

LEASECON 2020
International Conference «Land Economy and Rural Studies Essentials»

**INEQUALITY IN INCOME DISTRIBUTION AND THE PROBLEM
OF POVERTY**

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Abstract

Recently, there has been a heated discussion on the topics of inequality in the distribution of income and problems of poverty. As a rule, as a result of such discussions, the main verdict is put forward, which states that the countries that were formerly part of the USSR and gained their independence just 2 or 3 decades ago have not yet been able to strengthen and create an effective economic model. Also, it is argued that the transition to the same market economy, which has shown its effectiveness to the whole world, takes time. In this article, we examined the economic situation of the post-Soviet countries, relying on the Gini index, as an indicator that characterizes the level of uneven distribution of incomes of the country's population. In those countries where the Gini index is high, a detailed answer to the definition of poverty and the factors leading to poverty are given. On the example of one of the post-Soviet countries, where the differentiation in the distribution of the population's income is clearly expressed, the Lorentz curve was constructed. Conclusions are given that are symmetrical to the above verdict.

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Keywords: Economic situation, Gini coefficient, inequality, income, poverty, Republic of Tajikistan



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1. Introduction

The characteristic of the economic position of an individual or social group that does not allow satisfying the minimum range of needs is called poverty. Since the level of poverty depends on the historical and psychological norms and characteristics of society, poverty can be attributed to a socio-economic phenomenon and a cultural phenomenon. The causes of poverty are also varied. A person may find himself in a difficult material situation at the individual level. The causes of poverty are varied, and include:

- natural disasters;
- illness or loss of a breadwinner;
- consumption of alcohol or drugs;
- quality of work of institutions;
- government policy;
- corruption.

Among the economic reasons, researchers highlight the impact of inflationary processes on the level of real incomes of the population. Back in 1924, Novozhilov established that the size of the inflation tax depends on the individual rate of turnover of money, which subsequently leads to higher losses for the poorer part of the population. The rural population suffers more from inflation than the urban population. The above statements were proven in the post-Soviet period of development both in Russia and in the countries that were part of the USSR. Hyperinflation and economic recession led to mass poverty, while economic recovery and a decrease in inflation as a result of more responsible budgetary policy and a number of other factors in the 2000s allowed poverty to be reduced significantly. The Republic of Tajikistan, having an agrarian-industrial orientation of its economy, did not avoid the problems of deepening socio-economic inequality in income distribution and the growth of the poverty level.

2. Problem Statement

The concentration of wealth in the hands of a small group of people is a widespread perception that this is the cause of poverty. The experience of many countries that have used large-scale distribution of wealth in favor of the poor classes has shown that this can indeed improve their level of well-being.

3. Research Questions

Poverty rates are measured by economists and sociologists. According to the criterion of the World Bank and specialized UN organizations, those who have incomes of less than \$2 per day are considered poor. And, as a rule, poverty is also determined by a national criterion: based on the calculation of the minimum consumer basket or the minimum set of goods and services (Klistorin, 2019). But there is also another approach. In European countries, people are considered poor if their income is less than 50% of the median income. Poverty in economic theory is determined by the Gini coefficient and the decile coefficient (the ratio of the income of 10% of the rich to the income of 10% of the poor). Table 1 presents data on the Gini index of a number of post-Soviet countries for the period 2017-2019.

Table 1. Indicators of the Gini index for post-Soviet countries

Countries	Gini index		
	2017	2018	2019
Russia	0.377	0.412	0.420
Kazakhstan	0.271	0.270	0.269
Ukraine	0.255	0.263	0.267
Uzbekistan	0.330	0.353	0.347
Byelorussia	0.265	0.271	0.277
Azerbaijan	0.107	0.317	0.418
Armenia	0.349	0.360	0.364
Georgia	0.389	0.405	0.414
Kyrgyzstan	0.324	0.341	0.352
Tajikistan	0.311	0.425	0.440
Turkmenistan	0.429	0.438	0.445
Lithuania	0.335	0.342	0.356

Differences in the definition of the level of poverty, or the absence of a single criterion for defining poverty, hinder comparisons between countries. Thus, according to official data, Russia in terms of the percentage of poor population, which varies within 20% of the total population, belongs to the same group as Canada, the United States and Germany on the one hand, and Indonesia, Iran and Morocco on the other (Acemoglu & Robinson, 2015). Moreover, the poverty rate in China, according to statistics, is lower than 10%. This somehow does not correspond to our ideas about these countries. Moreover, cash income, and even disposable cash income, are important, but not the only indicators of poverty.

Poverty is perceived as a social evil, and governments usually take pride in poverty reduction and declare poverty reduction targets. Promises to raise incomes and improve living conditions usually attract voters without fail, especially if they are not interested in the sources of resources for all these improvements. It is widely believed that expanding the range of government-funded services, increasing their availability and generally building a welfare state will improve the quality of life of most members of society. But, as practice shows, this is not necessary. Therefore, poverty is a political issue, since it is the subject of political debate everywhere (Danilova, 2018; Grishina, 2018; Mukhtasarova & Safin, 2018). A jump in poverty cannot be avoided in the short term due to the pandemic and the unstable situation in the global economy, which has entered a phase of depression.

