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## Gross regional product as the indicator of differentiation of social-economic development of the regions (Russia in transition)

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**GROSS REGIONAL PRODUCT: INDICATOR OF DIFFERENTIATION  
OF THE REGION'S SOCIAL-ECONOMY DEVELOPMENT  
(RUSSIA IN TRANSITION)**

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**Abstract**

The Gross Regional Product (GRP) is become the main indicator of the social-economy development of region in conditions of transition of Russian's statistics on System of National Accounts (SNA). State Committee of the Russian Federation on Statistics has published the official data of GRP since 1994. In paper gives a brief survey of the methodology of GRP estimation, it's distinct from the methodology of GDP estimation (total GRP composes 80-85% of Russian GDP), principle of the estimation of the hidden, informal economic activities. It's analyze the GRP by 79 regions of Russian Federation, including the territorial structure of GRP, differentiation of GRP per capita. The regression equations of GRP per capita are used for estimation GRP by 9 autonomous areas (official data for the autonomous areas are absent). It's comment the alternative estimations of GRP. In the paper is estimated the time intervals of the region's rapprochement by GRP per capita in condition of different hypothesis about the economic growth rate.

## 1. Introduction

Transition of Russian statistics on the System of National Accounts (SNA) coincide with the processes of decentralization of Russian politician-economic system, expansions of regions independence, developments of federal relations. Therefore, the *regionalization* of SNA is very topical for Russia. In the first place, it's necessary to elaborate regional social-economic indicators for the 89 subjects to Russia Federations (RF).

The Gross Regional Product (GRP) is become the main regional indicator in accordance with logic of SNA. In the beginning, the experimental estimations of GRP by the subjects of RF were conducted scientific and expert organizations, in particular, Council for location of productive forces (SOPS) and Russian-European centre of the economic policy (Kosarev 1996; Teplyxina, Schistijakov 1996) on the base of the statistical data of the State Committee of the Russian Federation on Statistics (Goskomstat). Goskomstat has published the official data of GRP since 1994 (Goskomstat, 1998).

Russia is oriented on the international standards, which was recommended by Statistical Commission of UN, IMF, IBRD, OECD and Commission of the European Communities (SNA'93), from the beginning of working by inculcation of SNA. Insignificant departures from it are related with transition period of Russian economy (for example, high rate of habitation subsidies) or with lacks of data base. The main methodological positions by SNA are discuss with the representatives of the international organization regularly. IMF has published the official data of Russian GDP in own handbooks and refused to use alternative estimations of GDP. It means that the data of state statistics are adequate.

The estimations of GRP is the first step to the creation of the System of Regional Accounts (SRA), combined with SNA. While this task can't be solved in the complete volume, because there are some gaps in the regional statistics. However, work under SRA has been conducting in some regions, for example, on the Far East (Micheeva, 1998).

## 2. GRP Methodology

The calculations of GRP are conducted the local departments of Goskomstat by single methodology, which was created by the Goskomstat on the federal level.

Russian GDP can be calculated by three methods: production method (the sum of products), distribution method (the sum of incomes), method of final utilization (the sum of expenditure). The main attention is given to production method of GDP estimation. GDP equal gross value added, created at the account period by resident economic units. By the economic content, GRP is the regional equivalent of GDP, calculated by production method. GRP define like gross value added, created at the account period by resident economic units, but in this case resident economic units of the regional economy.

Gross value added is the difference between output at market prices and intermediate consumption. Methodology of estimation this indexes on national and regional levels is the same. However, some elements of Russian GDP can't be compiled on the regional level or distributed between regions.

Total GRP of all Russian regions is differ from Russian GDR on the value added of:

- non-market community services, provided by general government to the society as a whole (national defence, governing);
- other non-market community services, budgeted on the account of federal budget and data is absent on the regional level;
- financial intermediation services (particularly banks), which activity is not limited the regional border;
- services of the foreign trade, in many cases information can be taken on the federal level only.

Besides, GDP and GRP at market prices distinguish on the value of the export taxes and the import taxes, because their total value is impossible to distribute between separate regions (there are some specifics of their account). Total GRP composes 80-85% of Russian GDP.

There are two type of data, which are used for quarter and annual GRP estimations:

- *direct data* - volume or dynamic of indexes (complete or part). For example, there are form «Information about the production and shipment of goods and services». It is keep information

about volume and dynamic production of industry. Data of statistical statements require additional calculations on small enterprises, production of households and hidden economy;

- *indirect data* - volume or dynamic of indexes, not forming whole or part of calculating factor, but changing of which allow to judge about changing a calculating factor. For example, changing a number of maintained persons is indirect information for the volume determination of provided services.

