

Alternative Approaches to Measure Poverty in Russian Regions

Rudenko Dmitry Y.

Tyumen State University; Tyumen State Academy of World Economy,
Management and Law; Tyumen, Russia
Email: drudenko@inbox.ru

Doi:10.5901/mjss.2014.v5n13p262

Abstract

The paper proves the need of a complex poverty measurement approach in Russian regions, including the analysis of socio-economic situation, efficiency of existing institutes, and state of environment. We analyze the official poverty measurement approach in Russia and consider its main problems. To identify the complex picture of poverty in Russian regions, we compare indicators characterizing poverty according to the monetary approach.

Keywords: inequality, human development, poverty, regions, Russia.

1. Introduction

The second wave of global economic crisis in 2012 has interrupted the growth of per capita incomes in Russia and has led to a rise in poverty. In 2013, compared to 2012, the proportion of the poor increased by 0.3 percentage point to 11.1%. Factors and risks of poverty in the period have been: the decline in real incomes; increase of the poverty line as a result of inflation; job cuts; slowdown in social transfers and wages in the public sector. Structural problems in the Russian economy are still not resolved, the global financial and commodity markets are reeling, the instability in Ukraine is growing, debt problem in Europe remains valid – there is a chance of slowing economic recovery. In this regard, the issue of poverty in Russia is becoming increasingly important.

Three concepts of monetary poverty measurement have been worked out: absolute, relative and subjective. Since Russia's rank in the global economy is contradictory: on a range of indicators we are lagging behind developed countries and at the same time we are significantly different from the developing ones (despite their diversity), the problem of poverty can not be solved without combining the concepts of absolute (common for developing countries), relative and subjective poverty (typical for the developed ones).

2. Methodology

The Poverty headcount index (the proportion of population with incomes below the subsistence minimum) is a core element of officially published data on the level of poverty in Russian regions, which reflects the most extreme poverty, but not a living wage, that is, the amount by which a person can live with dignity. A methodology for determining the poverty in Russia is based on an absolute monetary approach, which does not meet the minimum required to meet the needs for human development and to evaluate all factors affecting the structure and dynamics of poverty.

According to Fedorenko (2005) the official approach "makes comparable estimates of poverty and subsistence either by region or by time period, and does not allow to fix the duration of the state of poverty" (p. 22). Poverty is a multidimensional category that can not be measured only by monetary indicators. A complex approach to defining and measuring poverty, including an analysis of the socio-economic situation in the region, access to health care and education, the effectiveness of existing institutions and the environment is needed.

Rudenko (2013) has systematized approaches to poverty study providing: an approach based on unmet basic needs; a money metric approach; an approach through the possibilities of human development; an approach through social exclusion and a participative approach. The study of monetary poverty should include an analysis of population with incomes below the poverty line with its different variations according to the concepts of absolute, relative and subjective poverty. The study of unmet basic needs for food and living conditions involves determining the number of people without housing amenities and modern appliances. It is necessary to consider the proportion of children who are not receiving general education, the provision of medical services, morbidity (especially active tuberculosis, alcoholism, substance abuse and drug addiction), disability and mortality in the study of human development opportunities. The study of social exclusion involves determining the level of unemployment (ILO methodology), the number of the homeless, as well as street children. The study of subjective poverty evaluates the satisfaction by the financial situation and quality of

life, the prospects for improvement.

The author compares various parameters describing the poverty with a monetary point of view to identify a complex picture of this phenomenon in regions of Russia. We take the view of Aivazyan (1997) that incomes of Russian households are likely to be well approximated by a lognormal distribution in the income range typically associated with observed poverty rates. For a homogeneous population with a lognormal income distribution, the poverty rate, H is given by

$$H = \Phi\left(\frac{\ln z - \mu}{\sigma}\right)$$

where Φ denotes the standard Normal distribution function, z is a poverty line, μ is a mean log income, and σ is the standard deviation of log incomes.

