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Economic strategy for poverty reduction in the Kyrgyz Republic

Executive Summary

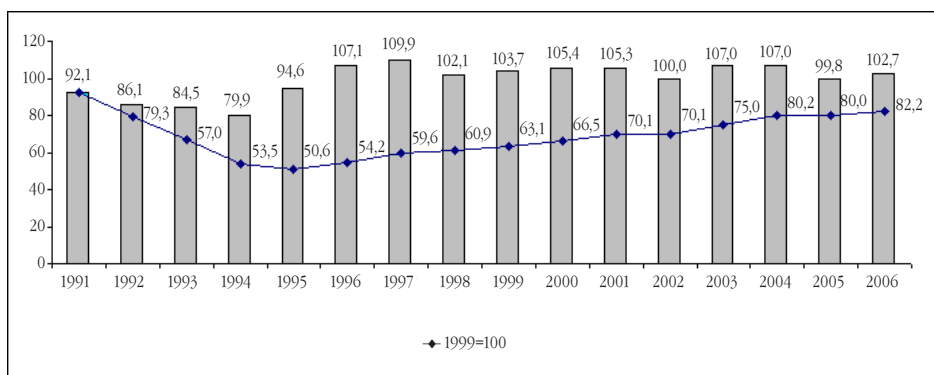
The tendencies of economic growth in the Kyrgyz Republic are presented here, along with a discussion of the methodology of assessing local poverty levels and figures reflecting the progress in alleviating poverty and extreme poverty. Together they show that an increase in average income will affect poverty more than would a re-distribution of resources aimed at reducing inequality, but also that the alleviation of extreme poverty requires that the poorest part of the population be directly supported and involved in the improving economy.

1. Tendencies of economic growth in the Kyrgyz Republic

As shown in fig.1.,the collapse of the Soviet Union and the resulting cutting of economic ties between its successor republics led to a deep economic crisis. In reality, the economies of the constituent republics of the Soviet Union had been highly integrated. Another reason for the economic crisis was the shock therapy model of reforming the economy which was chosen in the Kyrgyz Republic. As a result, the republic's GDP fell by 50% from 1991 to 1995.

Fig. 1. Growth rate of GDP

(Grey columns – in percentage of the previous year)



The economy of Kyrgyzstan had begun to recover by 1996, but this process was interrupted by a new economic crisis in 1998, caused by the economic and financial crisis in Russia. A new recovery phase ran from 2000 to 2004, but the “revolution” of March 2005 had a negative impact on economic growth because of political instability, which has continued till now.

Thus, the GDP of the Kyrgyz Republic has not yet reached the level achieved before the collapse of the Soviet Union. In 2006, the GDP was about 82% of the level of 1990.

2. On the methodology of identifying the poverty level in the Kyrgyz Republic

The methodology for identifying the poverty level utilized by the National Statistical Committee of the Kyrgyz Republic is based on the objective measurement of household expenses in accordance with the LSMS (Living Standard Measuring Surveys) of the World Bank. The first monthly household survey, covering 1,000 households and aimed at establishing poverty indicators in the Kyrgyz Republic, was conducted by the NSC from 1996 to 1999, in close cooperation with World Bank experts. The next step was a Household Budget Survey (HBS), conducted from 2000 to 2002, covering 3000 households. In 2003, a new Kyrgyz Integrated Household Survey (KIHS) was introduced thanks to cooperation with DFID UK. It is a quarterly survey, which covers 5,016 households, about 25% of which are changed every year.

Practice shows that the choice of method of defining poverty depends on the goals. Currently, the goal of Kyrgyzstan is poverty reduction and providing assistance to poor families in order to provide them with sufficient food, goods and essential services. Therefore, in Kyrgyzstan the level of poverty is assessed using the *absolute poverty level*. This approach is generally accepted in world practice and was adopted by Kyrgyzstan based on the recommendation of World Bank experts. This approach establishes those who do not have sufficient income in cash and in kind to purchase the minimum amount of food, goods and services essential for survival.

