budget, bringing their pension up to the subsistence level of the pensioner. The increase of the poverty level is influenced by the higher proportion of persons under working age in the region (child burden), as well as "living in the Siberian Federal District" (Grishina 2014: 85).

The tools for measuring poverty in the regions for the implementation of social programs were also studied (Korchagina 2007), an analysis of the focus of the social security system on poverty reduction in the regions is carried out (Ovcharova and Prokofieva 2014).

Problems of poverty in certain regions were considered in works on Moscow, including ways of measuring poverty by using equivalence scales (Poduzov and Kukushkin 1997), features of the poverty profile, taking into account the high average per capita income of the population of the capital city (Shevyakov et al. 2009). Research on Tatarstan was carried out with an emphasis on modernization of the social security system for poverty reduction (Migranova and Melina 2007). The peculiarities of poverty issues for cities with different population sizes were examined on the example of St. Petersburg and Vyazniki (Lapteva 2004), the author used the data of sociological studies by ISEPS, in which poverty was measured through deprivation according to the methodology developed by P. Townsend (Townsend 1993) and adapted for Russia.

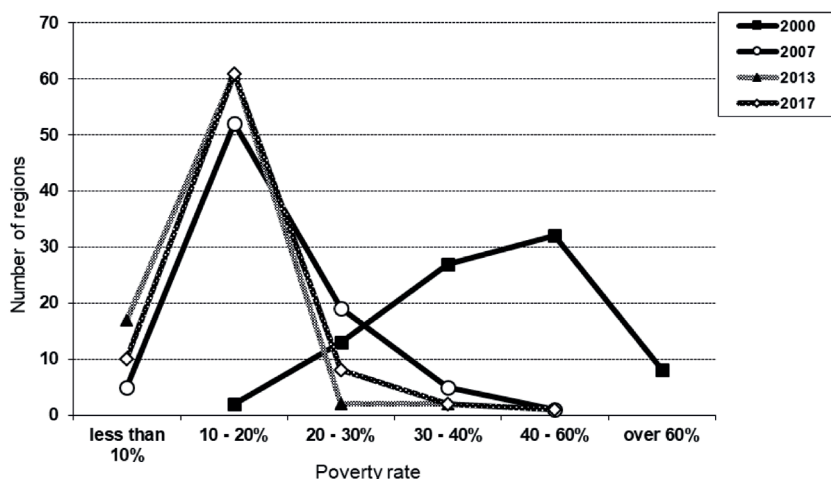
## Materials and methods of research

The analysis was conducted on the basis of regional data of Rosstat on poverty level and per capita income adjusted for subsistence minimum, income inequality (fund ratio), subsistence minimum size as well the share of urban population in 2000–2017. Methods of grouping regions with different poverty levels, construction of the field of distribution of the regions by pairs of indicators, and pair correlations were applied.

## Results

**1. The level and dynamics of poverty in the regions.** The most significant progress in reducing poverty was achieved during the economic growth period of the 2000s, when the rate fell from 29% in 2000 to 13% in 2007. The number of regions with high levels of poverty decreased sharply, and has not changed significantly since then (Fig. 1). During the crisis of 2009, there was no increase in the level of poverty, as there was no reduction in the income of the population, including through valorization of pensions. The minimum poverty level was reached in 2013 (10.8%).

During the recent crisis, poverty began to rise again (13.5% in 2016), but in 2017 there was a slight decline (13.2%). The four-year decline in real incomes of the population has had a relatively small impact on poverty. This is due to the fact that the level of the subsistence minimum (poverty line) has grown slower than the consumer price index, which measures the dynamics of real incomes of the population. The structure of these indicators is different: in the subsistence minimum half is food, over a quarter of it are potatoes and vegetables, the prices of which grow slower, and the consumer price index is measured based on the country's average consumption pattern, with a substantially lower share of food and a higher share of services, the cost of which grew the fastest. Thus, the subsistence minimum for the three quarters of 2018 increased by only 1.2%, and the consumer price index — by 3%, differences in their dynamics were by 2.5 times (Monthly... 2018: 32). However, crisis shifts were noticeable, in 2013-2017 there were more regions with a poverty level of 20 to 30% and at the same time, the number of regions with a minimum poverty level decreased. The least developed regions with the highest levels of poverty had the weakest response to the macro-economic dynamics of the last decade.