If direct or indirect data are lack, expert judgements are used. For example, there are interviewing of the bookkeepers of enterprises about trends of the expenses on the heavy repair or own opinion of persons, which produce quarterly estimations.

Gross value added by the industries of economy is provided at basic prices. Basic price is a producer's price without pure taxes on products. Total index are estimated at purchaser's prices (market prices). It means: the gross value added at basic prices plus pure taxes. On the national level, aside from this, is necessary to add import tax indirectly measured and subtract financial intermediation services indirectly measured. However these adjustments until are not produced for the estimations of GRP.

Goskomstat has estimated GRP on the base of statistical information without hidden and non-formal economy till 1997. At present, GRP methodology includes necessary additional estimations. Macroeconomic indexes are calculated with corrections for hidden, non-formal economy. First of all this is applied to output and gross value added by the industries of economy, consumption and capital formation. The adjustments compose about quarter of GDP.

In the concept «hidden, informal activity» in Russia is included: a) economic activity, allowed by the law, but hidden or understated on volume, for the reason run-arounds from the payment of taxes and other duties before State; b) individual producer activity, without licence, based on informal relations between participants of production, where goods or services completely or partly are produced for the own consumption or for sale. The highest rate of informal activity was observed in the agriculture, trade and construction. *Illegal economic activity, forbidden by existing legislation*, is not estimated by Goskomstat.

The main principle of determinations of hidden activity is a complex analysis of system of production ratios by industries, in a result of which are revealed amounts of disproportion between

make and use. System of indexes includes current statistics, results of special surveys, independent expert judgements by specialists of different areas of economy.

Methodological approaches to deciding this problem are perfected constantly, including utilization an experience of other countries. In particularly, Russia has joint project with ISTAT (Italy) within the framework of the program TACIS, which provide for elaboration the methodology of the determination of parameters of hidden informal economy. The index of real working time is consider like basic economic activity indicator. Within the framework of this project is expected realization of two pilot surveys in one region of Russia: households - for studying real working time and small enterprises - for studying an average output and input.

Data of GRP in the proposed paper are analysed in 1995.

### **3. Analysis of GRP at 1995**

Goskomstat RF conducts calculations of GPR by 79 subjects. In this list is absent Chechen and data by 9 autonomous areas are included in data of the corresponding kraj and oblast.<sup>1)</sup>

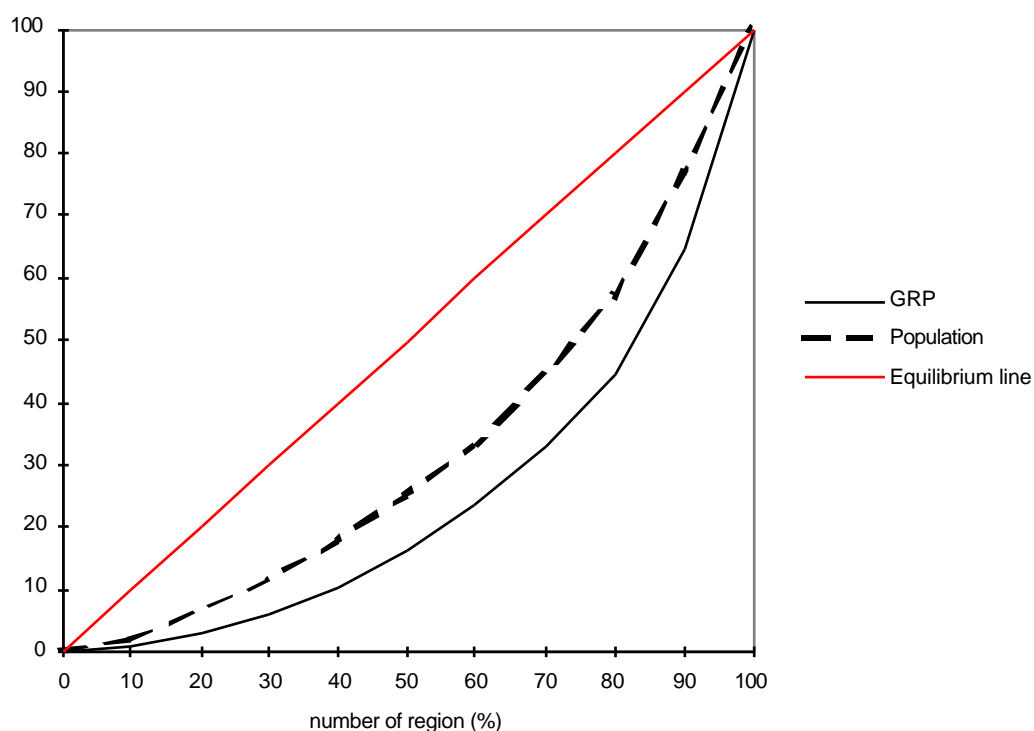
There are high differentiation between subjects of RF on the territory and population. Distinguish between maximum and minimum regional population comes to 91,4 times (coefficient of variation - 80,9%). Naturally, there are very great differences on all economic indicators. GRP variable range between Moscow city (maximum) and Ingushetija (minimum) is 256,6 times in 1995, coefficient of variation - 123,8%. It's necessary to note, that the variable ratios are more higher on some other regional macro indexes (for example, on the commodity circulation and investments).