According to Kolenikov and Shorrocks (2003) "this explicit formula for the poverty rate helps us to appreciate and understand the complex (and highly non-linear) way in which the mean income, inequality, and poverty line factors interact to determine the level of poverty". Poverty rate estimates from the proposed methodology are necessarily subject to error as they take no account of variations in incomes and minimum subsistence levels by types of households. They also rely on highly aggregated quintile share data for the distributional characteristics. Nevertheless, they are able to reproduce the main features of the Rosstat series of poverty rates. The main advantage of aggregated models is that they allow the poverty rate to be simulated under various scenarios different from those pertaining in the official series. These counter-factual experiments are precisely what is required in order to compare indicators characterizing poverty according to national and international approaches.

3. Results

The prevalence of poverty in the Russian regions in 2012 ranged from 6.5 to 30.8%. The geography of poverty is similar to the geography of the income purchasing power in many ways, as it is a basic money-metric poverty factor. The lowest proportion of the poor in 2012 had the Tatarstan Republic (6.5%) and Belgorodskaya oblast (6.5%), and the maximum level was maintained in Kalmykia (30.8%) and Tyva (28.1%).

The author has used an alternative methodology to assess poverty – absolute (USA – a threefold increase in the cost of the minimum food basket) and relative (EU – the proportion of people living on less than 50% of per capita income). Per capita income in 2012 on average in Russia was amounted to RUB 22880 per month, the cost of the minimum food basket was RUB 2541. So, the poverty line will be considered in the first case as a three times cost of the minimum food basket – RUB 7623 and a half of per capita income – RUB 11440 in the second case. Thus, the proportion of the poor in Russia in 2012 was about 15.6% and 31% respectively. The calculation results for the regions are shown in Table. 1.

Table 1. Regional levels of absolute and relative poverty headcount indexes, %

Russian region	Absolute poverty				Relative poverty	
	Official, %		American, %		European, %	
	2002	2012	2002	2012	2002	2012
A	1	2	3	4	5	6
Belgorod region	25.4	10.2	58.26	10.4	21.21	29.9
Bryansk region	31.2	15.3	64.1	16.6	21.99	28.4
Vladimir region	35.3	20.4	75.21	22.1	17.36	25.5
Voronezh region	33.8	21.2	63.6	15.5	23.68	29.3
Ivanovo region	60.8	23.4	84.18	21.4	18.13	25.2
Kaluga region	35	12.4	70.15	12.7	19.28	28.8
Kostroma region	35.5	19.8	66.24	21.3	22.49	24.7
Kursk region	33.7	12	58.28	12.3	22.07	28.2
Lipetsk region	25.8	10.2	58.48	12.5	24.46	28.3
Moscow region	27.4	10.1	54.16	8.7	22.53	30.9
Orel region	30.6	18.6	62.28	20.8	24.19	29.2
Ryazan region	31.3	16.4	65.91	17.3	20.29	26.5
Smolensk region	25.2	14.8	58.68	19.5	22.07	26.1
Tambov region	27.2	11.8	55.34	17.2	24.96	30.4
Tver region	38.7	14.3	71.17	19.2	18.36	24.5