This reasonable approach to establishing the poverty level consists of identifying the main needs of the population for the minimum subsistence level of food and essential non-food goods and services.

Up until 1999, the breakdown of food for the one third of the population on the lowest incomes was initially assessed when identifying the minimum basket of food products, then the quantity of these products required to provide 2,100 Kkal per day was determined.

In Kyrgyzstan, the minimum basket of food products according to the data of surveys is composed of around eighty products. After identifying the food products needed, the necessary quantity/amount of food products was determined. The quantity/amount of actually consumed food products was converted into calories by multiplying the energy value of each particular product, and then determining the total number of calories and the servings of each product in this number.

For the KIHS, which began in 2003, the reference population used to set the food consumption pattern is the population in the third, fourth and fifth deciles of per capita consumption within the population as a whole. The food basket of this group is meant to reflect the food consumption patterns for the relevant, relatively low-income population.

The following table presents the composition of the minimum food basket derived from the consumption patterns of the reference population.

| Composition of the minimum food basket | | | | | | |
|--|--------------------------------|-----------------|---------------------|----------------|--------------------------|------|
| | Daily cost SOM | Annual cost SOM | Calories from group | Share by Value | Share by calorific value | |
| Food basket total | 15.04 | 5490 | 2100.0 | 1.00 | 1.00 | |
| Food groups | Bread and cereals | 5.59 | 2039 | 1349.7 | 0.37 | 0.64 |
| | Milk and dairy products | 1.11 | 406 | 101.4 | 0.07 | 0.05 |
| | Meat and meat products | 1.86 | 680 | 56.2 | 0.12 | 0.03 |
| | Fish | 0.02 | 6 | 0.3 | 0.00 | 0.00 |
| | Cooking oil and fats | 1.32 | 483 | 240.0 | 0.09 | 0.11 |
| | Eggs | 0.24 | 87 | 9.3 | 0.02 | 0.00 |
| | Potatoes | 0.97 | 354 | 95.5 | 0.06 | 0.05 |
| | Vegetables | 1.70 | 622 | 68.6 | 0.11 | 0.03 |
| | Fruit | 0.23 | 83 | 15.0 | 0.02 | 0.01 |
| | Sugar | 1.34 | 491 | 154.4 | 0.09 | 0.07 |
| | Tea, coffee, cocoa | 0.40 | 148 | 5.0 | 0.03 | 0.00 |
| | Non alcoholic beverages | 0.09 | 31 | 3.2 | 0.01 | 0.00 |
| Other food products | 0.17 | 61 | 1.5 | 0.01 | 0.00 | |

KIHS 2002 NSC Kyrgyz Republic, weighted

The assessment of the energy value of food in households is made based on the following formula

$$TC_h = \sum (FOOD_i * Kkal_i)$$

where, TC_h = total consumption of calories by a household

$FOOD_i$ = number of i -food products

$Kkal_i$ = number of calories in the i -food product

Groups of the essential *non-food items and goods* vary from country to country. There is no single group of non-food items and goods for all countries. The total minimum cost of essential non-food items and services is determined by taking the actual cost to the lowest

third of the population according to income. It is assumed that they buy mostly staple food and essential non-food items.

The total cost of the bare essentials of staple food and non-food items and services is regarded as *the poverty level* of the population. To determine the least protected strata of the population – the poorest of the poor – the *extreme poverty level* is calculated. The price of the bare essentials is regarded as the extreme poverty level.