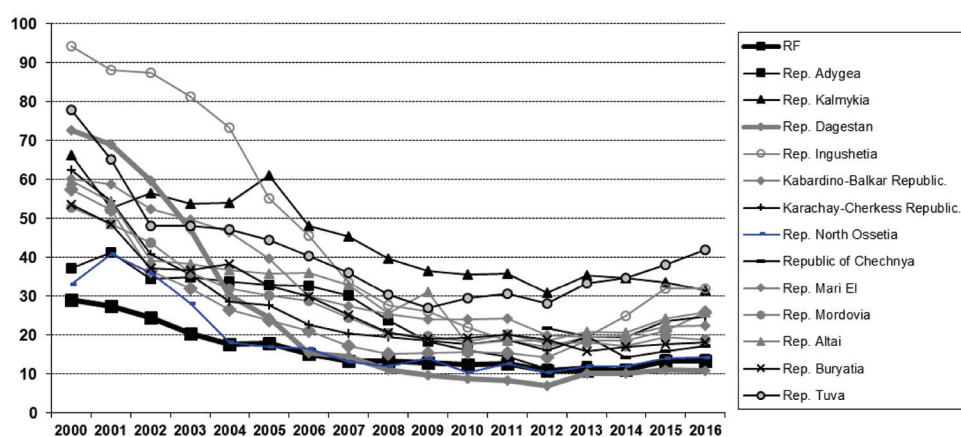
**Figure 1.** Distribution of regions by poverty level in 2000–2017 (without the Republic of Chechnya, Crimea and the city of Sevastopol),%. Source: calculated according to Rosstat data.

In the analysis of regional differences it is necessary to take into account the problems of reliability of regional statistics of income and the poverty level, especially in the underdeveloped republics of the North Caucasus with a high share of the shadow economy. Thus, statistical estimates of hidden wages in the Republic of Dagestan reached half of all incomes of the population, which is much higher than in Ingushetia and other republics of the North Caucasus. This led to a sharp reduction in the poverty level in Dagestan by the mid-2000s, and it is now below the national average (Fig. 2). As a result, there is no correlation between the level of economic development and the level of poverty.

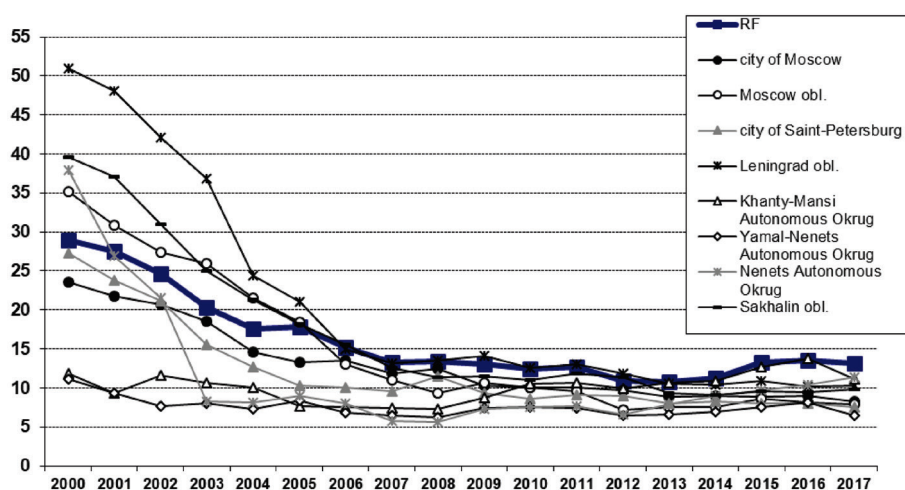
In economically developed federal cities and “rich” oil and gas producing regions, the poverty rate is steadily reduced. Since the mid-2000s, the regions of new oil and gas development (Sakhalin and Nenets Autonomous Okrug) have been added to them, where the growth of raw materials production, wages and budget revenues has led to a sharp reduction in poverty, and

also the external zones of the two largest agglomerations of the country (Moscow and Leningrad regions), the development of which accelerated during the period of economic growth due to agglomeration advantages, which also contributed to a faster reduction in poverty (Fig. 3).