Tula region	21.8	12	63.53	15.6	17.71	27.1
Yaroslavl region	21.4	16.2	51.92	17.5	21.57	27.7
Moscow	20.7	10	31.07	8.9	48.4	38.8
Republic of Karelia	18.8	17.1	45.68	19.6	21.57	25.1
Komi Republic	19.4	16.8	31.48	16.4	31.88	31.5
Arkhangelsk region	26.5	14.7	45.25	16.2	22.53	27.3
Vologda region	22.8	18.6	50.63	21.9	20.98	25.7
Kaliningrad region	39.6	13.5	67.53	20.8	20.14	27.7
Leningrad region	42.1	14.8	75.7	25.9	16.79	27.1
Murmansk region	22.6	14.8	35.55	11.9	26	28.3
Novgorod region	30.8	17	58.34	19.8	23.54	29.7
Pskov region	27.5	16.8	61.77	24.8	21.99	26.1
St. Petersburg	21.2	9.6	41.95	16.6	22.49	34.1
Republic of Adygea	34.6	19.3	72.86	21.5	21.21	28.4
Republic of Kalmykia	56.6	36.3	79.31	45.5	25.5	26.6
Krasnodar region	32	18.6	61.19	17.9	26.68	31.0
Astrakhan region	26.2	15.4	54.51	20.6	21.57	29.3
Volgograd region	26.8	13	57.42	18.2	21.57	24.7
Rostov region	27.9	16	53.08	19.0	24.54	28.6
Republic of Dagestan	59.7	9.2	87.26	17.4	23.45	29.6
Republic of Ingushetia	87.4	36.1	97.47	34.5	18.13	26.0
Kabardino-Balkar Republic	36.6	16.2	75.13	26.8	19.14	26.6
Karachay-Cherkessia	40.9	16.2	76.72	29.3	22.99	25.6
Republic of North Ossetia	36	11.1	77.81	20.8	17.86	26.1
Stavropol region	39.4	19.4	68.62	22.1	22.53	27.3
Republic of Bashkortostan	23.2	11.2	53.94	16.0	25	32.1
Mari El Republic	52.5	24.4	80.62	29.1	22.68	27.3
Republic of Mordovia	43.7	19.7	74.95	27.3	20.56	25.6
Republic of Tatarstan	23.6	8.6	49.48	10.6	26.14	31.6
Udmurtia	30.4	15.3	65.61	17.4	18.22	26.2
Chuvash Republic	40.9	19.4	74.59	24.3	18.22	26.0
Perm Krai	23.4	15.3	44.22	16.0	29.12	32.1
Kirov region	34.5	18.3	63.3	18.1	18.22	25.6
Nizhny Novgorod region	22.8	13.5	52.25	13.7	21.99	29.3
Orenburg region	33.3	16.2	66.46	18.0	19.28	27.7
Penza region	37.6	15.1	70.29	20.4	18.72	27.3
Samara region	27.7	16.1	50.25	15.2	32.13	33.8
Saratov region	34.4	19.4	64.65	20.0	19.64	26.5
Ulyanovsk region	40.7	20.4	67.34	19.1	25	27.7
Kurgan region	45.2	17.2	67.36	23.4	26.23	28.6
Sverdlovsk region	24.3	11	45.97	13.2	24.19	32.4
Tyumen region	15.8	12.2	27.9	13.7	34.79	34.3
Chelyabinsk region	29.7	11.2	58.25	17.7	23.04	28.7
Altai Republic	39.3	32.6	71.65	31.5	18.87	25.0
Republic of Buryatia	37.2	19.7	59.88	27.0	29.34	29.9
Republic of Tyva	48.2	29.1	75.18	44.8	22.77	25.6
Republic of Khakassia	31.8	19.1	58.31	26.3	23.68	27.1
Altay region	38.9	25.3	68.32	28.5	24.46	25.6
Trans-Baikal Territory	44.6	20.1	68.23	28.7	24.69	29.2
Krasnoyarsk Territory	25.6	19.2	46.11	21.1	29.12	31.6
Irkutsk region	31.9	19.1	49.76	21.3	29.7	30.3
Kemerovo region	23	12.2	43.09	25.3	25.1	29.6
Novosibirsk region	39.4	16.6	51.75	12.8	24.04	30.5
Omsk region	24.3	15.3	53.28	21.4	24.46	31.0
Tomsk region	22.5	17.8	51.05	26.6	25.5	27.7
Republic of Sakha	22.3	19.5	39.45	21.7	25.23	29.3

Kamchatka Krai	34.3	23.1	55.06	18.5	23.68	26.2
Primorsky Krai	46.9	19.4	66.73	28.7	21.48	27.6
Khabarovsk Krai	26.5	18.8	44.29	19.6	25.23	27.3
Amur region	44.6	23.1	62.93	22.9	23.45	27.6
Magadan region	20.8	16.3	42.2	19.7	24.46	30.5
Sakhalin region	31	12	42.58	17.8	24.69	30.1
Jewish autonomous region	38.4	22.5	63.2	30.9	22.99	26.1
Chukotka autonomous okrug	28.6	9.3	46.41	23.5	30.37	30.5

Based on Rosstat regional statistics 2013.

