TENDENCIES OF POVERTY REDUCTION IN THE KYRGYZ REPUBLIC

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Abstract

Monitoring of the level and quality of life of the population is the important analytical tool of government's socio-economic policy. It allows to carry out an analysis of the current level of socio-economic development of the state and to find ways for the further improving of population well-being. In this paper authors focused on the analyzing the poverty indicators in Kyrgyzstan. Methodology of assessment of the Kyrgyz poverty is considered. Figures reflecting the progress in alleviation of poverty and extreme poverty are presented. It is shown that the increase of the average income will more affect on poverty than re-distribution of resources with the purpose of inequality reduction. At that, for the alleviation of extreme poverty the strategy of direct support of the poorest population should be conducted. A short analysis of causes for poverty reduction was carried out.

Key Words: Gross Domestic Product (GDP), Economic Growth, Poverty, Poverty Gap, Severity of Poverty.

КЫРГЫЗ РЕСПУБЛИКАСЫНДА ЖАКЫРЧЫЛЫКТЫ АЗАЙТУУНУН ТЕНДЕНЦИЯЛАРЫ

Аннотация

Бул макалада Кыргызстандагы кедейчиликтин көрсөткүчтөрүн өлчөө метo–дологиясы каралган жана кедейчиликти кыскартуу боюнча топтолгон статистикалык маалымат анализделген. Ошондой эле өлкөдөгү кедейчилик–тин себептери кыскача каралган. Мисалы, өлкөдө кедейчиликти кыскартууда калктын орточо кирешесин көбөйтүү (ички дүң продукциялардын өсүшү) маанилүү болсо, ошол эле учурда адамдардын киреше боюнча болгон

айырмасын көбөйтүүгө жол берилбеш керек экени көрсөтүлгөн. Мындан тышкары, эң кедей адамдарга мамлекет түздөн–түз жардам көрсөтүшү абзел. Бул анализдер жана жасалган жыйынтыктар өлкөдө кедейчиликти кыскартуу боюнча мамлекеттик программаларды иштеп чыгарууда жардамы тиет.

Ачкыч сөздөр: ички дүң продукциясы, экономикалык өсүш, кедейчилик, кедейчиликтин тереңдиги, кедейчиликтин курчтугу.

On methodology of identification of the poverty level in Kyrgyz Republic

Methodology of identification of the poverty level, applied by the National Statistical Committee (NSC) of the Kyrgyz Republic, is based on the objective measuring of expenses of households in accordance with LSMS (Living Standard Measuring Surveys) of the World Bank.

First monthly based households survey covered 1000 households and aiming to receive the poverty indicators in the Kyrgyz Republic were conducted by the NSC starting from the year 1996 up to the 1999 in close cooperation with the World Bank experts. Next step was Households Budget Survey (HBS) were conducted from 2000 up to the 2002 and covered 3000 households. Starting from the year 2003 new Kyrgyz Integrated Households Survey (KIHS) was introduced thanks to the cooperation with DFID UK. It is quarterly based survey which covers 5016 households and about 25% of them substitutes each year.

Practice shows that the choice of methods of poverty identification depends on the set goals. At the present time the goal of Kyrgyzstan is poverty reduction and providing assistance to poor families in order to provide them in sufficient measure with food, goods and essential services.

Therefore in Kyrgyzstan the level of poverty is assesses with the application of the method of *absolute poverty level.* This approach is generally accepted in the world practice and was adopted by Kyrgyzstan based on the recommendation of the World Bank experts. This approach allows establishing persons, not having sufficient income in cash and in kind for consumption of a necessary amount of food, goods and essential services.

The reasonable approach towards the identification of the poverty level consists in identification of main needs of the population. The main need of a human being is nutrition. Food products, necessary for the achievement of the recommended amount of food consumption make up a part of vitally important consumption. Essential nonfoods and services, which belong to the category of the most necessary ones also, should be added to them.