**2. Factors of poverty.** In addition to economic, the territorial differentiation of poverty is due to other factors. Let's start with demographic factors. In the demographic profile of Russian poverty, the most vulnerable group are children: the poverty rate of children was 22% in 2016, with a 7% poverty rate of persons older than the working age and an average level of 13%. Households with children account for over 60% of the number of poor households in Russia (Socio-economic... 2017). For this reason, regions with a high proportion of the poor include the republics of the North Caucasus and south Siberia, which have not completed the demographic transition, and the increased poverty rate is typical for some other eastern



**Figure 2.** Poverty rate in underdeveloped republics, %. Source: Rosstat data.

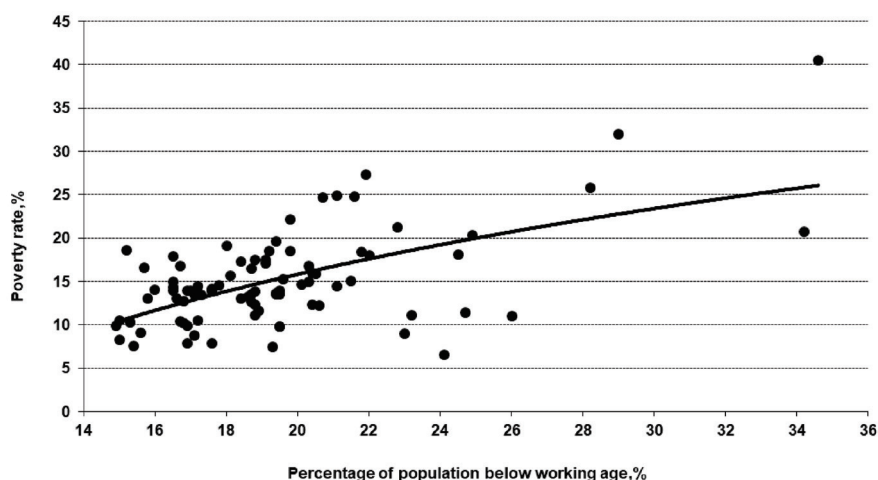


**Figure 3.** The poverty rate in agglomerations of federal cities and in leading oil and gas producing regions,%. Source: Rosstat data.

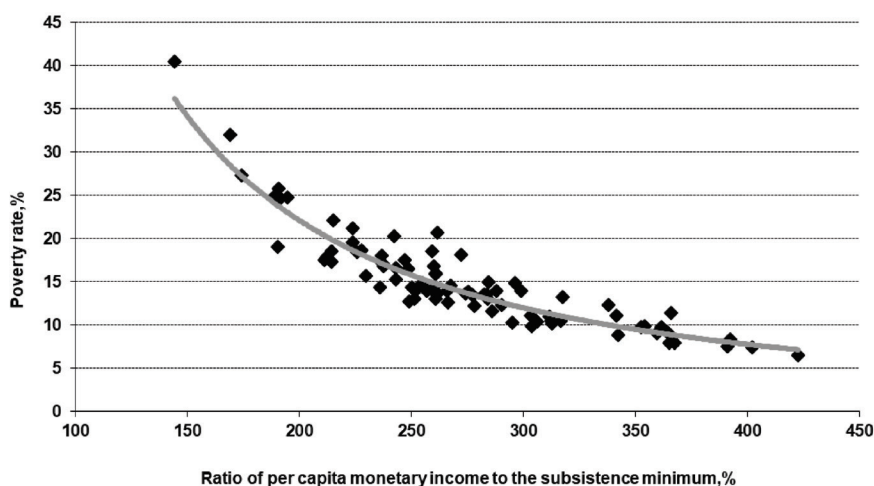
regions with a younger population structure. However, in regions with older populations, this factor is less significant (Fig. 4).

The most important factor is the level of income of the population adjusted for the subsistence level in the region. The connection is not linear, but strong (Fig. 5). With such a high importance of the income factor, it is obvious that without a significant increase in incomes of the population by 2024 implementation of the Presidential decree on two-fold reduction of the poverty level is unlikely to succeed.