The main indicator of poverty is the *poverty index* (poverty level in the country), identified as the part of the population whose volume of consumption is lower than the general poverty level. *The poverty level* is determined based on the following formula:

$$H = \frac{q}{n},$$

where **H** = the percentage of poor people (headcount)

q = numbers of the poor

n = total population

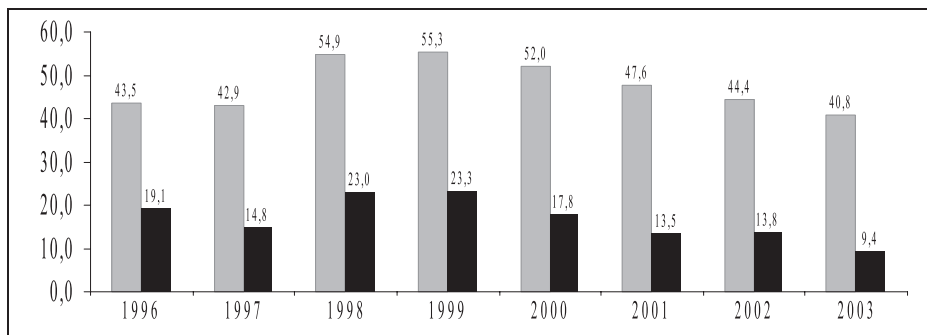
3. Main Kyrgyz poverty tendencies from 1996-2003

Fig.1 shows the results of changes in the poverty level in the Kyrgyz Republic from 1996-2003 based on the expenditures of the population. In 1997, the poverty level remained around 43%, although the rate of GDP growth was significant (9.9%). In contrast, the level of extreme poverty in 1997 fell by 4.3%. Therefore, it seems that the economic growth of 1997 reduced the level of extreme poverty. The economic crisis of 1998 immediately led to increases in both the poverty level (by 12%) and the extreme poverty level (by 8.2%).

Thus, the experience of the Kyrgyz Republic shows that economic growth does not always positively affect poverty reduction.

Fig. 2. Level of poverty in the Kyrgyz Republic from 1996-2003 (by expenditure)

(Gray column – poverty level, black column – extreme poverty level)



It is very interesting to focus on the results of poverty reduction in 2002. Although the level of poverty in 2002 fell by 3.2%, the level of extreme poverty in 2002 remained at approximately the same level or even grew by 0.3%.

In 2002, across the republic as a whole, the nominal average level of expenditure per capita increased by 6.5%, 4.3% in real terms, which shows that prices for consumer goods and services stabilized while the purchasing power of the population increased at the same time. In 2001, this growth was a nominal 13.3%, and in real terms only 6%.

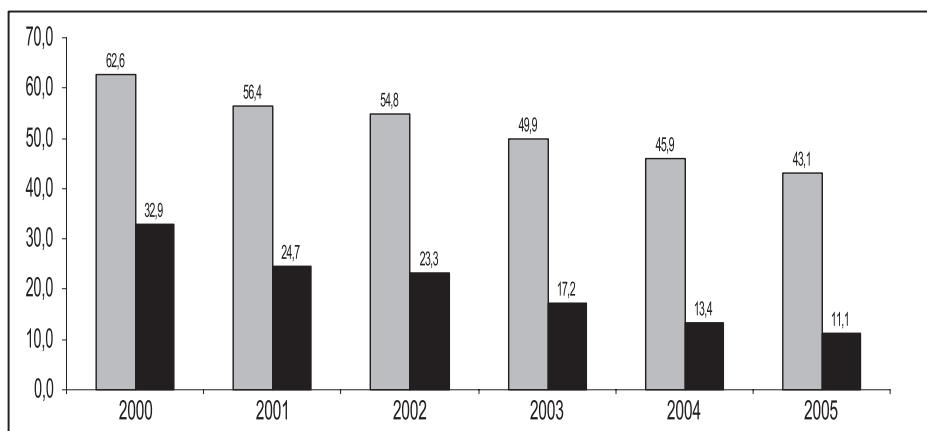
In 2002, in contrast to the previous year, there was increased inequality among the population. The ratio of expenditures between tenth decile and first decile groups increased from 7.0 times in 2001 to 7.8 times in 2002. Although in 2002 the state undertook measures to raise minimum pensions and allowances, evidently these measures were insufficient. This was probably the main reason for the increased inequality among the population.