Dynamics of the population with incomes below the subsistence level shows a stable downward trend, but the dynamics of poverty, defined by the European methodology, is not so clear and shows that on average, one-third of the population are relatively poor. According to the standards of developed countries, the poverty in Russia is 1.5-3 times higher than the official rate. Measuring poverty by a subjective approach suggests that a large number of people consider themselves as the poor – 48% and 36% respectively in 2009 and 2010. According to Ivanov and Suvorov (2006) this “suggests that in the face of rising living standards of the population as a whole – as opposed to periods of crisis, accompanied by a significant fall-off – self-assessment of people’s financial situation is much more determined not by sufficient funds to meet the most urgent needs, but by comparing the conditions of life of the others. However, as in other countries, subjectively estimated poverty rate is above the relative poverty rate, and its boundary is probably close to the value of the median income” (p.135).

Figures 1 and 2 show that relative poverty in Russian regions is as high as the level of per capita income and inequality. According to Sheviakov (2005) there is “excessive inequality, expressed in excessive concentration and polarization of income, including the wealthiest regions” (p. 62).

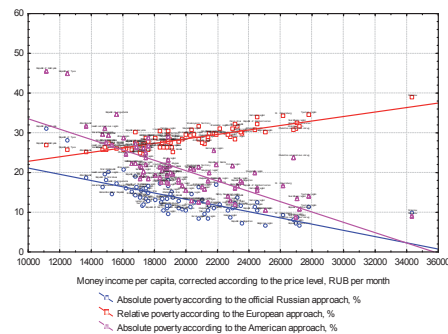


Figure 1. The interdependence of absolute and relative poverty and money income per capita, corrected according to the price level, 2012

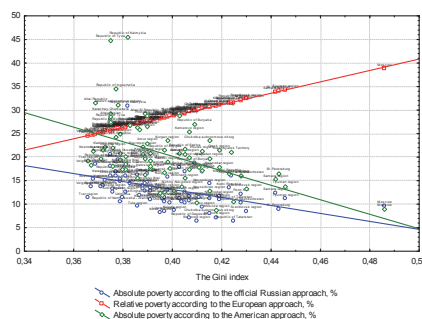


Figure 2. The interdependence of absolute and relative poverty and the Gini index, 2012

We can observe that the number of the relatively poor was about 38% in Moscow with an official poverty rate of 9.7% in 2012. If one had increased a relative poverty line to two-thirds of per capita income there would be 51% of the poor. The reason for this is the excessive concentration of income in the capital. The development strategy, based on the growing inequality in the distribution of income between the rich and the poor, actually does not lead to an increase in economic potential. Figure 3 shows that the number of billionaires has increased since the world economic crisis, but the number of the poor has not varied significantly in Russia.

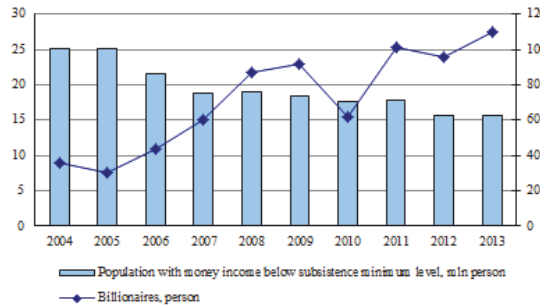


Figure 3. The number of billionaires and the poor in Russia, 2004-2013

By the number of billionaires Russia is one of the leaders in the global economy. Thus, according to the annual Forbes (2013) ranking, Russia was ranked third after the United States and China, but according to the GDP per capita (PPP) Russia was ranked only 77.

The total net worth of all 110 Russian billionaires was 427.1 billion U.S. dollars, or nearly 20.2% of GDP, estimated by CIA at 2113 billion U.S. dollars at market exchange rates. While the total net wealth of all 442 American billionaires was estimated at nearly 11.2% of GDP. According to Credit Suisse (2013) "Russia has the highest level of wealth inequality in the world, apart from small Caribbean nations with resident billionaires. Worldwide, there is one billionaire for every USD 170 billion in household wealth; Russia has one for every USD 11 billion. Worldwide, billionaires collectively account for 1%-2% of total household wealth; in Russia today 110 billionaires own 35% of all wealth". There is no middle class in Russia, the formation of which is prevented by an exceptional income differentiation and the presence of a large number of residents with incomes below the subsistence minimum.

