Chapter 10

Gross Regional Product for Russian Regions: Compilation Methods and Preliminary Results

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Introduction

It is not a secret: Russia is a very big country. There are significant differences between Russian regions - climate, population, mineral recourses, level of industrial production, history, the current political situation, and other factors. The Russian government cannot make standard economic and political decisions for all regions without taking into account these differences. The economic situation in Ivanovo and in Chukotka is not very good, but there are different reasons for this. This means that the government must have not only macroeconomic statistical indicators, such as GDP and national income, but also detailed statistical data about all regions for the everyday monitoring of the actual economic situation.

Another reason for improving the system of collecting regional statistics in Russia is based on the federal system of the country. There are 89 constituents of the Russian Federation and most of them (such as Tatarstan or Yakutia) have a very large territory and their own President, Parliament, government, flag and other state attributes. And, of course, every member of the Federation would like to have its own complete system of national accounts for two reasons: first, regional authorities need it for effective management and, second, SNA is a state attribute too. In conclusion, investors, especially foreign investors, need modern, internationally-based, regional statistics for business.

Of course, Russia always had a set of regional statistics. But the traditional planned economy statistical system cannot provide everything the users need. That is correct both for macroeconomic and for regional levels. Since 1991, the Russian official statistical service, Goskomstat, has initiated measures to improve the statistical data system at macroeconomic level in accordance with SNA standards. Now, not only Russian authorities, but also the UN, IMF, World Bank and other international institutions use the Russian GDP for analysis and monitoring, and publish it in their reports. Improving the statistical data system at the regional level began later, because it faced additional specific problems. Goskomstat published the first results of regional compilations, based on SNA approaches, in 1997. The author of this paper took part in this work directly.

In this paper we would like to demonstrate the specific approaches which were used for estimating new regional indicators in Russia, and give a picture of Russian regions based on National Accounts indicators.

THE MAIN APPROACHES

The main questions about the principles of forming a system of regional statistical indicators are the following:

- Is it possible to compile a complete set of Regional Accounts?
- If not, what indicators based on SNA principles can be estimated at the regional level?
- What differences are there between indicators at the regional and macroeconomic level?

The regional economy is a very open system. Many resident units of a region's economy operate in other regions and many nonresident units operate in it. Some households, which receive incomes from domestic regional economic activities, may make purchases in other regional markets. There are many interregional financial flows between state budgets of all levels (federal, local, municipal) and between financial institutions of various regions. In reality, to compile a complete set of regional accounts, the researcher needs to have the balance of payments for every region. Without this information it is impossible to take into account indicators of production, income and expenditure of the resident units. As a rule, statistical offices in Russia (and not only in Russia) cannot collect necessary information about all these transactions and transfers at the regional level. This means that significant pieces of information for the correct calculation of the Regional Account are not available and a complete set of Regional Accounts cannot be compiled.

This conclusion is very important for us (and for Russian Goskomstat). If it is impossible to compile a complete set of accounts, it is also impossible to calculate GDP for the regional economy combining all methods. They are (1) the production method, as a sum of value added to resident units, (2) the income method, and (3) expenditure, as a sum of expenditures on final consumption, on gross capital formation and net exports. In this situation Goskomstat used the following scheme for compiling regional data:

- The production approach was selected as the main method for estimating a generalized indicator - a version of regional GDP.
- Only certain indicators from other accounts were selected for compilation. Selection depended on the data source and the financial condition of regional statistical offices, among other conditions. Goskomstat uses indicators from income and expenditure accounts not for conformation of GDP figures, but for analysis only.

Unfortunately, it is very difficult to correctly compile a GDP indicator for the regional economy and an alternative indicator - regional quasi-GDP - may be compiled in place of GDP.

The main problem for compiling a regional version of GDP is the distribution of the collective non-market services of the federal government sector between regions. There are services for defense, military science, federal management and so on. Which region produces collective services and which region uses it? If Parliament is situated in the capital region, does it mean that the capital region produces services for the Federal Parliament and exports it to other regions? If this is true, what proportion of collective services are imports by region? What is the measure for this kind of import: the number of inhabitants, territory or some other indicator? Who knows?

This is not only a problem of theory. As a rule, regional statistical offices do not have complete information about federal expenditure on defense, for example, in their region. If some secret military laboratory is situated in a region and has funds from the federal budget, it is a real problem for regional statistics offices in Russia to collect information about it.