The poverty level fell from 2000 till 2003. From our point of view, this was because in 1999 the Kyrgyz Republic was chosen as a pilot country for the Comprehensive Development Framework (CDF) programme of the World Bank, and because we started to implement our own National Poverty Reduction Strategy (NPRS) starting from 2000. Thus, the experience of the Kyrgyz Republic shows that economic growth does not always positively affect poverty reduction.

The same tendencies in poverty reduction are shown when measurements of poverty are based on the consumption patterns of the population; Fig. 2 shows the poverty level from 2000 to 2002, estimated using the poverty line value for 2003 corrected for inflation.

Fig. 3. Level of poverty in the Kyrgyz Republic from 2000-2005 (by consumption)

(Gray columns – poverty level, black columns – extreme poverty level)



The poverty level remains the highest, in the Naryn (67.8%) and Talas (56.2%) regions in spite of the progress achieved during the last two years. The lowest poverty level is in the Chui region (23.1) and city of Bishkek (28.2%), and the same can be seen when considering the level of extreme poverty, as shown in Fig. 4.

Fig. 4. Poverty level (based on expenditure) by regions of the Republic
In percentage of the total population

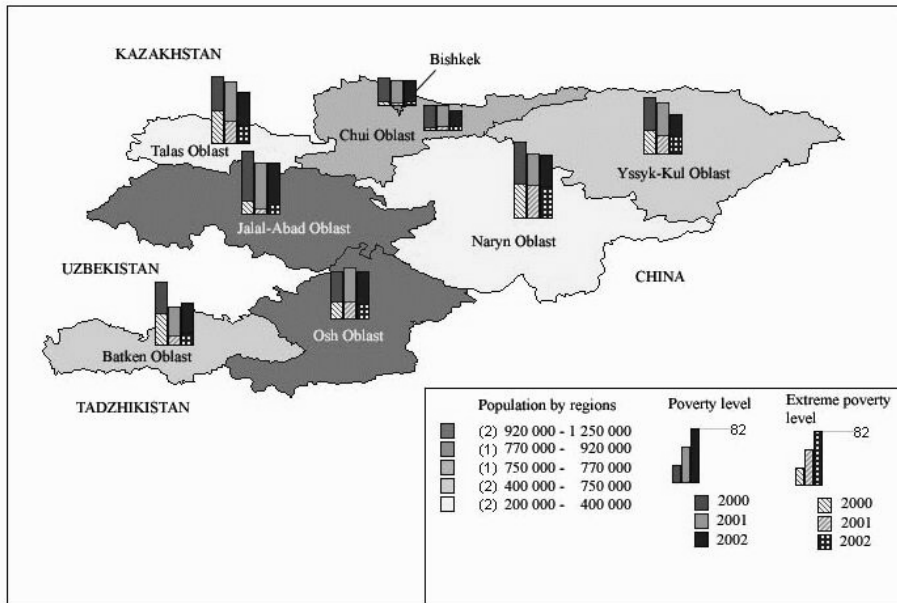


Table 1 shows how poverty indicators changed in urban and rural areas. The trend for poverty to fall in rural areas continued, but was more pronounced in 2002. Where urban poverty fell by 1.6 percent (by 2.7 percent in 2000), in rural areas it fell by 4.0 percent (by 5.4 percent in 2000).