Intraregional inequality of income of the population (fund ratio) on average in Russia is very high - 15.3 times in 2017, although it slightly decreased during 2010s. High income



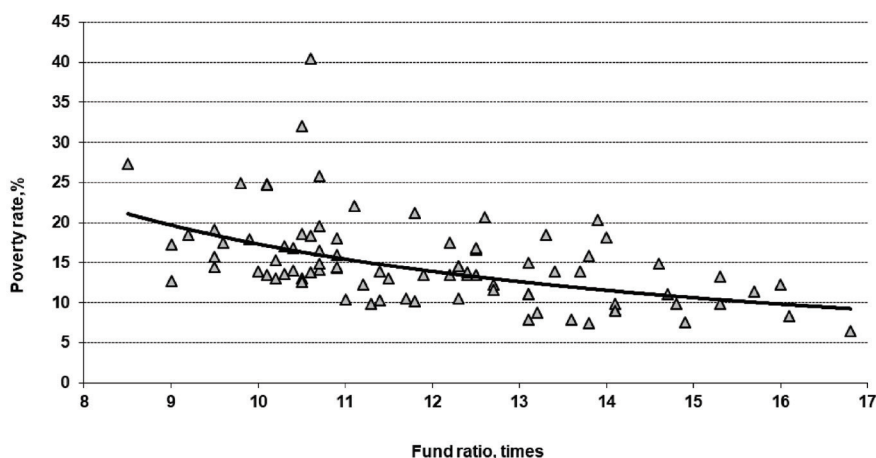
**Figure 4.** Distribution of regions by poverty rate and percentage of population under working age in 2017. Source: Rosstat data.



**Figure 5.** Distribution of regions by poverty rate and the ratio of per capita monetary income to the subsistence minimum in 2017. Source: Rosstat data.



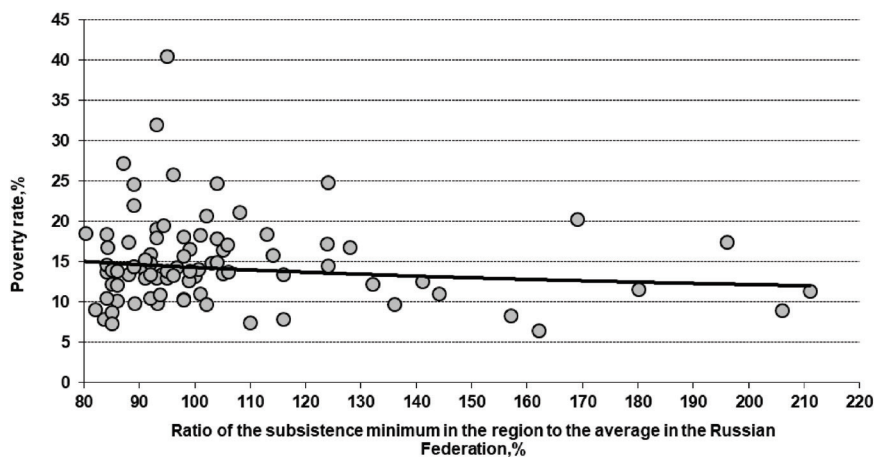
inequality in the region increases the cost of living and the subsistence minimum, which negatively affects the level and depth of poverty. However, for the regions of Russia the influence of this factor is not so great (Fig. 6). Although income inequality is higher in the developed regions with higher incomes adjusted for the subsistence minimum, poverty levels are lowered because of the greater influence of the income factor. In regions with relatively low inequality (8–11 times), poverty levels vary greatly and are even less significant.



**Figure 6.** Distribution of regions by poverty level and fund ratio in 2017. Source: Rosstat data.

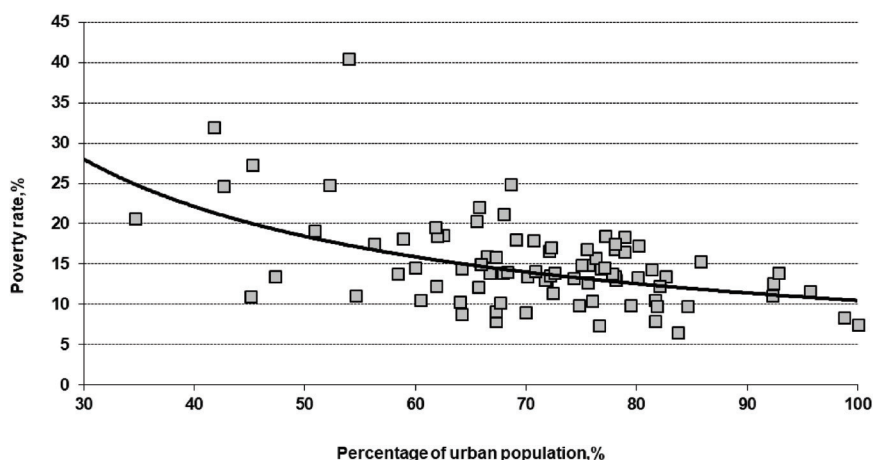
The cost of living in the region is measured as the ratio of the regional subsistence minimum (poverty line) to the average in the Russian Federation. In Russia there are “cheap” regions with low living wage, mainly the Chernozem region, part of the Volga region, the south of Urals and the south of Western Siberia, and “expensive” regions — capital cities, the regions of the North and Far East. Other things being equal, a higher subsistence level should increase the level of poverty, and a lower level should contribute to the reduction of poverty. However, the correlation between these indicators is minimal. Thus, among the regions with low subsistence levels, there are both high and low poverty regions (Fig. 7). Only a combination of several factors — the low subsistence minimum, the average per capita income of the population, and the relatively low intraregional income inequality — contributes to the withdrawal of the population from poverty. Basically, it is typical for the Chernozem region and part of the Volga region: in the Belgorod, Voronezh, Lipetsk, Kursk and Tambov regions and the Republic of Tatarstan, the poverty rate is minimal — from 8 to 10% in 2017, but the “cut-off bar” is very low.