The next reason for the estimation of a specially constructed local level indicator is related to financial intermediary activity - the activity of banks, insurance companies, investment foundations and other institutions. The value of services of these units (financial intermediation services indirectly measured - FISIM) compiled in SNA is the total property income receivable by financial intermediaries from investment minus their total interest payable. This is a general rule and usually presents no problem when the statistics office makes this calculation at the federal level. But at the regional level there are many problems, because a bank or other financial company may be situated in one region, collect money from households or firms in another region, and invest funds and derive income from some project in a third region. Nobody in Russia or anywhere in the world knows how to compile FISIM production and consumption correctly in this situation.

Finally, it is very difficult to distribute certain kind of taxes on production between regions. This is true for taxes on imports. In SNA taxes on imports must be included in the GDP. Usually these kind of taxes are collected by custom offices when imported goods come across the state's border. The federal statistics bureau gets this information from the customs service and uses it for GDP compilation at the macro-economic level. But it is very difficult to collect information about where all imported goods are supposed to be used. This means that it is really impossible to correctly compile taxes on imports for every region.

To surmount all of these problems, a special regional indicator in Russia was constructed, based on SNA approaches, named Gross Regional Product (GRP). GRP is an analog of regional GDP, compiled as a sum of Value Added of all resident units of a region, but without (1) Value Added of units of the central government sector situated in the region which provide collective non-market services for all regions, (2) FISIM and (3) taxes on imports. The sum of GRP for all Russian regions is less than the total Russian GDP by these differences. In other points, GRP and GDP are comparable. For example, both GDP and GRP include similar adjustments on hidden economic activity.

In addition, expenditures on final consumption by the household sector and the local government sector, fixed capital formation, changes in inventories, taxes on production and employee compensation were selected by Goskomstat from a number of SNA indicators for regular compilation at the local level. But, of course, there were some differences between these indicators at the macro level and the local level.

First of all, if it is very difficult to compile indicators of production of non-market central government services at the local level, and the same situation exists for this indicator on the expenditure side. Central government expenditures on collective services were excluded from total expenditures on final consumption in the region. This indicator (expenditures of households and local government on final consumption without central government expenditures on collective services) is named "actual final consumption" in the SNA. There are significant additional problems related to the compilation of household expenditure on final consumption in regions. Resident and non-resident households make purchases in every region. For example, many Russians go to Moscow for shopping. Therefore, some parts of purchases in Moscow shops are not expenditures of final consumption by Moscow inhabitants, but exports from the Moscow region to other regions. In Russia information about household expenditure on final consumption is collected from trade firms as information about total sales of goods and services, but not from household budget surveys like in many other countries. This means that so-called "actual final consumption" in Russian regions, published by Goskomstat, is not really the actual final consumption of resident units, because some exports are included. Usually Goskomstat anticipates this in its own publications.

Taxes on production are shown without taxes on imports.

Other problems are related to the so-called phenomenon of "holding gains." Statistical offices in every country with significant inflation know about this. During inflation, the value of inventories rises as a consequence of changes in prices. But the standard indicator of changes in inventories reflects volume changes only. In accordance with SNA a special correction (on holding gains or losses) must be conducted. Methods to make this correction are not very clear, and highly qualified staff and additional information are needed. This is a problem for statistical offices at all levels. The federal statistical office in Moscow makes a correction of inventories on holding gains every time this indicator is estimated, but there are few offices in Russia that are able to do this correction. The indicator of changes in inventories is made by local statistical offices without a correction on holding gains or losses. This means that changes in inventories at the local level will be always positive during significant inflation.

Of course, there are significant differences between indicators at the federal and local levels related to information problems, shortages of experience and resources in local offices and so on, but it is better to have these indicators than nothing at all. All basic approaches for the compilation of indicators at all levels are the same. Anyone can use them for analysis or other purposes, taking into account specific points.

It may be interesting to know how the process of estimating GRP is organized. There are many possible ways to do it. For example, in Germany, the GDP at the federal level is estimated and distributed between all regions in accordance to certain rules. In many countries non-official statistical agencies, and various universities and other scientific or research institutes make the regional estimates using original methods. In Russia the GRP estimates are the duty of the state statistical system. The central statistical office in Moscow established one methodology for all regions. The local offices make all calculations in accordance with this methodology and send the results to Moscow. The federal office checks their results and publishes the GDP, the sum of the GRP of every region, the differences between them and an explanation for these differences. Usually, the difference between total GRP and GDP is about 10-13% of GDP. All GRP results are completely comparable.