Table 1. Level of poverty and extreme poverty of the population
(based on expenditures) by place of residence

| | | 2000 | 2001 | 2002 | Change in 2002 compared to 2001 | Average annual change in 2002 compared to 2000 |
|------------------------|--------------|-------------|-------------|-------------|---------------------------------------|--|
| Poverty | total | 52.0 | 47.6 | 44.4 | -3.2 | -3.8 |
| | urban | 43.9 | 41.2 | 39.6 | -1.6 | -2.15 |
| | rural | 56.4 | 51.0 | 47.0 | -4.0 | -4.7 |
| Extreme poverty | total | 17.8 | 13.5 | 13.8 | 0.3 | -2.0 |
| | urban | 12.7 | 9.6 | 12.0 | 2.4 | -0.35 |
| | rural | 20.5 | 15.6 | 14.7 | -0.9 | -2.9 |

A similar trend can be seen in the case of extreme poverty. In 2002, extreme poverty in rural areas fell by 0.9%, while in towns it increased (by 2.4%). As a result, in spite of significant

falls in extreme poverty compared to 2000, it even led to a small increase in extreme poverty as a whole across the republic (by 0.3 percent).

4. Assessment of the impact of growth and inequality in poverty reduction

The approach shown below, based on the work of N. Kakvani (see [1]), envisages research into poverty by considering its three major indicators:

- (i) percentage of poor
- (ii) average per capita shortfall in income among the poor (poverty gap)
- (iii) distribution of income (expenditures) among the poor

A wide range of poverty indicators, in which these three characteristics of poverty are combined in one way or another is described by the following general formula:

$$\theta = \int_0^z P(z, x) f(x) dx$$

where $f(x)$ is a function of the density of the distribution of income, z = the poverty line, and $P(z, x)$ is a function evaluating the level of poverty under the level of income per capita $x < z$. $P(z, x)$ is a homogenous function, i.e. $P(az, ax) = P(z, x)$, for each number $a > 0$. The function of the Forster-Greer-Thorbecke class used below may serve as an example.

The poverty level depends on two factors: the average level of income and the level of inequality in the distribution of these incomes. Therefore, poverty measurement may be written down as follows:

$$\theta = (\mu, L(p))$$

where

μ = the current average income in society

$L(p)$ = a function of the Lorenz Curve of relative income distribution

Growth impact can be measured by the influence of the change in the average population income (μ) to poverty (θ), when the function of relative distribution ($L(p)$) is constant.

The total impact of economic growth on poverty can be determined by breaking it down into two factors:

- (1) The impact of growth, when inequality does not change, and
- (2) The impact of changes in inequality, when average income in society is constant.

Index of the elasticity of growth – a measurement of the impact of growth; the obtained elasticity of the indicator of poverty (θ) regarding average income (μ) under the constant function of inequality (Lorenz Curve), can be expressed in the following way:

$$\eta_{\theta} = \frac{1}{\theta} \int_0^z x \frac{\partial P}{\partial x} f(x) dx$$

The index of growth elasticity is always negative, because the value $\frac{\partial P}{\partial x} < 0$.

For the indicators of poverty of the Forster-Greer-Thorbecke functional class, where

$$P(z, x) = \left(\frac{z - x}{z} \right)^{\alpha},$$

z = poverty level, the formula for elasticity is as follows

$$\eta_{\alpha} = -\frac{\alpha(\theta_{\alpha-1} - \theta_{\alpha})}{\theta_{\alpha}},$$

while at $\alpha=1$, we have

$$\eta_1 = -\frac{\mu^*}{z - \mu^*},$$

where μ^* is the average income of the poor.

From the last formula, it can be seen that the value of the index of elasticity depends on the ratio of average income (or expenditures) to the poverty line. The lower the value of the ratio, the higher the value of the poverty depth elasticity.

Index of the elasticity of inequality – Measuring the impact of inequality is a very difficult task, because inequality can change in an infinite number of ways. In this case, a simple assumption is made that changes in inequality are expressed by a proportional change in the Lorenz Curve. Using this assumption, poverty elasticity with respect to the Gini index can be written down as follows:

$$\varepsilon_\theta = \frac{1}{\theta} \int_0^z \frac{\partial P}{\partial x} (x - \mu) f(x) dx$$

The formula shows that a one percent increase in the Gini coefficient leads to an increase in the poverty level by the index of inequality elasticity, (on the condition that the poverty line will be lower than the average income in society).