The top ten regions by GRP is: 1) Moscow city, 2) Tumen, 3) Sverdlovsk, 4) Moscow oblast, 5) St-Petersburg city, 6) Samara, 7) Krasnojarsky, 8) Bashkortostan, 9) Tatarstan, 10) Perm. They produce 43,41% of the total Russian GRP. Second 10 regions produce 19,71%, third 10 regions - 12,48%. 19 regions (24% of the total number) with the lowest level of GRP produce 3,97% of the total Russian GRP (Table 1). This groups consist of 14 national-state formation.

**Table 1.** Ranking the regions on GRP

Groups of regions ranked on GRP	Total amount of GRP (%)	For information: population (%)
First (1-10)	43,41	30,81
Second (11-20)	19,71	21,18
Third (21-30)	12,48	14,04
Fourth (31-40)	9,16	10,08
Fifth (41-50)	6,53	8,63
Sixth (51-60)	4,75	7,54
Seventh (61-79)	3,97	7,72
TOTAL	100,0	100,0

The first 13 regions produce half of the total GRP, 75% - the top 30 regions; 49 regions (with the lowest GRP rate) produce 25%. Territorial distribution of GRP on quintile to intervals such as: 20% regions with least GRP give 2,8%, second 20% - 7,6 %, third 20% - 13,0%, fourth - 21,4% and 20% regions with most GRP - 55,2%. Lorenz curve of GRP and population are shown on the figure 1. Gini coefficient of GRP equal 49,65%, that bigger then Gini coefficient of population (35,39%).

**Figure 1.** Lorenz curve of GRP and population.

Variable range of GRP per capita (calculated for 79 regions) comes to 17,7 times (Tumen and Ingushetija), coefficient of variation - 48,9%. Average GRP per capita 1995 - 9556,2 rub. or 2098,6 dollars. (exchange rate - 4,55364 rub./doll.).<sup>2)</sup>

All regions (79) are divided in 6 groups, having equal intervals (25 percent), on GRP per capita with respect to average GRP: 1) "regions-leaders" (more than 150% from average), 2) "developed" (125-150%), 3) "successful" (100-125%), 4) "less successful" (75-100%), 5) "under-developed" (50-75%), 6) "being destitute" (less than 50%).

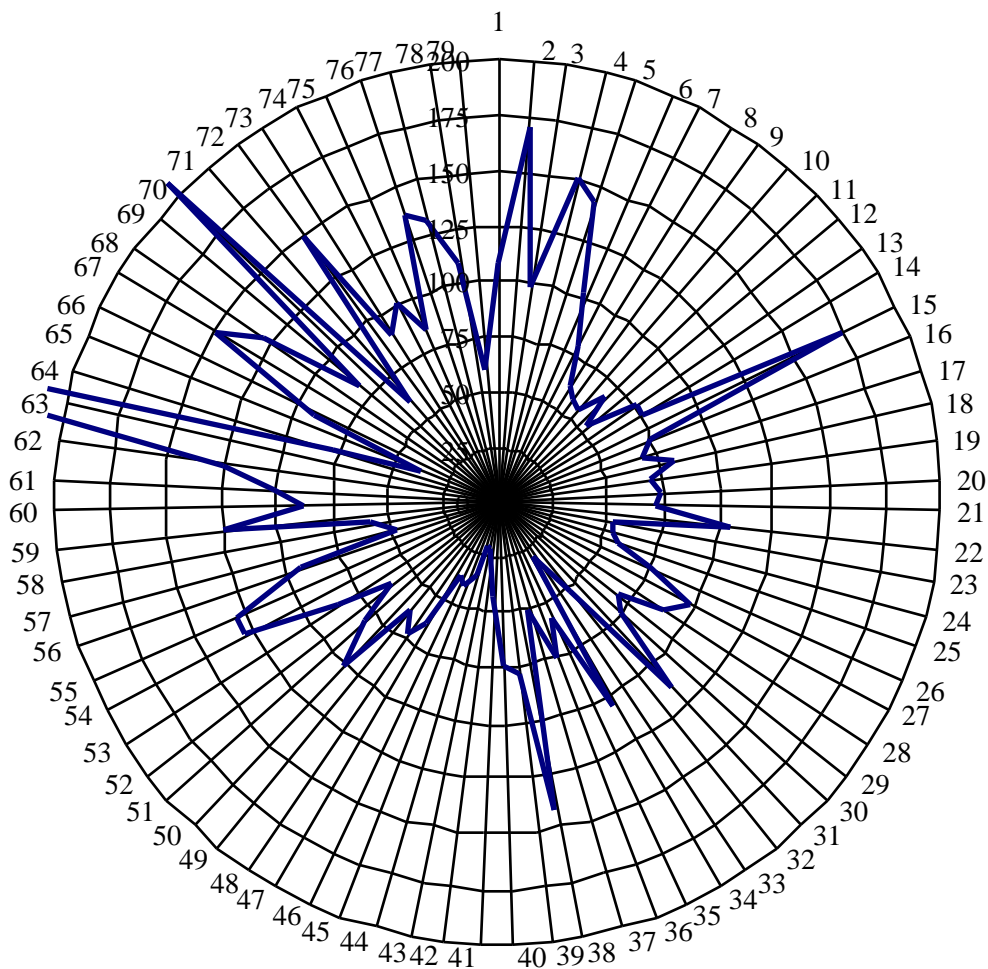
"Regions-leaders" group consists of 4 regions:

1. Tumen - 34421,4 rub. (\$7559,1), 360,20% of average.
2. Sakha (Jakutija) - 19756,0 rub. (\$4338,5), 206,73% of average.
3. Moscow city- 16611,7 rub. (\$3648,0), 173,83% of average.
4. Komi - 16250,7 rub. (\$3568,7), 170,05% of average.

"Being destitute" group consists of 9 regions; everyone - Republics of Northern Caucasus and Southern Siberian:

1. Altay - 4512,5 rub. (\$991,0), 47,22% of average.
2. Adygeja - 4085,4 rub. (\$897,2), 42,75% of average.
3. Karachai-Cherkess - 3903,0 rub. (\$857,1), 40,84% of average.
4. North Ossetia - 3526,6 rub. (\$774,5), 36,90% of average.
5. Tyva - 3523,0 rub. (\$773,7), 36,87% of average.
6. Kabardino-Balkarian - 3325,8 rub. (\$730,4), 34,80% of average.
7. Kalmykija - 2789,9 rub. (\$612,7), 29,19% of average.
8. Dagestan - 1992,1 rub. (\$437,5), 20,85% of average.
9. Ingushetija - 1940,4 rub. (\$426,1), 20,31% of average.





**Figure 2 (radar).** GRP per capita of the subject of Russia in regard of average GRP, %.

On radar (Fig. 2) Tumen (number 63) is the single which living 200% circle, Dagestan (number 42) and Ingushetija (number 43) are in 25% circle.

**Table 2.** Ranking of GRP per capita by the groups of regions with regard to average GPR per capita

Groups of regions with regard to average GPR per capita	Quantity of regions in group	Share of group' GRP in total GRP, %	Average-group GRP per capita	
			rub.	to average, %
1. more then 150% ("regions-leaders")	4	20,87	20813	217,80
2. 125-150% ("developed")	10	18,41	13055	136,62
3. 100-125% ("successful")	9	15,46	10351	108,32
4. 75-100% ("less successful")	22	26,46	8141	85,20
5. 50-75% ("under-developed")	25	17,67	6062	63,43
6. less then 50% ("being destitute")	9	1,15	2906	30,41
Total	79	100	9556	100

As you can see from the Table 2 , ranking of the regions in regard of average GRP per capita is greatly irregularly. Number of regions, having GRP per capita below average are 56 (they produce 45% of total GRP), above average - only 23 (55% of total GRP). Average-group GRP per capita are differed in 7 times.

As it was already noted, Goskomstat has not defined GRP on 9 autonomous areas as yet. We offer to use regression equation for the estimation of lacking data. Perhaps regression analysis will be also used for short-term (quarterly, annual) forecasts of GRP on the base of data, which there are at the disposal earlier, than are completed calculations of GRP.

There were chosen three regression equations of GRP per capita.