Up to the 2002 the structure of food of 1/3 of the population with lowest incomes is assessed initially when identifying the minimum set of food products. Then the necessary quantity of these products is identified at which the established level of consumption of food energy (2100Kkal per day) is achieved.

In Kyrgyzstan the minimum set of food products according to data of surveys includes around 80 names. After identification of the necessary set of food products, necessary

quantity/amount of food products is identified. For this purpose the quantity/amount of actually consumed food products is converted into calories by multiplication by energy value of each particular product, and then a total sum of calories and the share of each product in total calories are identified.

For the KIHS which started from the 2003 the reference population to set the food consumption pattern is the population of people in the third, forth and fifth deciles of the per capita consumption distribution among all individuals. The food basket of this group is meant to capture the food consumption patterns for a relevant, relatively low-income population.

The following table presents the composition of minimal food basked derived from the consumption patterns of reference population.

Composition of minimal food basket						
		Daily cost SOM	Annual cost SOM	Calories from group	Share by Value	Share by caloric 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
	Fruits	0.23	83	15.0	0.02	0.01
	Sugar	1.34	491	154.4	0.09	0.07
	Tea, cofee, 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

Assessment of energy value of food in households is made as follows. The following formula is calculated

$TC_h = \Sigma (FOOD_i * Kkal_i)$

where, TC_h – total consumption of calories by a household

$FOOD_i$ – number of *i*-food product

$Kkal_i$ – number of calories in the *i*-food productA set of minimum necessary *nonfoods and goods* is different in various countries. There is no unified set of nonfoods and goods for all counties. The sum of minimum necessary costs for nonfoods and services is identified based on the actual costs of 1/3 of the population with the lowest incomes. It is assumed that they buy mostly articles of prime necessity.

The sum of cost of a minimum set of food products and a minimum set of nonfoods and services is regarded as *the poverty level* of the population. For the identification of the least protected strata of the population –the poorest among the poor- indicator of the *extreme poverty level* is calculated. The price of a minimum set of necessary food products is regarded as the extreme poverty level.

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

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

where H – the share of the poor population (headcount)

q – number of the poor population

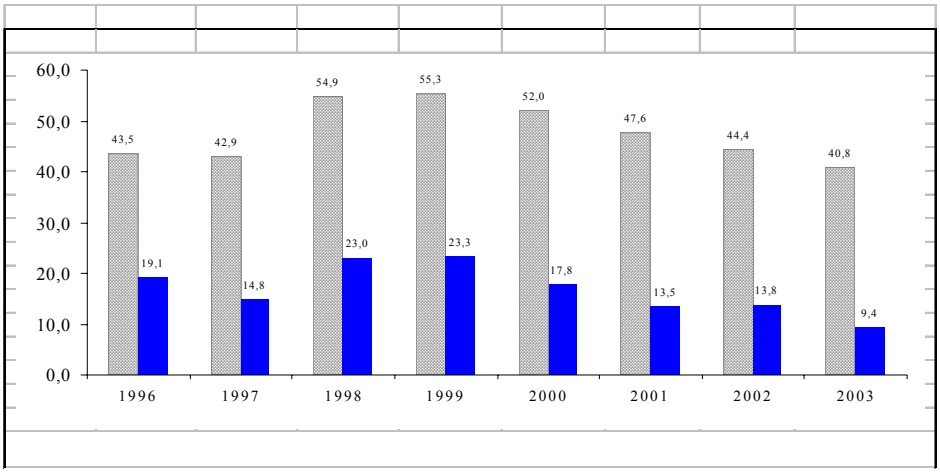
n – total population

Main Kyrgyz poverty tendencies in 1996-2003

In fig.1 the results of change of poverty level in the Kyrgyz Republic in 1996-2003, measured based on the expenditures of the population, are presented. As it shown in fig.1 in 1997 the poverty level did not change remains around 43%, although the GDP growth rate was significant (9.9% in 1997). In contrast, the level of the extreme poverty in 1997 reduced by 4.3%. So it seems that economic growth of 1997 impacted on reduction of the extreme poverty level. The economic crisis of the year 1998 immediately led to the increasing of both, poverty level by 12% and extreme poverty level by 8.2%.

