Gerasimova, Irina

Conference Paper

Sources of income as a factor of interregional socio-economical differentiation of Russian population (1995 - 2007 YEARS)

50th Congress of the European Regional Science Association: "Sustainable Regional Growth and Development in the Creative Knowledge Economy", 19-23 August 2010, Jönköping, Sweden

Provided in Cooperation with:

European Regional Science Association (ERSA)

Suggested Citation: Gerasimova, Irina (2010) : Sources of income as a factor of interregional socio-economical differentiation of Russian population (1995 - 2007 YEARS), 50th Congress of the European Regional Science Association: "Sustainable Regional Growth and Development in the Creative Knowledge Economy", 19-23 August 2010, Jönköping, Sweden, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:
https://hdl.handle.net/10419/118854

SOURCES OF INCOME AS A FACTOR OF INTER REGIONAL SOCIO – ECONOMICAL DIFFERENTIATION OF RUSSIAN POPULATION (1995 – 2007 YEARS) [1]

Irina Gerasimova
CEMI RAS
Moscow, Russia

Abstract

The main goals of this paper have been to investigate the tendencies of income per capita distribution across the subjects of Russian Federation (RF) during 1995-2007 years, to estimate inter regional inequality on this distribution and to analyze its factors. Three aspects of this problem have been taken under consideration.

The first one has been to analyze the evolution of income structure. It means to study the dynamics of shares of income per capita, obtained from five sources: (1) business (enterprise) activity; (2) wages (salaries); (3) social transfers; (4) property; (5) other income's sources.

The second one has been to estimate and to compare CINI coefficients for interregional distributions of income per capita and its five components for each year of considered period of time.

Finally, GINI decomposition by coefficients of Concentration, determined for each sources of income, have been valued, presented and discussed.

The official data published by ROSSTAT have been used for investigation.

Key words: Russia, regions, income per capita, sources of incomes, structure of income, spatial inequality, GINI, coefficient of Concentration, decomposition.

[1] This work has been supported by the Russian Foundation of Humanities, project № 08-02-00228a

I. Level and Structure of Income per capita in regions of The Russian Federation.

Income inequality, Poverty and Vulnerability have been the most topical subjects of investigations, political and scientific international discussions and numerous publications.

Continuous and stable attention to those problems in Russia during last twenty years has been determined by two reasons (at least). First of all there is some wrong influence of these phenomena on Well-being of population and social stability on the whole. Otherwise the clear and constructive answers for the numerous questions about the factors and trends of income inequality within different social groups of population and across the regions of RF have not been found out. The principle question: "Why measure inequality?" formulated by L. Kaplow in 2005 [Kaplow (2005)] sounds very actual and now, five years later.

The Russian Federation has been composed from eighty subjects (regions). The main topics of the paper are to investigate the tendencies on income per capita distribution inequality across the subjects of RF during 1995-2007 years.

Four aspects of named above tasks have been considered at the first part of the paper:

- Dynamics of ***income per capita*** (futher – ***income_pc***) in RF at average;
- Variation of ***income_pc*** across the regions of RF;
- Dynamics of structure of ***income_pc*** in RF at average;
- Variation of structure of ***income_pc*** across the regions of R.

The data has been presented at Tables 1-3.

Income per capita

First of all it could say that ***income_pc*** has been growing in Russia (at average) very fast. This phenomenon could be explained not only by strengthening of economy, nor by very height inflation during considered period of time (Tables 1). It's more important to put emphasis on the difference between regions with the lowest and the heights level of ***income_pc.*** Estimated in contemporary prices the gap between them has been rising also. This enormous gap has been the one from the set of significant indicators of negative tendencies to divergence of subjects of RF by GDP and Well-being of population. It should be remarked that height inter regional differences in income has been a factor of migration and concentration of population at the European part of Russia.

Income Structure

Using the data published by ROSSTAT (GOSKOMSTAT) in yearbooks "Regions of Russia. Social and Economic Indicators", 1995 – 2007 years, the structure of ***income_pc*** of population, living at each subjects of Russia, have been studied.

Official statistics registered five souse of income:

Inc1 - business (enterprise) activity;

Inc2 - wages (salaries);

Inc3 - social transfers;

Inc4 - property;

Inc5 - others income sources (including hide salaries and illegal income).

Dynamics of shares of named above five components of ***income_pc*** for RF (at average) during 1995 – 2007 years has been presented in Tables 2. Its consideration let us to assign some main features of Income Structure in Russian Federation (at average) during 1995 – 2007 years.