Model 1:  $Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4$ ,

Model 2:  $\ln Y = b_0 + b_1 \ln X_1 + b_2 \ln X_2 + b_3 \ln X_3 + b_4 \ln X_4$ ,

Model 3:  $Y - \bar{Y} = b_0 + b_1(X_1 - \bar{X}_1) + b_2(X_2 - \bar{X}_2) + b_3(X_3 - \bar{X}_3) + b_4(X_4 - \bar{X}_4)$ ,

where

$Y$  - gross regional product (rub.) per capita,

$X_1$  - industrial production (rub.) per capita,

$X_2$  - agricultural production (rub.) per capita,

$X_3$  - retail commodity circulation (rub.) per capita,

$X_4$  - investments in the fixed capital (rub.) per capita,

$Y - \bar{Y}$  - deflection of gross regional product per capita from average (rub.),

$X_1 - \bar{X}_1$  - deflection of industrial production per capita from average (rub.),

$X_2 - \bar{X}_2$  - deflection of agricultural production per capita from average (rub.),

$X_3 - \bar{X}_3$  - deflection of retail commodity circulation per capita from average (rub.),

$X_4 - \bar{X}_4$  - deflection of investments in the fixed capital per capita from average, (rub.).

Model 1 gives the minimum deflections of empirical GRP from theoretical. Besides, this model has maximum multiply coefficient of determination (0,936) in contrast with two other models.

Estimations of parameters and characteristics of GRP per capita regression model 1

$b_0$	$b_1$	$b_2$	$b_3$	$b_4$	characteristics of the model		
1265,433	0,579	-0,178	0,499	1,654	D-W = 1,966	$A_c = 1,354$	R = 0,967
(2,105)	(10,544)	(-0,662)	(5,131)	(10,238)	$\bar{r} = 11,10\%$	$E_k = 3,902$	F = 1018,6

GRP per capita is most sensitive for fluctuations of investment in the fixed capital and industrial production. Agricultural production exerts a weak inverse influence. The negative sign of factor  $b_2$ , probably, is explained of the low efficiency of agricultural production, its subsidiary in some of regions.

#### 4. Additional and alternative estimations of GRP

**GRP of autonomous areas.** In the Table 3 shows estimations of GRP of autonomous areas, received by the regression equation 1. The regions ranked by the size of GRP per capita. From 9 autonomous areas - 2 areas were included in the group of «leaders», 1 - in the group of «developed» regions, 3 - in the group «less successful» and 3 - in the group of «being destitute» regions.

Yamal-Nenets and Khanty-Mansi areas occupy the 1st and 2nd places in Russia by GRP per capita. With provision for received estimations, GRP per capita of remaining portion of Tumen forms 8317,9 rub. (87,0% to average). Khanty-Mansi area is on the 2nd place in Russia by the absolute volume of GRP (4,6% of total GRP), Yamal-Nenets - on 14th place (2,3%), remaining portion of Tumen is lowered in fourth groups of ten of regions (0,8% of total GRP).

**Table 3.** Estimations of GRP for autonomous areas on the base of regression model

N	Autonomous areas	GPR per capita		GRP, million rub.	Group in which can be included area
		rub.	to average, %		
1	Yamal-Nenets	67 105,3	702,2	32479,0	1 (leaders)
2	Khanty-Mansi	49 055,6	513,3	65170,3	1 (leaders)
3	Nenets	11 897,7	124,5	577,0	2 (developed)
4	Koryak	8 719,3	91,2	292,1	4 (less successful)
5	Taimyr (Dolgan-Nenets)	8 481,1	88,7	398,6	4 (less successful)
6	Evenk	7 492,6	78,4	153,6	4 (less successful)
7	Aginsky-Buryat	4 577,9	47,9	361,7	6 (being destitute)
8	Ust-Ordynsky Buryat	3 313,2	34,7	473,8	6 (being destitute)
9	Komi-Permyak	2 922,4	30,6	461,7	6 (being destitute)

Including of Yamal-Nenets and Khanty-Mansi areas in the «leaders» group corresponds with the fact, that they occupy the first two places in the region list by the volume of industrial production and investments in fixed capital per capita. The author's estimations are similar to alternative calculations, published by Russia-European centre of economic policy (Main tends of development, 1997): a) two considered areas also occupy 1st and 2nd places by GRP per capita (accordingly 787,5 and 755,6% to average); b) by the absolute volume of GRP, Khanty-Mansi area is on 2nd place (5,2% of total GRP), Yamal-Nenets area - on 14th (2,0% of total GRP).

Also no nothing unexpected that Komi-Permyak, Ust-Ordynsky Buryat and Aginsky-Buryat areas by estimations of GRP per capita included in the group of «being destitute». These regions occupy one of the last places in Russia by industrial production and investments per capita.

For more precise definition of GRP in most poor regions were calculated regression equations on above specified models only for groups of "under-developed" and "being destitute" regions. As a result was chosen model 2.

Estimations of parameters and features of regression model 2 for groups of "under-developed" and "being destitute" regions.