For Forster-Greer- Thorbecke poverty indicators, the formula for elasticity acquires the following form:

$$\varepsilon_\alpha = \alpha + \frac{\alpha\theta_{\alpha-1}(\mu - z)}{z\theta_\alpha},$$

while at $\alpha=1$, we have

$$\varepsilon_1 = \frac{\mu - \mu^*}{z - \mu^*}$$

It is possible to see that ε_1 increases monotonically with the growth of the μ^*/z ratio. This statement means that an increase in the unfavourable impact of the growth of inequality will be higher under a lower poverty level.

Inequality Growth Trade-off Index (IGTI) – Economic growth increases average income, which has a positive impact on poverty reduction. If economic growth also increases inequality, then the question is – how do inequality and growth correlate? If the Gini index increases by one percent, what level of economic growth would be necessary to keep poverty at the same level? In the long run, proportional change in poverty can be expressed as:

$$\frac{\partial \theta}{\theta} = \eta_\theta \frac{d\mu}{\mu} + \varepsilon_\theta \frac{dG}{G},$$

where the first component in the right-hand part measures the growth impact on poverty (impact on average income), while the second component measures the impact of change in the Gini index on poverty.

Assuming the complete proportional change in poverty indicators as zero, we have the Inequality Growth Tradeoff Index (IGTI) as

$$IGTI = \varphi_\theta = \frac{\partial \mu}{\partial G} \times \frac{G}{\mu} = -\frac{\varepsilon_\theta}{\eta_\theta}$$

For example, when assuming that the IGTI stands as 3.0, this means that a one percent increase in the Gini index entails that the growth rate should rise to three percent in order to reduce the negative affect of the increase in inequality.

It is easy to prove that the IGTI, for example for the poverty gap, is given by the following formula

$$\theta_1 = \frac{\mu - \mu^*}{\mu^*},$$

which shows that the index is a decreasing function of μ^* . It means that the higher the poverty gap, the higher is the value of the index, and subsequently the higher the effectiveness of the support to the poorest part of the population to alleviate poverty.

5. Impact of the growth in incomes and reduced inequality on poverty reduction

The calculations of elasticity factors lead to the following results. (see the table 2.) For 2006, an increase in average incomes by one percent would lead to a decrease in the poverty gap¹ by 3.39 percent, whereas a fall in the Gini index of one percent would reduce the poverty gap by 2.87 percent. Thus, the IGTI is equal to 0.85. It highlights the effectiveness of increasing average income as compared to a re-distribution of existing resources aimed at reducing inequality. In other words, preconditions were formed for a quick fall in the poverty gap (and, as a result, in the poverty level) when average income rose.

Considering these parameters pertaining to the *extreme poverty level*, we will receive somewhat different results. Increasing inequality (Gini coefficient) by one percent will widen the extreme poverty gap by 5.49 percent, and the severity² of extreme poverty by 8.77 percent. Similarly, growth in the well being of the population by one percent can narrow the extreme poverty gap by 5.49 percent and its severity by 5.65 percent.

¹ **Poverty gap** – Forster-Greer-Thorbecke's class indicator (when $\alpha=1$). This is the average shortfall in income for a household to escape poverty. For those households where expenses (incomes) are above the poverty line, poverty depth is equal to zero.

² **Severity of poverty (average-square of poverty depth)** – Forster-Greer-Thorbecke's class indicator (when $\alpha=2$). This indicator takes into account not only the distance to the poverty line (poverty gap), but also inequality among the poor, i.e. there is a greater weight on those households, which are deeper below the poverty line than other households.