Business (enterprise) activity. Only from 1995 year income from business (enterprise) activity has been registered by official statistics in Russia. Since 2000th the share of income from this sources increased regular and is equal the only 10 percent at 2007th.

Wages (salaries) and Others income sources (including hide salaries and illegal income). There were not the significant changes into shares of these types of income. Their sum is equal to 70 percent and stable during the time. It may be important for understanding some results of institutional reforms in Russia that at 1990th share of *Wages (salaries)* in total income was 74 percent and share of *hide and illegal income* – the only 9 percent.

Social transfers. This type of income has had not serious influence for level of Russian population income. Some positive tendencies have been indicated before 2002, but after that, especially now, at period of crisis, it is difficult to intend the strengthening of social program.

Property. At average the share of this type of income has not been height – only in 2005 – 2006th it has been raised up to 10 percent. At the same time, as indicated by further investigation, this source of income has been the one of the most important factor of inequality of inter regional income distribution.

Income Structure in regions of RF

Structures of regional incomes have been very different (Table 3). Some important features have to point to. During the all considered period of time there are the subjects, where incomes from *business (enterprise) activity* and *property* have not been significant.

At the same time the shares of income from *others sources (including hide salaries and illegal income)* growing up to 50 percent. The shares of other types of income have been presented the wide variety of values. The significant inter regional income distribution inequality as a result of diversity of income structure. The inequality has been measured by GINI coefficient.

II. Common and special GINI coefficients.

For measuring of inequality of inter regional income per capita distribution GINI coefficient has been calculated. This indicator has been named "common" to distinguish it from special GINI, calculated for each components of entire ***income_pc.*** To estimate "common" GINI all subjects of Russia have been ranged by ***income_pc.*** To estimate "special" GINI all subjects of Russia have been ranged by five components of ***income_pc*** separately. These coefficients have been presented at Table 4.

Their comparative analysis let us to make some conclusions.

1. There are the tendencies to decreasing of common GINI during considered period from 1995 year to 2007 year – from beginning of transition up to beginning of world crisis.
2. At the same time there were and there are the enormous inequality on inter regional distributions of income from two sources – "***Inc4 –*** property" and "***Inc5 -*** others income sources (including hide salaries and illegal income".
3. The inequality of interregional distribution of income from "***Inc1*** - business (enterprise) activity" has been decreased also. This phenomenon might be indicated about reduction of business activity and have to be investigated deeper.
4. As to concern the "special GINI" for "***Inc2 -*** wages (salaries)", its value has been stable during the three last years. Probably such stability has been indicated that there were not significant changes on spatial diversification of branches of Russian economic.
5. Level of special GINI for "***Inc3 -*** social transfers" is very low. Because pension makes up nearly 70 percent from entire social transfers this low GINI might be to treat as "no real connection between wages (salaries) and pensions.

III. GINI decomposition.

GINI decomposition is the one from very useful and often treated method to analysis of income inequalities factors [Frick J. et al. (2005)], [Kanbur R.(2006)], [Quintano C. et al. (2008)].

To understand the influence of income structure at the interregional income inequality "common GINI" has been decomposed by coefficients of Concentration (***CR***), estimated for

each from five types of income sources. Algorithm of their calculation is the same as for special GINI, but at this case the regions of Russian Federation have been range only by income _pc. The results of estimation have been presented at Tables 5-7.

Vector $\boldsymbol{\alpha}(t) = \{\alpha_1(t), \alpha_2(t), \alpha_3(t), \alpha_4(t), \alpha_5(t)\}$ on the Tables 6 and 7 is a vector of ***income_pc*** structure for RF as a whole.

The main results of decomposition could be formulated as:

- The influence of "***Inc5 -*** others income sources (including hide salaries and illegal income)" at income inequality across the regions of Russian Federation has been very height and must be restricted.
- The same have to say about "***Inc4 –*** property".
- The very low share of "***Inc1*** - business (enterprise) activity" in the common GINI let us to make the conclusion, that business activity have no real support during of considered period of time.

Literature

Kaplow Louis. Why measure inequality?– Journal of Economic Inequality (2005) 3.

Kathryn Anderson and Richard Pomfret. Spatial Inequality and Development in Central Asia. – UNU/WIDER, Research Paper No. 2004/36.

S. Mansoob Murshed and Scott Gates. Spatial Horizontal Inequality and the Maoist Insurgency in Nepal. – UNU/WIDER, Research Paper No. 2004/43.

Shatakshee Dhongde. Decomposing Spatial Differences in Poverty in India.– UNU/WIDER, Research Paper No. 2004/53.