Poverty is undoubtedly a social problem, since there is a strong correlation between the levels of poverty and crime, the spread of so-called social diseases, aggression and stress. Property stratification and income differentiation result in a decrease in the quality of education, professional and social mobility, affect health and life expectancy in certain social groups, and reduce motivation to improve the quality of the labor force (Kuznetsova, 2018; Samigullina, 2015; Shaidullina, 2019; Shaidullina & Ikhsanova, 2019).

Poverty is also an economic problem, just solely because the poor are bad consumers and, as a rule, bad workers. It is difficult to find skilled and motivated workers among them, since the latter are

usually not poor. Poverty also leads to deepening environmental problems, since the poor cannot afford modern technologies for recycling waste, often combine places of work, leisure and sleep, live crowded and pay little attention to the appearance and improvement of their homes. And undoubtedly poverty is a cultural issue. The mere sight of the poor and their environment can offend the aesthetic feelings of the more successful fellow citizens; As a result, the segregation of the inner-city space occurs and separate territorial segments of wealth and poverty appear inhabited by actually different peoples (Gabdrakhmanova et al., 2018; Igtisamova & Nosirov, 2018; Myrdal, 1972; Shangareev, 2018; Vasilyeva & Sinagatullin, 2018).

Differentiation of the population's income is an objectively emerging difference in the level of income of individuals and social groups due to differences in wages and social benefits, abilities and entrepreneurship, property status.

Cash income of the population includes wages, social transfers, entrepreneurial income, interest, dividends and other income from property, as well as the total value of the products of personal subsidiary plots consumed or sold by the family. Population incomes are unevenly distributed among population groups.

4. Purpose of the Study

The purpose of the article is to analyze the indicators of income differentiation and the level of poverty of the population living in the Republic of Tajikistan; determine their level and dynamics, assess current changes and identify factors and trends in this area of research.

5. Research Methods

The study used methods of economic and statistical analysis, a combination of quantitative and qualitative approaches, official statistics, publications in periodical literature.

6. Findings

There are a number of indicators for assessing the differentiation of incomes of the population, which make it possible to see how intensively this process is proceeding. Among them:

- distribution of the population by the level of per capita income is an indicator of the proportion or percentage of the population in certain specified intervals of per capita money income.
- distribution of the total volume of cash incomes by various groups of the population is an indicator as a percentage of the share of the total volume of cash incomes possessed by each of the twenty percent (ten percent) population groups. This indicator was graphically presented by the economist Lorenz in the form of a curve of the actual distribution of income (Lorenz curve).

As a proof of the above arguments and statements, we construct the Lorenz curve, using the example of one of the post-Soviet countries, the Republic of Tajikistan (hereinafter RT). Tajikistan belongs to the group of agro-industrial states, the main population of which is employed in agriculture. In 2019, Tajikistan ranked 131st in terms of GDP, calculated in purchasing power parity, and 154th in terms

of GDP per capita, according to the IMF, which demonstrates a rather low level of well-being of the country's population. Low economic indicators are caused, as a rule, by the lack of practical activity of the state in solving economic problems. It should be noted that even after independence, the formation of the Republic of Tajikistan as a separate independent state was accompanied and accompanied by political, economic and social problems, which lead to a sharp deterioration in the economic and social situation of the Republic of Tajikistan.

As practice shows, in countries with a high level of corruption and where government activities are not successful in solving economic and social problems, there is a tendency towards an increase in the concentration of income in the hands of a minority of the population. The factors that contribute to the uneven concentration of income have been described above. In order to visualize the difference in the actual distribution of income between groups of the population of the Republic of Tatarstan, we proposed to construct a Lorentz curve. Recall that the Lorentz curve is a graphical display of the indicator of the level of inequality in the distribution of income in a rectangular coordinate system. So, we know the following data (see Table 2, Table 3).

Table 2. Distribution of the total volume of monetary income by 20%-groups of the population of the Republic of Tatarstan for 2019

Groups by cash income [%]	Share of cash income in group [%]
20	5
40	11
60	15
80	22
100	47

Table 3. Data on the percentage of income of the population of the Republic of Tajikistan for 2019

20-percent population groups	Volume of cash income of the population, [% of total]	Cumulative share of cash income [%]	Triangle area	Rectangle area	Total shape area [S _i]
20	5	5	50	0	50
40	11	16	110	100	210
60	15	31	150	320	470
80	22	53	220	620	840
100	47	100	470	1060	1530
					3100

To do this, we divide the entire population of the Republic of Tajikistan into 5 equal groups, according to the number of households included in them (20% each).

The actual inequality line is drawn based on the data on the percentage of income attributable to every 20% of the population.

If the lower first part of the population received 5% of all income, then graphically it will be point A. To get point B, it is necessary to add the income percentage of the first 20% of the population with the income percentage of the second 20% of the population ($5\% + 11\%$), etc.

To plot the Lorenz curve, let us plot the values of the 1st column along the X-axis, and the values of the 3rd column, along the Y-axis. See Figure 1 for the result.