PRELIMINARY RESULTS

The first experimental estimates of GRP were made by Goskomstat several years ago for only two regions. Since 1996, GRP results have been published every year. GRP results for all regions in 1994, 1995, and 1996 at current prices are available for users. Usually Goskomstat publishes GRP results two years later. Actual final consumption for all regions in 1995 has also been published.

Goskomstat plans to begin compiling capital formation indicators for all regions this year and first income indicators (employee compensation, taxes on production and operating surpluses) next year if results of experiments are satisfactory. Unfortunately, these indicators are still not available at constant prices.

The regional statistical offices compile not only annual GRP but also monthly and quarterly GRP. Until 1998 regional offices published monthly GRP without checking with the central office in Moscow, but the quality of these publications was not very high. That is the reason for ceasing the monthly compilations of GRP by order of the central office at the end of 1997. From the summer of 1998, after necessary preparation, Goskomstat will publish quarterly GRP for all regions at current and constant prices.

RUSSIAN REGIONS IN THE MIRROR OF GRP STATISTICS

There are 79 regions in Russia which are subjects of the federation (without Chechenia) and also shown separately by Goskomstat in publications.[1] There are so-called oblasts, krais and republics (which are like mini-nations unto themselves). The cities of Moscow and St. Petersburg have administrative independence and are show by Goskomstat separately in all publications.

1 We exclude most of the national okrugs.

Regions are big and small, rich and poor, central and situated on the periphery in the north or east. Moscow has 11.9% of the total GRP of all Russian regions, the Republic of Ingushetia has less than 0.1%. This difference increases year to year. The share of the five biggest regions in total GRP was 27% in 1994, 28.7% in 1995, and 31.7% in 1996. It is impossible to compare the GRP of every region directly. For a better understanding and comparison of regional indicators all (or many) have to be shown per capita.

In 1994 average GRP per capita in the Russian Federation was 3,584,000 rubles, in 1995 9,562,000 rubles, and in 1996 13,403,000 rubles. This is not very informative data for foreign and Russian researchers because in fact it shows only a high level of inflation in Russia. Indicators in rubles are not comparable with indicators in other currencies and, as mentioned before, data in constant prices for dynamic study are also not available. In this situation we can (1) make a revaluation of GRP data to constant prices using an average GDP deflator, (2) make a revaluation of GRP data to USD using market exchange rates and (3) make a revaluation to USD using purchasing power parity (PPP) of the ruble to USD.

None of these methods are completely correct from a theoretical point of view.

First, the deflator is compiled for GDP, but the difference between GDP and total GRP is about 10-13%. This means that the deflator for GRP may be different. Second, deflators for regions cannot be all equal but we do not have information about regional deflators. Third, data in constant rubles are usable for dynamic analysis but not for international comparisons.

If we use the market exchange rate for a revaluation of GRP data to USD, the results will be quite unexpected. Average GRP per capita in Russia was $1626 in 1994, $2100 in 1995, and $2616 in 1996. This phenomenal growth (more than 160% for average GRP, 240% for Tyumen' oblast, 216% for Tatarstan and 190% for Moscow) does not relate to real GDP growth, because real GDP in Russia has decreased during this time. But the real purchasing power of the dollar in Russia has decreased more. The average GRP per capita in Russia has increased because the real purchasing power of the dollar has decreased. GRP Data in USD (by market exchange rates) can show only the process of financial stabilization in Russia.

PPP or purchasing power parity of the national currency to the dollar is instrumental for international comparisons of GDP (ICP). UN, WB, OECD, Eurostat and many national statistical services take part in ICP. This approach takes into account differences between countries in prices on typical goods and services, GDP structure, and other points. First, PPP used for GDP includes all non-market services, FISIM, and other figures which are treated differently in GDP and GRP. Second, PPP is compiled for the country as a whole. It is clear that regions have differences in prices, composition of consumption, capital formation, and so on. This means that PPP may be different for every region and that it is not completely accurate to use one PPP figure for all regions.

To sum up, we have not found the perfect way to perform a revaluation of GRP from current rubles to constant rubles or USD for good comparisons and dynamic analysis. But for practical purposes these methods (except revaluation to USD by market exchange rates) may be used as a first step in the research process, when other up-to-date information is not available. The possible limitations must be taken into account by researchers.

Average GRP per capita in USD (by CPI results) was 3886.9 in 1994, 3812.7 in 1995, and 3711.9 in 1996 and has decreased during the past two years by 4.5%. Using the GDP deflator for revaluation, we see GDP decreasing on average by 4% in constant prices. Results are similar and we use an approach based on PPP in this paper because it gives us additional avenues for approximate international comparisons.