O. Bourguignon and C. Morrison. Inequality Among World Citizens: 1820± 1992. – The American Economic Review, September 2002.

Karla Hoff, Joseph E. Stiglitz. The Transition Process in Post-Communist Societies: Towards a Political Economy of Property Rights. – Revue D'economie Du Developpement Issue 2/3: 2003/2-3 September

Frick J., Goebel J. Regional Income Stratification in Unified Germany using a Gini Decomposition Approach / Working Paper Series, 2005, No.15. - Society for the Study of Economic Inequality (ECINEQ), 2005.

Kanbur R. The policy significance of inequality decompositions // Journal of Economic Inequality, 2006, № 4.

Quintano C., Castellano R., Regoli A. Evolution and decomposition of income inequality in Italy, 1991–2004 // Statistical Methods and Applications, April 2008

Table 1

Inter regional variation of Income per capita in Russian Federation, 1995 – 2007 years, contemporary prices, in rubles, (early 1998 year – in thousands of rubles)

year	MIN through all regions	RF at average	MAX through all regions	Distance (MAX – MIN)
1990	0,129	0,217	0,631	0,502
1995	123	516	1710	1587
1996	216	770	2639	2423
1997	308	941	3200	2892
1998	334	1010	3635	3301
1999	456	1659	6003	5547
2000	587	2281	7998	7411
2001	909	3062	10282	9373
2002	1171	3947	12461	11290
2003	1402	5170	16827	15425
2004	1757	6410	20899	19142
2005	2405	8112	24958	22553
2006	3002	10196	29803	26801
2007	4006	12601	35490	31484

Table 2

Structure of Income per capita in Russian Federation (at average), 1990, 1995 – 2007 years, percent

year	***inc1***	***inc2***	***inc3***	***inc4***	***inc5***	***total***
1990		74,1	14,7	2,5	8,7	100
1995	16,4	37,8	13,1	6,5	26,2	100
1996	13,7	40,7	14,2	5,4	25,9	100
1997	13,0	38,1	15,0	5,8	28,1	100
1998	14,2	37,8	13,5	5,5	29,0	100
1999	12,6	35,3	13,4	7,3	31,4	100
2000	15,4	36,5	13,8	6,8	27,5	100
2001	12,6	38,5	15,2	5,7	28,0	100
2002	11,9	40,9	15,2	5,2	26,8	100
2003	12,0	39,4	14,1	7,8	26,7	100
2004	11,7	40,3	12,8	8,3	26,9	100
2005	11,4	39,6	12,7	10,3	26,0	100
2006	11,1	39,5	12,0	10,0	27,4	100
2007	10,0	41,4	11,6	8,9	28,1	100

Sources of income:

inc1 - business (enterprise) activity
inc2 - wages (salaries)
inc3 - social transfers
inc4 - property
inc5 - others income sources (including hide salaries and illegal income)

Table 3

Variation of Income per capita Structure across the regions of Russian Federation, 1990, 1995 – 2007 years, percent

Год	*inc1*		*inc2*		*inc3*		*inc4*		*inc5*	
	Min	*Max*	*Min*	*Max*	*Min*	*Max*	*Min*	*Max*	*Min*	*Max*
1990			57,5	85,9	7,6	20,3	1,0	3,5	3,7	32,6
1995	1,4	28,5	17,5	71,3	4,7	34,8	1,5	11,7	2,5	56,4
1996	2,1	23,2	17,1	68,1	5,7	34,8	1,4	9,3	4,1	54,0
1997	2,7	20,8	17,	64,9	5,1	34,8	0,7	12,5	7,6	51,3
1998	2,7	24,6	17,6	64,9	6,3	34,8	0,6	11,7	12,3	48,5
1999	2,7	26,5	17,2	64,9	6,6	30,1	0,4	16,1	12,6	46,8
2000	4,0	33,8	18,4	66,7	6,5	27,6	0,2	14,5	13,7	40,4
2001	2,4	32,2	19,1	65,6	6,5	32,7	0,1	11,7	10,3	41,6
2002	2,0	25,1	23,6	66,3	6,8	31,1	0,4	8,6	6,3	43,0
2003	1,5	24,9	22,3	70.2	6,6	28,0	0,4	13,7	8,1	41,9
2004	1,6	27,0	17,7	82.2	6,8	26,4	0,4	15,7	5,4	50,9
2005	1,4	23,4	15,1	82.3	7,2	28,4	0,2	24,6	3,9	50,0
2006	1,1	26,4	13,8	76.0	6,8	25,9	0,3	22,5	10,9	48,7
2007	1,1	24,4	14,1	80.7	6,2	23,8	0,3	20,0	8,2	51,1