In addition to a positive and statistically significant (coefficient of Pearson correlation 0.848) correlation between the level of economic development and inequality in the regions of Russia, there is also a positive and significant (coefficient of Pearson correlation 0.64) relationship between the growth rate of per capita income and changes in the incomes inequality (Fig. 4).

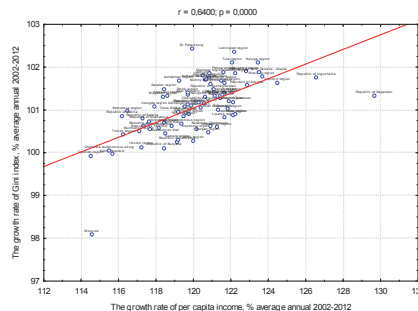


Figure 4. The interdependence of economic growth and changes in income inequality in Russian regions, 2002-2012.

Thus, different indicators confirm that inequality has intensified during the period of economic growth. This is a consequence of a very uneven distribution of "fruits" of economic growth and revenues from high commodity prices to different social groups and regions. As a result, the rich get richer and the poor – relatively poorer. While the social

welfare system is not effective enough as it is weakly oriented to support low-income groups.

4. Concluding Remarks

The results of the analysis and discussions indicated that poverty in many Russian regions was a problem of excessively high inequality and its scope could not be drastically reduced in the short term without a radical reduction of inequality. However, in the period of 2002-2012, income inequality had increased in almost all regions of Russia. The current situation in Russia is paradoxical – economic growth (characterized by low quality) under the existing distribution model only reinforces inequality, does not contribute to the alleviation of poverty. The trend of declining social well-being during the positive dynamics of socio-economic development indicates the need to review the socio-economic policy through an introduction of the integrated approach to poverty study. We proposed such a systematic approach to measure poverty presupposing to explore various dimensions of it from the perspective of different approaches: absolute, relative and subjective.

5. Acknowledgement

The study was supported by the Ministry of education and science of Russia, project 14.Z56.14.3051-MK

References

- Aivazyan, S.A. (1997). The model for the formation of population distribution in terms of per capita income in Russia. *Economics and Mathematical Methods*, (4), 74-86.
- Credit Suisse (2013). *Global Wealth Report 2013*. <<https://publications.credit-suisse.com/tasks/render/file/?fileID=BCDB1364-A105-0560-1332EC9100FF5C83>> (accessed May 30, 2014).
- Fedorenko, N.P. (2005). Poverty and wealth in modern Russia. *Economic science of modern Russia*, (3), 21-30.
- Forbes (2013). Mapping the wealth of the world's richest. <<http://www.forbes.com/sites/ricardogeromet/2013/03/22/forbes-billionaires-map/>> (accessed May 30, 2014).
- Ivanov, V.N. and Suvorov, A.V. (2006). Inequality and poverty: the experience of solving problems in Russia and abroad. *Studies on Russian Economic Development*, (3), 132-149.
- Kolenikov, S.O., and Shorrocks, A.F. (2003). A decomposition analysis of regional poverty in Russia. <<http://www.wider.unu.edu/stc/repec/pdfs/rp2003/dp2003-74.pdf>>. (accessed May 30, 2014).
- Rosstat (2014). *Social and Economic Indicators for Russia's Regions 2013*. <http://www.gks.ru/bgd/regl/b13_14p/Main.htm> (accessed May 30, 2014).
- Rudenko, D.Y. (2013). A comprehensive approach to the analysis of regional poverty. *Region: Ekon. Sotsiol.*, 79 (3), 121-141.
- Sheviakov, A.Y. (2005). Social policy and distribution relations: problems and ways of reforming. *Economic science of modern Russia*, (3), 55-66.
- UNDP (2013). *National Human Development Report for the Russian Federation 2013* / Edited by Prof. Sergey Bobylev/ Translation into English by Ben Hooson. Moscow: LLC RS If.