So the experience of the Kyrgyz Republic shows that the economic growth not always positively impacts on poverty reduction.

Fig. 1. Level of poverty in Kyrgyz Republic in 1996-2003 (by expenditure).
(Gray column- poverty level, blue column- extreme poverty level)



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

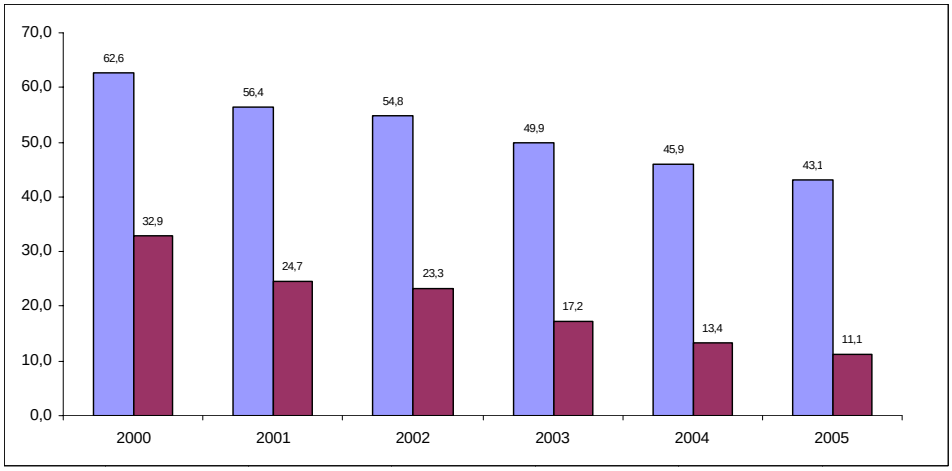
In 2002 as a whole across the republic the nominal average level of expenditures per capita of the population increased by 6,5%, in real terms by 4,3%, which shows stabilization of prices on consumer goods and services at simultaneous increase of the purchasing capacity of the population. In 2001 this growth made up in nominal terms 13,3% and in real terms-6%, respectively.

In 2002 in contrast to the previous year an increase of inequality among the population is observed. Correlation of expenditures of the tenth decile and the first decile groups increased from 7,0 times in 2001 to 7,8 times in 2002. Though in 2002 the state undertook measures on the increase of the size of minimum pensions and allowances, evidently these measures were insufficient, which became, probably, the main reason for the increase of inequality among the population.

As for reduction of the poverty level it started from the year 2000 and continued up to 2006. From our point of view, it is because in the 1999 Kyrgyz Republic was chosen as a pilot country of the Comprehensive Development Framework (CDF) program of the World Bank and started to implement own National Poverty Reduction Strategy(NPRS) program starting from the year 2000. So the experience of the Kyrgyz Republic shows that the economic growth not always positively impacts on poverty reduction.

The same tendencies of the poverty reduction shows the results of the poverty, measured based on the consumption of the population, Fig. 2. The results of poverty level for the years of 2000 to 2002 were estimated using poverty line value for the year 2003 corrected for inflation.

Fig. 2. Level of poverty in the Kyrgyz Republic in 2000-2005 (by consumption).
(Blue columns-poverty level, brown columns- extreme poverty level)



Poverty level remains the highest, in spite of the progress achieved during recent two years, in the Naryn (67,8%) and the Talas (56,2%) regions. The lowest poverty level is in the Chui region (23,1) and in Bishkek (28,2%). The same regions are polar during consideration of the level of extreme poverty, what is shown in Fig. 3.