Table 2. Indicators of poverty in the Kyrgyz Republic from 2000-2005 (by consumption)
household survey results

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|--------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| CPI | 109.6 | 106.9 | 102.1 | 103.1 | 104.1 | 104.3 | 105.6 |
| Gini coef. | 0.301 | 0.287 | 0.292 | 0.298 | 0.331 | 0.271 | 0.324 |
| poverty line (in soms) | 7759.82 | 8295.25 | 8469.45 | 8732.13 | 9090.15 | 9604.80 | 10325.00 |
| <i>Poverty gap</i> | | | | | | | |
| Elasticity of growth | -1.54 | -1.78 | -1.85 | -2.25 | -2.49 | -3.12 | -3.39 |
| Elasticity of inequality | 0.55 | 0.71 | 0.75 | 1.57 | 2.01 | 2.34 | 2.87 |
| IGTI | 0.35 | 0.40 | 0.41 | 0.70 | 0.81 | 0.75 | 0.85 |
| <i>Severity of poverty</i> | | | | | | | |
| Elasticity of growth | -2.10 | -2.41 | -2.41 | -3.04 | -3.02 | -3.84 | -3.96 |
| Elasticity of inequality | 1.27 | 1.53 | 1.62 | 2.88 | 3.45 | 3.90 | 4.53 |
| IGTI | 0.60 | 0.64 | 0.67 | 0.95 | 1.14 | 1.02 | 1.15 |
| Extreme poverty line(in soms) | 4878.41 | 5215.02 | 5324.54 | 5489.70 | 5714.78 | 6114.70 | 6695.60 |
| <i>Poverty gap</i> | | | | | | | |
| Elasticity of growth | -2.83 | -3.15 | -3.07 | -4.24 | -3.57 | -6.26 | -5.49 |
| Elasticity of inequality | 2.17 | 2.75 | 2.84 | 5.56 | 5.79 | 8.86 | 8.77 |
| IGTI | 0.77 | 0.87 | 0.92 | 1.31 | 1.62 | 1.42 | 1.60 |
| <i>Severity of poverty</i> | | | | | | | |
| Elasticity of growth | -3.44 | -3.82 | -3.62 | -4.97 | -3.60 | -6.74 | -5.65 |
| Elasticity of inequality | 3.67 | 4.46 | 4.54 | 8.06 | 7.88 | 11.47 | 11.16 |
| IGTI | 1.07 | 1.17 | 1.26 | 1.62 | 2.19 | 1.70 | 1.97 |

Knowledge of these factors (see Table 2) enables the effective choice of priorities between measures aimed at increasing average incomes and measures aimed at supporting the least well-off part of the population.

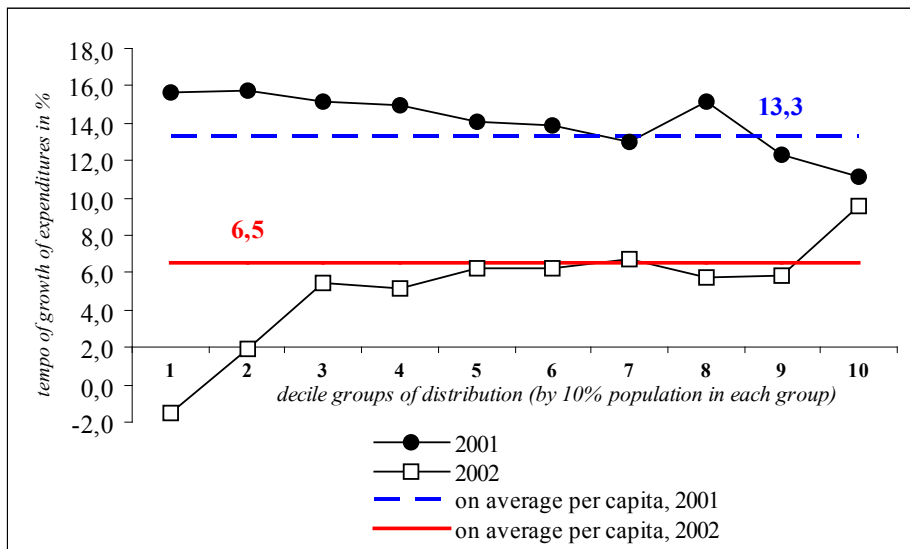
On the basis of the obtained results, let's consider probable causes of poverty reduction. In 2001, one of the main causes of poverty reduction was the significant growth of real incomes among the poor population, achieved as a result of government measures that were adopted with the aim of improving the well-being of the low-income population (increased salaries, pensions and allowances and development of a system of micro-crediting).