$b_0$	$b_1$	$b_2$	$b_3$	$b_4$	characteristics of the model		
1,348 (2,059)	0,214 (5,052)	0,166 (2,477)	0,266 (3,634)	0,326 (4,720)	D-W = 1,78 $\bar{r} = 0,86\%$	$A_c = -0,434$ $E_k = -0,391$	R = 0,962 F = 89,58

All parameters of this regression model are positive unlike the equation calculated for 79 regions. As judged by regression parameters estimations, GRP per capita by «under-developed» and «being destitute» regions more sensitive to changing the investments in the fixed capital and commodity circulation.

**Table 4.** Estimations GRP and GRP per capita for autonomous areas, falling into the group of «being destitute», on the base of "group" regression model

	GRP per capita		GRP, million rub.
	rub.	to average, %	
Komi-Permyak	3045,8	31,9	481,2
Ust-Ordynsky Buryat	3020,7	31,6	432,0
Aginsky-Buryat	4167,9	43,6	329,3

By regression equation, calculated for the last two groups of regions, volumes of GRP per capita of Ust-Ordynsky Buryat and Aginsky-Buryat areas has decreased in comparison with equation, calculated for 79 regions; volume of GRP per capita of Komi-Permyak area on the contrary has increased. However these changes do not bring about transition in other group.

Conducted calculations has shown, that estimation of GRP without the separation of autonomous areas leads to understating relative variable range of GRP per capita. So in the first case, disregarding autonomous areas, it has formed 17,7 times, in the second case - 34,6 times.

**About alternative estimations of GRP.** The most actual direction of improvement of GRP methodology is estimation of scales of hidden, informal economy. As it was noted in the paragraph 2, Goskomstat RF is going to publish estimations of GRP in consideration of hidden, informal economy since 1997.

In (Shadow economy in Russian regions, 1997) is described methodology of correlation and regression analysis of scales of hidden, informal economy in regions of Russia by the data of hidden profits, hidden employment and scales of run-around from taxes. Empirical results are not presented, but it's formulated conclusion: in "rich" regions a share of the hidden sector of economy is lower, then in "poor" regions.

The attempt to take differences of purchasing power into account of nominal GRP undertaken in (Goskomstat, 1997). For this were used data of the price of purchaser's basket (including 25 essential goods) in the different regions. Estimations of GRP per capita by the purchasing-power parity are smaller differed from results of collations of nominal GRP per capita

(correlation ratio is 0,92). In our opinion, this methodology is too rough. Firstly, in principle it can be used for the adjustment not made, but used GRP; secondly, list from 25 goods is little representative for the whole GRP.

Estimations of GRP, used by the Ministry of economy (Kosarev 1996; Teplyxina, Schistijakov 1996), are differed from the data of Goskomstat. Methodical nature of these divergence isn't completely clear. Probably, main reason of divergence is that Ministry of economy for preparing a forecast of next year (for instance, 1996) have to use preliminary (expected) data of the current year (1995), got from departments of economy of the subjects of Russia. These data are undoubtedly inexact.

## **5. Estimations of possibilities of rapprochement of the regions by the size of GRP per capita.**

In all documents of the state regional policy of USSR and Russia Federation is declaimed necessity of *levelling* the regions by the level of social-economic development and well-being already the many decades. However analysis of regional development trends shows that *rapprochement* of regions occurred till 1970s only. After that the social-economic differentiation of the republics former USSR and Russia regions noticeably increased. This trend is sharply intensified in 1990s.

Conducted analysis of GRP per capita 1995 (like main social-economic indicator of regional differentiation) compels critically apply to feasibility complete levelling by this indicator. The third more pragmatic is estimation of conditions of reduction a breaking between regions, in particularly - reduction the lag of «under-developed» and «being destitute» regions.

It is proposed two tasks:

- 1) how many years are necessary to the lagging regions for the achievement of average GRP per capita in conditions of appointed annual growth rates of average GRP per capita;
- 2) what the growth rates of GRP per capita are necessary in the lagging regions to achievement of average GRP per capita during appointed number of years.