$3711.9 per capita is not a very high level of production, of course. This is the average level. The highest level of GRP per capita ($16311.1) is in Tyumen', due to much oil and gas and not so many inhabitants. The second is Sakha (Yakutia) ($7586.6) which has very rich mineral resources, including gold, diamonds and coal, and has a small population. These regions are followed by Moscow ($7545.5) due to many kinds of industrial production, trade and services, and by North and Far East regions (Magadan, Chukotka, Kamchatka, Komi) at about the $5000-7000 level of annual GRP per capita. Not far from this group is situated a set of Russian industrial regions: Krasnoyarsk (aluminum production and very large electric power stations), Samara (car production and chemical plants), Irkutsk and Tomsk in Siberia, Tatarstan, and Perm' and Sverdlovsk in the Urals (machine-building). The level of annual GRP per capita is about $4000-5000.

For brief comparison, the GDP per capita (including all non-market services and others) by official ICP results in 1993 was $24302 in USA, $20278 in Japan, $16923 in the UK, and $4669 in Poland.

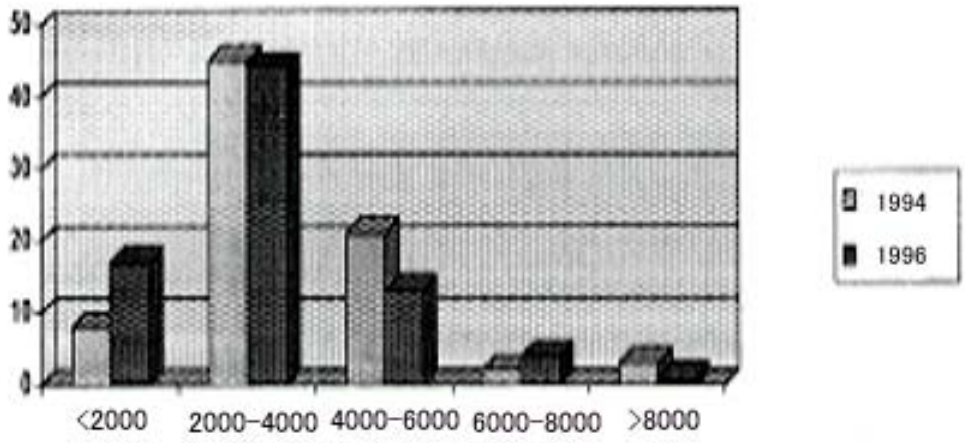
Regions with high levels of GRP per capita are not necessarily big regions. For example, Magadan and Komi are not very large regions by population (but not by area). On the other hand, St. Petersburg does not have a very high level of production per capita.

At the other end of the scale of Russian regions by GRP per capita are the North-Caucasus regions of Dagestan, Ingushetia and some others. The level of annual GRP is less than $1000 by PPP in these republics in the Russian Federation. It is no surprise to see serious social problems and civil wars here.

As for growth of GRP per capita, some groups of regions with high levels of GRP per capita had good performances this time. Tyumen' is the champion here with 143% (1994/1996) in constant prices. Tatarstan had 129% and Moscow 113%. There are very good results in Russia now.

Economic growth in Ingushetia was 119.4% in 1994-1996 in constant rubles, but nevertheless differences between the highest and lowest levels of GRP per capita are increasing: 1407% in 1994, 1774% in 1995, and 2028% in 1996.

The majority of Russia's regions are not so rich and not so poor. There is no gas or oil, but no civil war either. The majority of Russia's regions range between $2000-4000 GRP per capita. This is 5-7 times less than in Tumen' but significantly more than in North-Caucasus. The graph of distribution of regions by GRP per capita is not symmetrical. Russia has more poor regions than rich. Moreover (a very bad tendency) this graph is becoming more asymmetrical year by year.



We have rankings for Russia's regions not only by GRP, but also by actual final consumption (AFC). It is interesting to compare these.

Tumen' has the highest absolute level of GRP per capita in Russia, but only ranks seventh by AFC. The same situation holds for Sakha and many other North and Far East regions. On the other hand, Moscow goes up from third or fourth place by GRP to a stable first place according AFC; St. Petersburg moves from twentieth or twenty-second place to fifth; and Krasnodar (with Sochi and other famous Russian resorts) moves from fifty-fifth or even sixtieth place to forty-fourth. This interesting picture means that Russians prefer to make money in the North or Far East, where oil, gas, mineral sources and high wages are available, and make purchases in big cities, the South, the Black Sea or abroad.