Fig. 3. Poverty level (based on expenditures) by regions of the Republic
Inpercenttototalpopulation

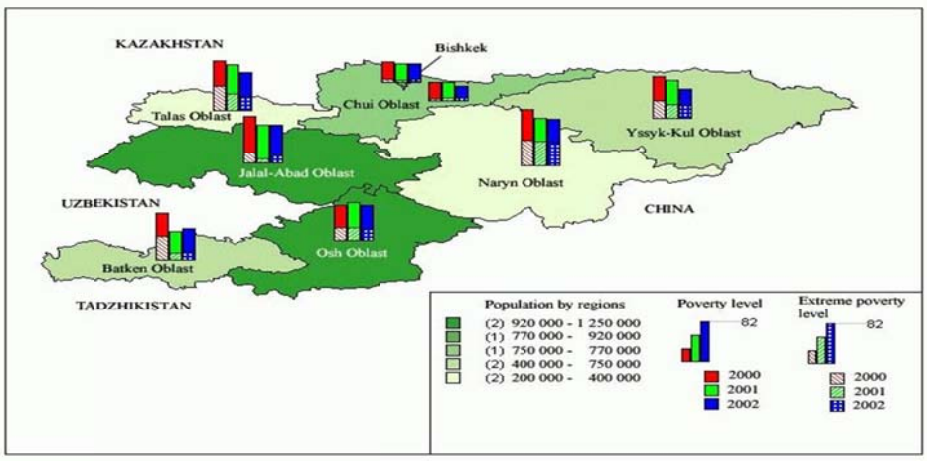


Table 1 gives an impression of how poverty indicators changed in urban and rural area. A tendency of leading tempos of poverty reduction in rural area continues, at that in 2002 this tendency was more pronounced. If urban poverty reduced by 1,6 percent (in 2000 by 2,7 percent), rural area reduced by 4,0 percent (in 2000 by 5,4 percent).

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

		2000	2001	2002	Change in 2002 as compared to 2001	Average annual change in 2002 as 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

The same tendency is even better formulated in the case of extreme poverty. In 2002 extreme poverty in rural area reduced by 0,9 percent, while in towns it increased (by 2,4 percent). As a result, in spite of significant reduction of extreme poverty as compared to 2000, it had lead even to a small growth of extreme poverty as a whole across the republic (by 0,3 percent).

Assessment of impact of growth and inequality on poverty reduction

The below approach, based on work of N. Kakvani (see [1]), envisages research of the situation with poverty through consideration of its three major indicators:

(i) percent of the poor

(ii) average per capita deficit of income among the poor (poverty gap)

(iii) distribution of incomes (expenditures) of the poor

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

A wide range of poverty indicators, in which these three characteristics of poverty are combined in one or another way is described by the following general formula:
where $f(x)$ –function of density of distribution of income, z – poverty line, while $P(z, x)$ – function, evaluating the level of poverty under the level of income per capita $x < z$. At that, $P(z, x)$ – a homogenous function, i.e. $P(az, ax) = P(z, x)$, for each figure number $a > 0$. The used below function of the Forster-Greer-Thorbecke's class may serve as an example.

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

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

where

μ - current average income in the society

L(p) – function of Lorenz curve of relative income distribution

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

Total impact of economic growth on poverty can be defined through breaking down into two factors:

(1) impact of growth, when inequality is not changing and

(2) impact of changes in inequality, when average income in a society is constant.

Index of elasticity of growth. For measuring the impact of growth the obtained elasticity of the indicator of poverty (θ) with respect to average income (μ) under the constant function of inequality (curve of Lorenz), can be expressed in the following way:

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

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

$$P(z,x) = (z - x/z)^\alpha,$$

z – poverty level, the formula of elasticity is as follows

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

while at α = 1, we have

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

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

Out of the last formula it is seen that the value of index of elasticity depends on the ratio of average income (or expenditures) and poverty line. The lower id the value of ratio, the higher is the value of the poverty depth elasticity.