**Table 5.** Annually growth rates of GRP per capita in group of "being destitute" regions, required for achievements of average, %

	for 30 yeas	for 20 yeas	for 15 yeas	for 10 yeas
Annual growth rate of average GRP per capita is 0%				
Ingushetija	5,46	8,30	11,21	17,28
Dagestan	5,37	8,16	11,02	16,98
Kalmykija	4,19	6,35	8,55	13,10
Kabardino-Balkarian	3,58	5,42	7,29	11,13
Tyva	3,38	5,12	6,88	10,49
Northern Ossetia	3,38	5,11	6,87	10,48
Karachai-Cherkess	3,03	4,58	6,15	9,37
Adygeja	2,87	4,34	5,83	8,87
Altay	2,53	3,82	5,13	7,79
Annual growth rate of average GRP per capita is 3%				
Ingushetija	8,62	11,55	14,55	20,80
Dagestan	8,53	11,40	14,35	20,49
Kalmykija	7,32	9,54	11,81	16,50
Kabardino-Balkarian	6,69	8,58	10,52	14,47
Tyva	6,48	8,27	10,09	13,81
Northern Ossetia	6,48	8,26	10,08	13,80
Karachai-Cherkess	6,12	7,72	9,34	12,65
Adygeja	5,96	7,47	9,00	12,14
Altay	5,61	6,94	8,28	11,03
Annual growth rate of average GRP per capita is 5%				
Ingushetija	10,73	13,71	16,78	23,15
Dagestan	10,63	13,56	16,57	22,83
Kalmykija	9,40	11,67	13,98	18,76
Kabardino-Balkarian	8,76	10,69	12,66	16,69
Tyva	8,55	10,37	12,22	16,02
Northern Ossetia	8,55	10,37	12,22	16,01
Karachai-Cherkess	8,18	9,81	11,46	14,84
Adygeja	8,02	9,56	11,12	14,31
Altay	7,66	9,01	10,39	13,18

As we can see from the Table. 5, achievement of average GRP per capita by «being destitute» regions requires mountain-high growth rates and long time. Decision of this problem is obstructed in condition of the national economy growth (considered interval is 0-5%). For example, if it is oriented on the growth rates, characterized for the most dynamic developing countries (approximately 8-10% per annum) and growth rate of average GRP per capita - 3% per annum (showed in the second part of the table 5), the decision of delivered problem for 10 years is

absolutely impossible. "Best" regions in this group (Altay, Adygeja, Karachai-Cherkess) theoretically can cope with this problem for 15 years, but the most poor regions (Ingushetija, Dagestan) - only for 30 years. When raising of growth rate of average is before 5% (as it is planed in intermediate-term forecast of Russian economy), decision of delivered problem is postponed minimum on 5 years else. It does no harm to note that reality of 8-10% growth rates per annum of specified regions is highly problematic.

**Table 6.** Number of years required for achievements average GRP per capita by «being destitute» regions, %

	3%	4%	5%	6%	7%	8%	9%	10%
Annual growth rate of average GRP per capita is 0%								
Ingushetija	54	41	33	28	24	21	19	17
Dagestan	54	40	33	27	24	21	19	17
Kalmykija	42	32	26	22	19	16	15	13
Kabardino-Balkarian	36	27	22	19	16	14	13	12
Tyva	34	26	21	18	15	13	12	11
North Ossetia	34	26	21	18	15	13	12	11
Karachai-Cherkess	31	23	19	16	14	12	11	10
Adygeja	29	22	18	15	13	12	10	9
Altay	26	20	16	13	12	10	9	8
Annual growth rate of average GRP per capita is 3%								
Ingushetija	-	166	83	56	42	34	29	25
Dagestan	-	163	82	55	42	34	28	24
Kalmykija	-	128	65	43	33	26	22	19
Kabardino-Balkarian	-	110	55	37	28	23	19	17
Tyva	-	104	52	35	27	22	18	16
North Ossetia	-	104	52	35	27	22	18	16
Karachai-Cherkess	-	93	47	32	24	19	16	14
Adygeja	-	88	45	30	23	18	16	13
Altay	-	78	40	27	21	16	14	12
Annual growth rate of average GRP per capita is 5%								
Ingushetija	-	-	-	169	85	57	43	35
Dagestan	-	-	-	166	84	56	42	34
Kalmykija	-	-	-	130	66	44	33	27
Kabardino-Balkarian	-	-	-	112	56	38	29	23
Tyva	-	-	-	106	53	36	27	22
North Ossetia	-	-	-	106	53	36	27	22
Karachai-Cherkess	-	-	-	95	48	32	24	20
Adygeja	-	-	-	90	46	31	23	19
Altay	-	-	-	80	40	27	21	17



Analysis of results of the second tasks (showed in the Table 6) also demonstrates impracticable hopes on fast levelling the regions by the level of economic development. Even for the hypothesis of zero growing of average GRP «being destitute» regions can be equal with average GRP per capita for a period 17-54 year depending on rates of its growing (between 10 and 3% per annum accordingly). For 3% growth rate of average of GRP per capita, the most retarded regions even for 10% growth rate overtake average for 25 years only, and the best region from this groups - for 12 years. For 5% growth rate of average of GRP per capita for deciding this problems to the most retarded regions is required 35 years, and the best region from this groups - 17 years.