Table 1: GRP in rubles per capita

	GRP per capita.1,000 rub.Current pr.			Constant prices indexes		
	1994	1995	1996	1995/1994	1996/1995	1996/1994
GRP - total	3583.7	9562.2	13403.5	98.5%	97.4%	96.0%
North Region						
Karelia Rep.	4276.7	10242.5	11397.4	88.4%	77.3%	68.4%
Komi Rep.	5510.5	16250.7	19396.5	108.9%	82.9%	90.3%
Arkhangel'sk obl.	3898.6	9336.3	12103.5	88.4%	90.1%	79.7%
Vologda obl.	4538	14292.9	14098.3	116.3%	68.5%	79.7%
Murmansk obl.	5439.2	13577	15069.3	92.2%	77.1%	71.1%
North-West Region						
St.-Petersburg	3490.6	9753.9	14016.7	103.2%	99.9%	103.0%
Leningrad obl.	3014.5	7466.9	10624.1	91.5%	98.9%	90.4%
Novgorod obl.	2456.9	5923.8	9469.8	89.0%	111.1%	98.9%
Pskov obl.	2188.9	5538.9	7018	93.4%	88.0%	82.3%
Center Region						
Bryansk obl.	2248.8	5272.3	7666.1	86.6%	101.0%	87.5%
Vladimir obl.	2542.1	6487.6	7765.7	94.2%	83.2%	78.4%
Ivanovo obl.	2044.7	5070.6	6954.1	91.6%	95.3%	87.3%
Kaluga obl.	2745.1	7413.4	9034.5	99.7%	84.7%	84.5%
Kostroma obl.	2813.8	7330.8	8929.6	96.2%	84.6%	81.4%
Moscow	6176.8	16611.7	27246.7	99.3%	114.0%	113.2%
Moscow obl.	2920.6	7201.2	9148	91.1%	88.3%	80.4%
Orel obl.	2410	6580.5	8138.6	100.8%	85.9%	86.7%
Ryazan obl.	3197.9	7847.3	9335.2	90.6%	82.7%	74.9%
Smolensk obl.	2886.6	6692.4	8830	85.6%	91.7%	78.5%
Tver' obl.	2889.3	7033.7	8690.7	89.9%	85.9%	77.2%
Tula obl.	2679.4	6833.1	8672.4	94.2%	88.2%	83.1%
Yaroslavl' obl.	4337.1	10155.5	12356.5	86.5%	84.6%	73.1%
Volga-Vyatka Region						
Mari-El Rep.	2224.2	5124.8	5819.3	85.1%	78.9%	67.1%
Mordovinia Rep.	1960.3	5233.4	4850.7	98.6%	64.4%	63.5%
Chuvashia Rep.	2211.7	5525.2	7561.6	92.3%	95.1%	87.7%
Kirov obl.	2646.5	7168.1	9217.6	100.0%	89.4%	89.4%
Nizhnii Novgorod obl.	4004.1	9420.2	12693	86.9%	93.6%	81.3%
Cental Chernozemnyi Region						
Belgorod obl.	2824.2	8598.7	10171.1	112.4%	82.2%	92.4%
Voronezh obl.	2357.6	6600	7789.9	103.4%	82.0%	84.8%
Kursk obl.	2787.3	7137.8	9445.8	94.6%	92.0%	87.0%
Lipetsk obl.	3817.4	11034.9	12079.7	106.7%	76.1%	81.2%
Tambov obl.	2144.9	4987.3	6547.2	85.9%	91.2%	78.3%
Volga Region						
Kalmykia Rep.	1322.8	2789.9	4159.9	77.9%	103.6%	80.7%
Tatarstan Rep.	3237	10067.2	16278.9	114.8%	112.4%	129.1%
Astrakhan' obl.	2113	5597.7	7671.2	97.8%	95.2%	93.2%
Volgograd obl.	3200	7272.7	10430.2	83.9%	99.7%	83.6%
Penza obl.	2022.4	4779.3	7041.6	87.3%	102.4%	89.4%
Samara obl.	5133.1	13611.7	18470.4	97.9%	94.3%	92.3%