In regions with a high cost of living, the differences are also great: in federal cities and the Moscow region the poverty rate is low (8%), while in the regions of the North, Siberia and the Far East it is higher than the national average, with the exception of Sakhalin and Chukotka Autonomous Region. It is for remote Russian regions that the higher cost of living with average level of incomes adjusted for the subsistence level is a significant factor in the higher level of poverty relative to regions of the European part with a comparable level of economic development. This is the reason for the continuing migration outflow.



**Figure 7.** Distribution of regions by poverty rate and cost of living (the ratio of the subsistence minimum in the region to the average in the Russian Federation) in 2017. Source: Rosstat data.

According to Rosstat, the poverty rate of rural population is one and a half times higher than urban: the ratio of urban and rural population in Russia is 74:26, and the ratio of the number of poor people in cities and rural areas is 64:36. As a consequence, the increased proportion of the rural population in the region is also a factor of poverty, which is confirmed by the distribution of regions by poverty and share of urban population (Fig. 8). However, the correlation is not linear and not very strong, because the risks of poverty that Rosstat calculates, are increased not only for rural areas, but also for cities with a population under 100,000 inhabitants and especially — with population of less than 50,000 inhabitants.



**Figure 8.** Distribution of regions by poverty rate and percentage of urban population in 2017,%. Source: Rosstat data.



Calculations of pair correlations show that in 2017 the main factor of poverty in the regions was the incomes of the population adjusted for the subsistence minimum (Table 1). Burden with children and urbanization are also significant. Income inequality affects the poverty level slightly weaker, and the cost of living factor in the region itself is insignificant, with the exception of two polar groups of regions (“cheap” Chernozem region and “expensive” remote regions). Thus, the current level of absolute poverty in the regions, measured as the proportion of the population below the subsistence minimum, is determined by four basic factors: mainly income of the population correlated to the cost of living in the region, and also the age structure of the population, the level of urbanization, and income inequality.

Is the impact of these factors sustainable? The calculation of pair correlations on indicators at the beginning of 2000s shows that it changed. The impact of income adjusted by the cost of living in regions was somewhat weaker, as was the impact of child burden, as well as intraregional income inequality, which grew significantly in the 2000s. On the contrary, the impact of urbanization was higher, due to a stronger wage gap for those employed in agriculture in the early 2000s compared to 2017. The decrease in the impact of the cost of living in regions (subsistence minimum) on the level of poverty is due to the reduction of differences in the regional subsistence minimum.

**Table 1.** Pair correlations (indices for 2001–2002 and 2017)

	Poverty level, 2001	Poverty level, 2017
Ratio of per capita income to the subsistence minimum in the region *	–0,67	–0,86
Percentage of population below working age	0.43	0.59
Proportion of urban population	–0,62	–0,54
Fund ratio	–0,35	–0,49
Subsistence level*	–0,30	–0,14

\* Data for 2002 (in 2001 the regional data of Rosstat were incomplete). Source: calculated according to Rosstat data.

**3. Geography of poverty under the relative criterion.** Measurements of relative poverty in Russia are not yet numerous. In a study of the Russian Presidential Academy of National Economy and Public Administration conducted on the basis of Rosstat data, it is shown that at a poverty line of 50% of median income its level in 2015 was 18.3% (Maleva et al. 2019, 21). The index for Russia is significantly higher than in OECD countries, and comparable to Turkey, Israel and the United States, due to high income inequality in all these countries. In addition, the level of relative poverty in Russia increased slightly during the period of economic growth in the 2000s (from 17 to 19 %), in contrast to absolute poverty, which was rapidly declining. According to the authors of the study, this is a consequence of increasing income inequality during the period of economic growth. On the contrary, during the crisis of 2014–2017, the level of relative poverty decreased slightly (to 18% in 2017) due to a decrease in income differentiation among the population.