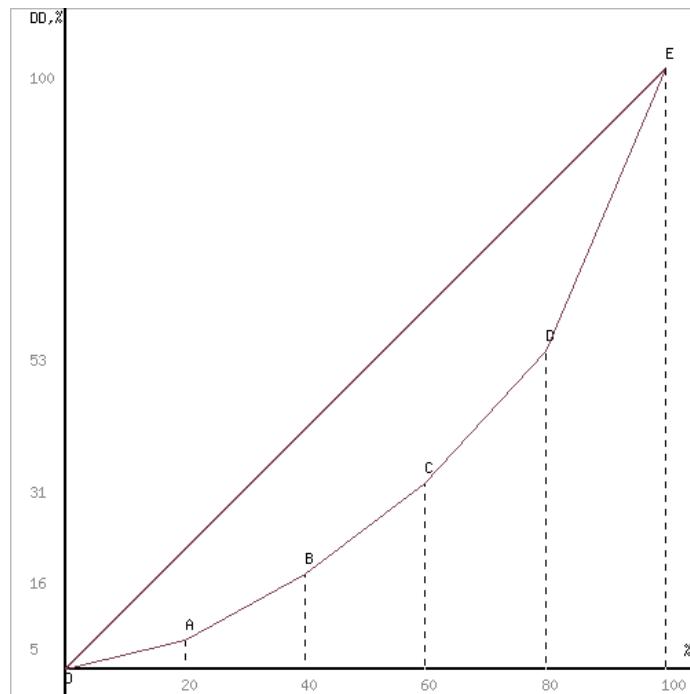


Figure 1. Lorenz Curve for Incomes of the Population of the Republic of Tajikistan

Let us calculate the income concentration ratios (Gini index).

The income concentration coefficient (Gini index) is the ratio of the area of the figure formed by the Lorenz curve and the line of absolute equality (S_1) to the area of the entire triangle OGE. For a rough estimate of the Gini coefficient, the segments of the Lorenz curve are represented as straight lines OA, AB, BC, CD, DE. Then the areas of triangles and rectangles are successively found and the area of figure S_2 is obtained. The higher the Gini index, the greater the inequality.

Thus, the level of inequality is determined using the Gini coefficient.

It is calculated as the ratio of the area of the OABCDE figure to the area of the triangle OEG. In order to determine the area of the figure lying below the Lorenz curve, we connect the points OA, AB, etc. with straight lines.

We lower the perpendicular to the X-axis and find the areas of the figures lying below points A, B, C.

The SABB'A area consists of a triangle and a rectangle. The BCCB' shape also consists of a triangle and a rectangle.

Adding all the areas of the figures, we get the area of the figure S_2 .

The area of the triangle OEG is found by the formula:

$$1/2 \cdot 100\% \cdot 100\% = 5000$$

Hence the Lorenz coefficient is:

$$(SOEG - S_2) / SOEG$$

$$(5000 - 3100) / 5000 = 0.38$$

Gini index.

To calculate the Gini coefficient, it is necessary to calculate the values of p_i and q_i . Here q_i is the cumulative total share of cash income (column No. 3 of Table 2) divided by 100. See result in Table 4.

Table 4. Calculation results

p_i	q_i	$p_i q_{i+1}$	$p_{i+1} q_i$
0.2	0.05	0.032	-
0.4	0.16	0.124	0.02
0.6	0.31	0.318	0.096
0.8	0.53	0.8	0.248
1	1	-	0.53
TOTAL		1.274	0.894

The Gini coefficient is:

$$KL = \sum p_i q_{i+1} - \sum p_{i+1} q_i = 1.274 - 0.894 = 0.38$$

The Gini coefficient varies from 0 to 1. Moreover, the more its value deviates from zero and approaches one, the more income is concentrated in the hands of certain groups of the population.

Decile coefficient of income differentiation.

The decile coefficient of income differentiation is the ratio of the average per capita money incomes of the last and first groups of the population. It shows how many times the incomes of 10% of the richest population exceed the incomes of 10% of the poorest population [10].

$$47/5 = 9.4$$

It should be noted that in developed countries, the maximum acceptable income gap is 7 times, and over 10 times is already considered a socially dangerous phenomenon.

7. Conclusion

In the course of the study, we identified the key positions that push people into poverty, we examined the Gini index data for the post-Soviet countries, on the basis of which Table 1 was formed. Analyzing the Gini index data given in Table 1, we can observe the growth trend of this indicator practically for all countries of the post-Soviet space. It is especially pronounced in the countries of Asia, where, in our opinion, the corruption component of inequality in the distribution of income is much higher than in the countries of Europe and the Baltic states. This feature is also demonstrated by the Lorenz curve for the Republic of Tajikistan with a strong deviation of the curve from the line of absolute equality. In addition to the factor of corruption, we believe that the very transition from one economic model of development to another against the background of a historically low level of development of the country's productive forces is very painful. It is this "feeling" that the post-Soviet countries of Central and Central Asia are undergoing at this stage of their historical development.

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