	GRP per capita.1,000 rub.Current pr.			Constant prices indexes		
	1994	1995	1996	1995/1994	1996/1995	1996/1994
Saratov obl.	2913.2	7456.2	11545.7	94.5%	107.6%	101.7%
Ul'yanovsk obl.	3100.6	7160.6	9928.1	85.3%	96.4%	82.2%
North-Caucasus Region						
Adygea Rep.	1545.5	4085.4	5185.6	97.6%	88.2%	86.1%
Dagestan Rep.	955.1	1992.1	2903.6	77.0%	101.3%	78.0%
Ingushetia Rep.	751.7	1940.4	3496.4	95.3%	125.2%	119.4%
Kabardino-Balkaria Rep.	1147.7	3325.8	5453.3	107.0%	113.9%	121.9%
Karachaevo-Cherkessia Rep.	1617.6	3903	5947.4	89.1%	105.9%	94.4%
North Ossetia Rep.	1345.7	3526.6	4500.1	96.8%	88.7%	85.8%
Krasnodar kr.	2236.5	6159	8682.6	101.7%	98.0%	99.6%
Stavropol' kr.	2443.5	6835.1	8181.1	103.3%	83.2%	85.9%
Rostov obl.	2127.4	5949.1	6896.1	103.3%	80.6%	83.2%
Ural Region						
Bashkortostan Rep.	3509.3	9645.8	13753.2	101.5%	99.1%	100.6%
Udmurtia Rep.	3116.2	7593.2	10853.7	90.0%	99.3%	89.4%
Kurgan obl.	2481.1	5690.9	7547.2	84.7%	92.2%	78.1%
Orenburg obl.	3540.7	8147.4	11767.9	85.0%	100.4%	85.3%
Perm' obl.	4436.5	12291.5	15992.3	102.3%	90.4%	92.5%
Sverdlovsk obl.	4240.1	12376	15743.3	107.8%	88.4%	95.3%
Chelyabinsk obl.	3844.5	8967.3	13498.1	86.1%	104.6%	90.1%
West-Siberian Region						
Altai Rep.	1920.7	4512.5	5988	86.8%	92.2%	80.0%
Altai kr.	2238.1	5526.8	7974.6	91.2%	100.3%	91.4%
Kemerovo obl.	4408.4	11844.8	15436	99.2%	90.6%	89.9%
Novosibirsk obl.	3229.3	8377.4	11645	95.8%	96.6%	92.5%
Omsk obl.	3106.4	9532.8	13074.2	113.3%	95.3%	108.0%
Tomsk obl.	4125.5	11896	16467.8	106.5%	96.2%	102.4%
Tyumen' obl.	10573	34421.4	58899.4	120.2%	118.9%	143.0%
East-Siberian Region						
Buryatia Rep.	3554.2	7350	9117.8	76.4%	86.2%	65.8%
Tuva Rep.	1805.3	3523	4862.2	72.1%	95.9%	69.1%
Khakassia Rep.	4057.5	8704.7	10803.1	79.2%	86.2%	68.3%
Krasnoyarsk kr.	5072.6	14173.8	18676.8	103.2%	91.6%	94.5%
Irkutsk obl.	4372.8	12251.3	16553.5	103.5%	93.9%	97.1%
Chita obl.	3271.9	7738.7	9222	87.3%	82.8%	72.3%
Far East Region						
Sakha (Yakutia) Rep.	8079.6	19756	27395.1	90.3%	96.4%	87.0%
Yevrey (Jewish) A.O.	2818.4	5637.1	6939.6	73.9%	85.5%	63.2%
Chukotka (Chukchi A.O.)	5063.9	14138.7	25398.4	103.1%	124.8%	128.7%
Primor'ye (Maritime) kr.	3270.4	8519.3	10969.8	96.2%	89.5%	86.1%
Khabarovsk kr.	3838.8	9543	15196.9	91.8%	110.7%	101.6%
Amur obl.	4073.6	8011.4	13816.1	72.6%	119.8%	87.0%
Kamchatka obl.	5633.4	12973.7	18820.1	85.0%	100.8%	85.7%
Magadan obl.	7552.7	12555.7	22694.5	61.4%	125.6%	77.1%
Sakhalin obl.	4708.6	10490.5	14852.9	82.3%	98.4%	80.9%
Kaliningrad obl.	2499.4	5658.2	7832.1	83.6%	96.2%	80.4%