Rosstat has developed a methodology for measuring the level of relative poverty by using equivalence scales<sup>1</sup>. When moving to the criterion of relative poverty with equivalent disposable monetary incomes below 50% of the median, its level does not change significantly (14% in 2013-2016), but the demographic profile of poverty changes significantly [Frolova 2018]. There is a sharp increase in the poverty rate of households composed of pensioners only (from 1 to 18%) and a marked decrease in the poverty rate of households with large families (from 27 to 17 %), three children (from 51 to 35%) or children under 3 years of age (from 35 to 26%). Thus, the transition to the criterion of relative poverty based on an equivalent scale dramatically increases the risk of poverty for the elderly, which is largely no longer poor because of the supplement pension payments introduced at the end of the 2000s to bring pensions up to the subsistence minimum of the pensioner.

Analysis of the level and factors of absolute poverty helps to assess, at a qualitative level, changes in its geographical picture in transition to a relative criterion of poverty, taking into account the demographic profile. First, there will be no area with a low level of poverty in the Central Chernozem region, as the population of these regions is very old. Pension supplements pull the income of non-working pensioners up to the subsistence minimum, but the income of many households consisting only of pensioners is still below 50% of the median, so poverty among older persons, measured by relative criteria, will increase dramatically. For the same reason, the poverty rate will increase markedly in other highly aged regions — in the Non-Chernozem regions (the rest of the Centre's regions except the metropolitan area and part of the North-West regions), parts of the Volga region (Penza, Nizhny Novgorod regions, etc.). Poverty in the rural population of all these regions increases particularly, with a large proportion of elderly singles and couples. Secondly, when calculating relative poverty criteria by using equivalence scales, poverty levels in regions with high child burden and that have not completed the demographic transition, namely in the underdeveloped republics of the North Caucasus and the south of Siberia, in Kalmykia, as well as in Yakutia, decline. As a result, on the Russian map of poverty instead of one, two most problematic zones will appear — not only the “youngest”, but also the oldest regions.

## Conclusions

The regional specificity of Russian poverty, measured by the absolute criterion, is quite large and manifests itself in various aspects:

- sustainability of strong regional differences due primarily to income and demographic factors, as a result of which: most problematic are the republics that have not completed the demographic transition, while the lowest poverty level is in the most developed agglomerations of federal cities and the main regions of oil and gas production;

- non-linear dynamics during periods of economic growth and crises: a sharp decline in poverty over the long period of economic growth in the 2000s in the vast majority of regions; a minimal response to the 2009 crisis due to the relative stability of incomes in most regions; a relatively weak response to the current crisis, despite a significant decline in the

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<sup>1</sup> The use of equivalent scales takes into account differences in the real purchasing power of income through relative savings from large economies and can be considered as an indicator bringing household incomes of different sizes to a single measure.

incomes of the population, largely due to the slow increase in the subsistence level in regions because of its structure;

- different rates of poverty reduction during the period of economic growth: maximum rates — in the external zone of two largest agglomerations of the country and in regions with sharp growth of oil and gas production under the influence of agglomeration and resource factors (competitive advantages), slow rates — in the least developed regions, except for certain regions with low reliability of income and poverty statistics;

- influence of geographical factors: formation of zones of reduced poverty in regions of the Chernozem region and in part of neighboring regions due to very low cost of living, as well as zones of increased poverty in northern and remote eastern regions due to high cost of living in unfavourable climatic conditions;

- the most important factor of poverty in the regions is the level of income of the population adjusted for the subsistence minimum, its role increased even more in 2010s; significant factors are children burden and the level of urbanization; slightly less significant, but more noticeable since the end of the 2010s is income inequality.

In transition to a relative measure of poverty (50% of median income), the regional picture will change significantly due to the demographic profile of this indicator. In addition to problematic underdeveloped republics, where the poverty level will slightly decrease, there appears a new problem zone — the most aged regions of the Center, the North-West and part of the Volga region, poverty of the rural population of these territories will increase especially strongly.

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