Index of elasticity of inequality. Measuring of an impact of inequality is a very difficult task, because inequality can change in infinite number of ways. In this case a simple assumption is made that changes of inequality are expressed by a proportional changing of the Lorenz curve. Using this assumption, poverty elasticity with respect to 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 increasing of the Gini coefficient by 1 percent leads to increasing of the poverty level by the index of inequality elasticity, (under the condition that the poverty line will be lower, than the average income in the 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 α =1, we have

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

It is possible to see that ε_1 increases monotonically with the growth of μ^*/z ratio. It means that the increase of unfavorable impact of 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 the economic growth increases also the inequality, then the question is how inequality and growth correlate? If the Gini index is being increased by 1 percent, than what should be the economic growth to keep poverty at the same level? In the long run, proportional change in poverty can be written down 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

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

For example, when assuming IGTI as 3.0, this means that with increasing of Gini index by 1 percent the growth rate should rise to 3 percent in order to reduce the negative affect of inequality increase.

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

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

which shows, that index is a decreasing function from μ*. It means that the higher is the poverty gap, the higher is the value of the index, and then, the higher is the effectiveness of the support to the poorest population in poverty alleviation.

Impact of growth of incomes and reduction of inequality on poverty reduction

The calculations of elasticity factors lead to the following results (see the table 2.) For the year of 2006 an increase of average level of incomes by one percent will lead to decrease of poverty gap[1] by 3.39 percent. Whereas the reduction of the Gini index by one percent will reduce poverty gap by 2.87 percent. Thus, IGTI is equal to 0.85. It singularly points at an effectiveness of the increase of average level of incomes in comparison with re-distribution of resources (aimed at reduction of inequality). In other words, preconditions were formed for a fast decrease of the poverty gap (and, as a result, of poverty level) under condition of the following growth of average level of incomes.

Considering these parameters pertaining to the *extreme poverty level*, we will receive somewhat different results. Increase of inequality (Gini coefficient) by 1% will make the extreme poverty gap deeper by 5.49%, while the severity[2] of the extreme poverty - by 8,77%. Respectively, growth of well being of the population by 1% can decrease the extreme poverty gap by 5.49%, and a severity – by 5.65%.

[1] ***Poverty gap*** – Forster-Greer-Thorbecke's class indicator (when α=1). It is an average amount of lacking income for a household for its breakthrough from the status of poverty. For those households, which expenses (incomes) are higher than poverty line, poverty depth is equal to zero.

[2] ***Severity of poverty (mean-square poverty depth)*** **- Forster-Greer-Thorbecke's class indicator (when α=2).** This indicator takes into account not only the distance to the poverty line (poverty gap), but also inequality among the poor. I.e. the bigger weight is on those households, which are deeper than other households below poverty line.

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

	2000	2001	2002	2003	2004	2005	2006
CPI	109,6	106,9	102,1	103,1	104,1	104,3	105,6
Jini 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
Poverty gap							
Elastity of growth	-1,54	-1,78	-1,85	-2,25	-2,49	-3,12	-3,39
Elastity 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
Severity of poverty							
Elastity of growth	-2,10	-2,41	-2,41	-3,04	-3,02	-3,84	-3,96
Elastity 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
Poverty gap							
Elastity of growth	-2,83	-3,15	-3,07	-4,24	-3,57	-6,26	-5,49
Elastity 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
Severity of poverty							
Elastity of growth	-3,44	-3,82	-3,62	-4,97	-3,60	-6,74	-5,65
Elastity 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) allows effectively define priorities between the measures, aimed at growth of average incomes and measures, aimed at support of the least well-off strata of the population.