Table 2: GRP in dollars (by ICP results) per capita

	GRP per capita. USD based on ICP results					
	1994	1995	1996	1995/1994	1996/1995	1996/1994
GRP - total	3886.9	3812.7	3711.9	98.1%	97.4%	95.5%
North Region						
Karelia Rep.	4638.5	4083.9	3156.3	88.0%	77.3%	68.0%
Komi Rep.	5976.7	6479.5	5371.5	108.4%	82.9%	89.9%
Arkhangel'sk obl.	4228.4	3722.6	3351.8	88.0%	90.0%	79.3%
Vologda obl.	4921.9	5698.9	3904.3	115.8%	68.5%	79.3%
Murmansk obl.	5899.3	5413.5	4173.2	91.8%	77.1%	70.7%
North-West Region						
St.-Petersburg	3785.9	3889.1	3881.7	102.7%	99.8%	102.5%
Leningrad obl.	3269.5	2977.2	2942.1	91.1%	98.8%	90.0%
Novgorod obl.	2664.8	2362.0	2622.5	88.6%	111.0%	98.4%
Pskov obl.	2374.1	2208.5	1943.5	93.0%	88.0%	81.9%
Center Region						
Bryansk obl.	2439.0	2102.2	2123.0	86.2%	101.0%	87.0%
Vladimir obl.	2757.2	2586.8	2150.6	93.8%	83.1%	78.0%
Ivanovo obl.	2217.7	2021.8	1925.8	91.2%	95.3%	86.8%
Kaluga obl.	2977.3	2955.9	2501.9	99.3%	84.6%	84.0%
Kostroma obl.	3051.8	2923.0	2472.9	95.8%	84.6%	81.0%
Moscow	6699.3	6623.5	7545.5	98.9%	113.9%	112.6%
Moscow obl.	3167.7	2871.3	2533.4	90.6%	88.2%	80.0%
Orel obl.	2613.9	2623.8	2253.8	100.4%	85.9%	86.2%
Ryazan obl.	3468.4	3128.9	2585.2	90.2%	82.6%	74.5%
Smolensk obl.	3130.8	2668.4	2445.3	85.2%	91.6%	78.1%
Tver' obl.	3133.7	2804.5	2406.7	89.5%	85.8%	76.8%
Tula obl.	2906.1	2724.5	2401.7	93.8%	88.1%	82.6%
Yaroslavl' obl.	4704.0	4049.2	3421.9	86.1%	84.5%	72.7%
Volga-Vyatka Region						
Mari-El Rep.	2412.4	2043.4	1611.5	84.7%	78.9%	66.8%
Mordovinia Rep.	2126.1	2086.7	1343.3	98.1%	64.4%	63.2%
Chuvashia Rep.	2398.8	2203.0	2094.0	91.8%	95.1%	87.3%
Kirov obl.	2870.4	2858.1	2552.6	99.6%	89.3%	88.9%
Nizhnii Novgorod obl.	4342.8	3756.1	3515.1	86.5%	93.6%	80.9%
Cental Chernozemnyi Region						
Belgorod obl.	3063.1	3428.5	2816.7	111.9%	82.2%	92.0%
Voronezh obl.	2557.0	2631.6	2157.3	102.9%	82.0%	84.4%
Kursk obl.	3023.1	2846.0	2615.8	94.1%	91.9%	86.5%
Lipetsk obl.	4140.3	4399.9	3345.3	106.3%	76.0%	80.8%
Tambov obl.	2326.4	1988.6	1813.1	85.5%	91.2%	77.9%
Volga Region						
Kalmykia Rep.	1434.7	1112.4	1152.0	77.5%	103.6%	80.3%
Tatarstan Rep.	3510.8	4014.0	4508.1	114.3%	112.3%	128.4%
Astrakhan' obl.	2291.8	2231.9	2124.4	97.4%	95.2%	92.7%
Volgograd obl.	3470.7	2899.8	2888.5	83.6%	99.6%	83.2%
Penza obl.	2193.5	1905.6	1950.0	86.9%	102.3%	88.9%
Samara obl.	5567.4	5427.3	5115.0	97.5%	94.2%	91.9%