In 2002, judging by statistical data, the poverty level fell due to the development of small and medium enterprises. This was demonstrated by an increase in the number of registered private small enterprises, providing various types of services to the population (retail, trade, restaurants and cafeterias, passenger transportation and so on). There was also an increase in the indices of physical volumes in such sectors of the economy as the clothing, textile and food industries and a number of other types of consumer activity.

Furthermore, increased levels of disbursed micro-credits to the population were seen in 2002 (from 1.26 billion KGS in 2001 to 1.68 billion KGS in 2002) and the number of beneficiaries of micro-credits (from 98.4 thousand people to 132.6 thousand people).

Due to the above factors, increased spending (in fixed prices) among almost all the population was seen in 2002 (by 4.3%), except in the first decile group (see Graph 2). Taking into account that the category of extremely poor for the most part includes families with many children, pensioners and invalids, as well as low-paid personnel of budget organizations, it is possible to point out that their standard of living improved to some extent.

Fig.5.: Rate of growth of spending per capita by decile groups, 2001-2002 (in nominal terms)



These groups of the population are to a greater extent dependant on government support in the form of pensions and allowances, the real value of which fell due to inflation. If we

compare the rate of spending growth per capita by decile groups (ten percent) it is possible to see once again increased inequality, though the overall level of poverty had fallen.

The results obtained show that a strategy of economic growth, combined with a drop in inequality via targeted social assistance, will have the greatest effect on the poorest groups of the population (*the pro-poor growth strategy*).

However, it is important to point out that the majority of the population, which falls into the first and second decile groups (for the most part invalids, pensioners, families with many children and low-paid workers) will not, in all probability, be able to use the greater opportunities presented by higher standards of living (for instance, the possibility of receiving micro-credits), and, therefore, need direct support from the government).

6. Conclusion

This article has covered the methodology of assessing Kyrgyz poverty, and presented figures reflecting the progress in reducing poverty and extreme poverty. It has argued that an increase in average incomes will have a greater impact achieving the goals set out in the CDF and NPRS than would a re-distribution of resources with the aim of reducing inequality. However, to reduce extreme poverty, the policy of the government must to a larger extent be aimed at direct support to and involving the poorest part of the population in economic growth.

Bibliography

1. Nanak Kakwani – Volume 18 no. 2 “Asian Development Review” – 2000 page 74-84.
2. Martin Ravallion – «Poverty Lines in theory and Practice», LSMS working document No.133 World Bank, 1998.
3. Martin Ravallion – «Comparative Assessments of Poverty», Working Paper №88 R, Statistical Survey of Population Living Standards, 1999.
4. Deaton, Angus, – “The Measurement of Welfare. Theory and Practical Guide-Lines”, Living Standard Measurement Study Working Paper No. 7, World Bank, 1980.
5. Kudabayev Z.I. – «Economic Development of the Kyrgyz Republic», Chapter 5, §20 and §21, Bishkek 2001.
6. Kudabaev Z.I, Minbaev M.T. – “Poverty reduction in the Kyrgyz Republic and the accuracy of measuring it”, Statistical Journal of the UNECE, V. 20, # 3, 4, 2003, pp. 241-254.
7. Zarylbek I. Kudabaev, Croissance économique et diminution de la pauvreté au Kirghizstan, StatEco, N 101, 2007 19-27, INSEE, Paris, France