Table 4

Dynamics of common and special GINI coefficients

year	*GINI-common*	*GINI-inc1*	*GINI-inc2*	*GINI-inc3*	*GINI-inc4*	*GINI-inc5*
1995	0,281	0,257	0,249	0,085	0,380	0,547
1996	0,287	0,304	0,247	0,103	0,437	0,536
1997	0,286	0,326	0,248	0,073	0,564	0,477
1998	0,302	0,329	0,248	0,132	0,582	0,466
1999	0,300	0,309	0,248	0,123	0,620	0,448
2000	0,302	0,302	0,269	0,217	0,624	0,403
2001	0,298	0,293	0,275	0,222	0,625	0,406
2002	0,282	0,276	0,265	0,195	0,547	0,422
2003	0,292	0,259	0,271	0,175	0,545	0,428
2004	0,293	0,248	0,293	0,154	0,579	0,440
2005	0,283	0,242	0,283	0,125	0,641	0,371
2006	0,266	0,240	0,282	0,112	0,597	0,322
2007	0,258	0,227	0,287	0,105	0,581	0,305

Table 5

Dynamics of common GINI coefficient and coefficients of Concentration by income sources

year	*GINI*	*CR inc1*	*CR inc2*	*CR inc3*	*CR inc4*	*CR inc5*
1995	0,281	0,204	0,224	0,067	0,342	0,504
1996	0,287	0,258	0,222	0,086	0,401	0,492
1997	0,286	0,283	0,228	0,042	0,524	0,448
1998	0,302	0,284	0,231	0,107	0,551	0,451
1999	0,301	0,250	0,226	0,082	0,592	0,430
2000	0,302	0,253	0,249	0,192	0,593	0,385
2001	0,298	0,231	0,255	0,190	0,586	0,386
2002	0,282	0,214	0,245	0,166	0,507	0,388
2003	0,292	0,206	0,252	0,149	0,514	0,400
2004	0,293	0,186	0,254	0,128	0,549	0,398
2005	0,284	0,179	0,265	0,094	0,608	0,322
2006	0,266	0,167	0,265	0,082	0,555	0,284
2007	0,258	0,127	0,273	0,078	0,550	0,264

Table 6

GINI decomposition by coefficients of Concentration

год	*GINI-All*	$\alpha_1 \times$ *CR inc1*	$\alpha_2 \times$ *CR inc2*	$\alpha_3 \times$ *CR inc3*	$\alpha_4 \times$ *CR inc4*	$\alpha_4 \times$ *CR inc5*
1995	0,281	0,034	0,085	0,009	0,022	0,132
1996	0,287	0,035	0,090	0,012	0,022	0,128
1997	0,286	0,037	0,087	0,006	0,030	0,126
1998	0,302	0,040	0,087	0,014	0,030	0,131
1999	0,301	0,031	0,080	0,011	0,043	0,135
2000	0,302	0,039	0,091	0,026	0,040	0,106
2001	0,298	0,029	0,098	0,029	0,033	0,108
2002	0,282	0,025	0,100	0,025	0,026	0,104
2003	0,292	0,025	0,099	0,021	0,040	0,107
2004	0,293	0,022	0,102	0,016	0,046	0,107
2005	0,284	0,020	0,105	0,012	0,063	0,084
2006	0,266	0,019	0,105	0,010	0,055	0,078
2007	0,258	0,013	0,113	0,009	0,049	0,074

Table 7

Contributions of components of income structure to GINI, 1995 - 2007 years, percent (GINI = 100%)

year	*GINI*	*CR inc1*	*CR inc2*	*CR inc3*	*CR inc4*	*CR inc5*
1995	100	11,9	30,1	3,1	7,9	47,0
1996	100	12,3	31,5	4,3	7,5	44,4
1997	100	12,8	30,3	2,2	10,6	44,0
1998	100	13,3	28,8	4,8	10,0	43,1
1999	100	10,5	26,5	3,7	14,4	45,0
2000	100	12,9	30,0	8,8	13,3	35,0
2001	100	9,8	33,0	9,7	11,2	36,3
2002	100	9,0	35,7	9,0	9,4	37,0
2003	100	8,5	34,0	7,2	13,8	36,6
2004	100	7,4	34,9	5,6	15,5	36,5
2005	100	7,2	37,0	4,2	22,1	29,5
2006	100	7,0	39,4	3,7	20,8	29,2
2007	100	4,9	43,8	3,5	19,0	28,8