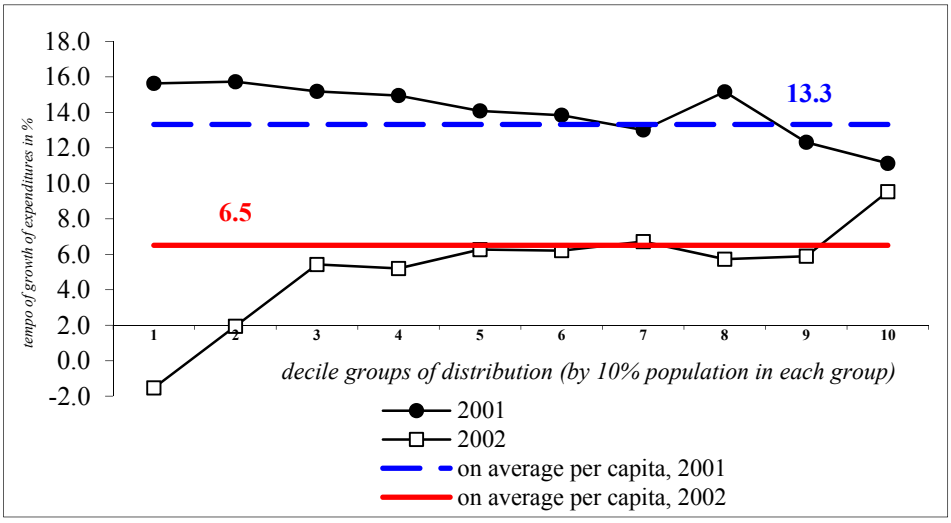
On the basis of the obtained results, let's consider probable causes for poverty reduction. In 2001 one of the main causes for poverty reduction was significant growth of real incomes of the poor population, achieved due to governmental measures, adopted with the purpose of improvement of well-being of low-income population (increase of salaries, pensions and allowances and development of the system of micro-crediting).

In 2002, judging by statistical data, reduction of poverty level was achieved due to development of small and medium enterprise. It is proved by the increase of the number of registered private small enterprises, providing various types of services to the population (retail trade, restaurants and cafeterias, services of passenger transportation and so on). Also the increase of indexes of physical volumes in such sectors of economy as clothing industry, textile industry, production of food products and a number of other types of economic activity, focused directly at consumption by the population took place.

Further growth of amounts of disbursed micro-credits was observed in the sphere of micro-crediting of the population in 2002 (from 1,26 billion KGS in 2001 to 1,68 billion KGS in 2002) and a number of beneficiaries of micro-credits (from 98,4 thousand people to 132,6 thousand people).

Due to the above factors, growth of expenditures (in fixed prices) among almost total population was observed in 2002 (by 4,3%), except first decile group (see Graph 2). Taking into account that for the most part families with many children, pensioners and invalids, as well as low-paid personnel of budget organizations fall into the category of extremely poor, it is possible to point out that the situation with the level of their well-being had aggravated to some extent.

Fig.4. Tempo of growth of per capita expenditures by decile groups, 2001-2002гг. (in nominal terms)



These groups of the population are to a greater extent dependant on governmental support in the form of payment of pensions and allowances, the real value of which decreased due to inflation. If we compare the tempo of growth of expenditures per capita of the population by decile groups (ten percent) groups of distribution, it is possible to make sure once again in the increase of inequality, though as a whole the level of general poverty had reduced.

The obtained results show that a strategy of economic growth in combination with reduction of inequality by way of addressed social assistance will have the greatest effect for poorest groups of the population (*the pro-poor growth strategy*).

At that, it is important to point out that the main part of the population, which falls into the 1-st and 2-nd decile groups (for the most part invalids, pensioners, families with many children, low-paid workers in all probability will not be able to use the expanding opportunities of the increase of their well-being (for instance, possibilities of receiving micro-credits, and, therefore, need direct support from the state.

Conclusion

Methodology of assessment of the Kyrgyz poverty is covered in the article. Figures reflecting the progress in the activity for reduction of poverty and extreme poverty are presented. It is shown that the increase of the average level of incomes will have a big effectiveness for the achievement of goals, set forth by CDF and NPRS, in comparison with the re-distribution of resources with the purpose of inequality reduction. At that, for the reduction of extreme inequality the policy of the government must be to a larger extent targeted at the strategy of support of the poorest part of the population.

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