Thereby, full levelling the regions of Russia by the size of GRP per capita is practically impracticable in visible prospect. That is why has sense to consider of the more modest problem: reduction of maximum lag of regions from average (before 50%, 75% and etc.). Interpreting of this problem on the radar (Figure 2) means consequent the transition the retarded regions on more high orbits - concentric circles 25, 50, 75%,...

**Table 7.** Increasing of GRP of «being destitute» regions required for achievements of given correlation of regional and average GRP per capita.

	25%		50%		75%		100%	
	million rub.	%	million rub.	%	million rub.	%	million rub.	%
Ingushetija	130,1	23,12	822,9	146,2	1 515,7	269,4	2 208,5	392,5
Dagestan	826,6	19,93	5 801,4	139,9	10 776,1	259,8	15 750,9	379,7
Kalmykija	-	-	634,4	71,3	1 396,7	156,9	2 159,0	242,5
Kabardino-Balkarian	-	-	1 147,2	43,7	3 034,3	115,5	4 921,5	187,3
Tyva	-	-	387,6	35,6	1 125,3	103,4	1 863,0	171,3
North Ossetia	-	-	826,5	35,5	2 404,3	103,2	3 982,0	171,0
Karachai-Cherkess	-	-	381,5	22,4	1 423,2	83,6	2 464,8	144,8
Adygeja	-	-	312,1	17,0	1 388,3	75,4	2 464,6	133,9
Altay	-	-	53,3	5,9	533,0	58,8	1 012,8	111,8
Total	956,7	20,31	10 366,9	64,4	23 597,0	146,6	36 827,1	228,8
Share of GRP to the total GRP	-	0,1	-	0,7	-	1,7	-	2,6

On the radar the Ingushetija and Dagestan occupy a position below of 25% orbit, the rest 7 regions of group "being destitute" are between orbits 25% and 50%. In order to Ingushetija and Dagestan reach of 25% orbit it is necessary to increase their GRP on 20,3% that forms 0,07% of total Russian GRP. In order to all regions of group reach 50% orbits (borders between groups of

"under-developed» and «being destitute» regions) it is necessary that regions of group should increase its GRP on 64,4%. For transition in the group "less successful" regions it is necessary to increase GRP nearly in 1,5 times, for transition in the group "successful" - in 2,2 times; this increase forms 2,62% of total Russian GRP. (Calculations are executed at the admission of the constant number of population). Similar calculations are held at all backward regions (as from the group 4).

On the radar the Ingushetija and Dagestan occupy a position below of 25% orbit, the rest 7 regions of group "being destitute" are between orbits 25% and 50%. In order to Ingushetija and Dagestan reach of 25% orbit it is necessary to increase their GRP on 20,3% that forms 0,07% of total Russian GRP. In order to all regions of group reach 50% orbits (borders between groups of "under-developed» and «being destitute» regions) it is necessary that regions of group should increase its GRP on 64,4%. For transition in the group "less successful" regions it is necessary to increase GRP nearly in 1,5 times, for transition in the group "successful" - in 2,2 times; this increase forms 2,62% of total Russian GRP. (Calculations are executed at the admission of the constant number of population). Similar calculations are held at all backward regions (as from the group 4).

Hitherto we considered possibilities of rapprochement the regions to the account of own economic growing, based on the index of *made* GRP. However for the feature of well-being of population of region more preferred index of *used* GRP, taking into account interregional redistribution of incomes, goods and services. Essence of problem of rapprochement the regions by the well-being (in simplified type - by the used GRP per capita) consists in the finding of compromise between the growing of efficiency of economy of region (made GRP) and "equitable" redistribution of GRP between more rich and more poor regions. Problem of searching of optimum compromise are reasonably to consider after getting data of used GRP in Russia regions.

## Footnotes:

1. Russian Federation consist from 89 subjects of Russian Federation, including: 21 Republics, 49 Oblast, 6 Kraj, 2 Cities, 1 Autonomous oblast and 10 Autonomous areas. 9 Autonomous areas are included: Nenets - in Arkhangelsk; Komi-Permyak - in Perm; Khanty-Mansi and Yamal-Nenets - in Tumen; Taimyr (Dolgan-Nenets) and Evenk - in Krasnojarsky; Ust-Ordynsky Buryat - in Ikrutsk; Aginsky-Buryat - in Chita; Koryak - Kamtchatka; Chukchi autonomous area is not included in something other subject of Russian Federation.

2. All data in roubles for 1995 are provided in denomination roubles, incorporated from January 1998 (ratio of denomination is 1000).

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