	GRP per capita. USD based on ICP results					
	1994	1995	1996	1995/1994	1996/1995	1996/1994
Saratov obl.	3159.7	2973.0	3197.4	94.1%	107.5%	101.2%
Ul'yanovsk obl.	3362.9	2855.1	2749.4	84.9%	96.3%	81.8%
North-Caucasus Region						
Adygea Rep.	1676.2	1628.9	1436.1	97.2%	88.2%	85.7%
Dagestan Rep.	1035.9	794.3	804.1	76.7%	101.2%	77.6%
Ingushetia Rep.	815.3	773.7	968.3	94.9%	125.1%	118.8%
Kabardino-Balkaria Rep.	1244.8	1326.1	1510.2	106.5%	113.9%	121.3%
Karachaevo-Cherkessia Rep.	1754.4	1556.2	1647.0	88.7%	105.8%	93.9%
North Ossetia Rep.	1459.5	1406.1	1246.2	96.3%	88.6%	85.4%
Krasnodar kr.	2425.7	2455.7	2404.5	101.2%	97.9%	99.1%
Stavropol' kr.	2650.2	2725.3	2265.6	102.8%	83.1%	85.5%
Rostov obl.	2307.4	2372.0	1909.7	102.8%	80.5%	82.8%
Ural Region						
Bashkortostan Rep.	3806.2	3846.0	3808.7	101.0%	99.0%	100.1%
Udmurtia Rep.	3379.8	3027.6	3005.7	89.6%	99.3%	88.9%
Kurgan obl.	2691.0	2269.1	2090.1	84.3%	92.1%	77.7%
Orenburg obl.	3840.2	3248.6	3258.9	84.6%	100.3%	84.9%
Perm' obl.	4811.8	4900.9	4428.8	101.9%	90.4%	92.0%
Sverdlovsk obl.	4598.8	4934.6	4359.8	107.3%	88.4%	94.8%
Chelyabinsk obl.	4169.7	3575.5	3738.1	85.7%	104.5%	89.6%
West-Siberian Region						
Altai Rep.	2083.2	1799.2	1658.3	86.4%	92.2%	79.6%
Altai kr.	2427.4	2203.7	2208.4	90.8%	100.2%	91.0%
Kemerovo obl.	4781.3	4722.8	4274.7	98.8%	90.5%	89.4%
Novosibirsk obl.	3502.5	3340.3	3224.9	95.4%	96.5%	92.1%
Omsk obl.	3369.2	3801.0	3620.7	112.8%	95.3%	107.5%
Tomsk obl.	4474.5	4743.2	4560.5	106.0%	96.1%	101.9%
Tyumen' obl.	11467.5	13724.6	16311.1	119.7%	118.8%	142.2%
East-Siberian Region						
Buryatia Rep.	3854.9	2930.6	2525.0	76.0%	86.2%	65.5%
Tuva Rep.	1958.0	1404.7	1346.5	71.7%	95.9%	68.8%
Khakassia Rep.	4400.8	3470.8	2991.7	78.9%	86.2%	68.0%
Krasnoyarsk kr.	5501.7	5651.4	5172.2	102.7%	91.5%	94.0%
Irkutsk obl.	4742.7	4884.9	4584.2	103.0%	93.8%	96.7%
Chita obl.	3548.7	3085.6	2553.9	87.0%	82.8%	72.0%
Far East Region						
Sakha (Yakutia) Rep.	8763.1	7877.2	7586.6	89.9%	96.3%	86.6%
Yevrey (Jewish) A.O.	3056.8	2247.6	1921.8	73.5%	85.5%	62.9%
Chukotka (Chukchi A.O.)	5492.3	5637.4	7033.6	102.6%	124.8%	128.1%
Primor'ye (Maritime) kr.	3547.1	3396.9	3037.9	95.8%	89.4%	85.6%
Khabarovsk kr.	4163.6	3805.0	4208.5	91.4%	110.6%	101.1%
Amur obl.	4418.2	3194.3	3826.1	72.3%	119.8%	86.6%
Kamchatka obl.	6110.0	5172.9	5211.9	84.7%	100.8%	85.3%
Magadan obl.	8191.6	5006.3	6284.8	61.1%	125.5%	76.7%
Sakhalin obl.	5106.9	4182.8	4113.2	81.9%	98.3%	80.5%
Kaliningrad obl.	2710.8	2256.1	2169.0	83.2%	96.1%	80.0%

Table 3: Actual final consumption in regions (1995)

	AFC per capita in 1,000 rubles	AFC per capita in USD (exch.rate)	AFC per capita in USD (by ICP)	Ranking of regions by AFC
Averege AFC	5862.9	1287.5	2337.7	
North Region				
Karelia Rep.	6331.1	1390.3	2524.4	16
Komi Rep.	5882.4	1291.8	2345.5	21
Arkhangel'sk obl.	5826.7	1279.6	2323.2	22
Vologda obl.	5935.5	1303.5	2366.6	19
Murmansk obl.	7461.9	1638.7	2975.2	9
North-West Region				
St.-Petersburg	8095.6	1777.8	3227.9	5
Leningrad obl.	4858.2	1066.9	1937.1	38
Novgorod obl.	5446.4	1196.1	2171.6	28
Pskov obl.	4627.7	1016.3	1845.2	42
Center Region				
Bryansk obl.	4151.6	911.7	1655.3	53
Vladimir obl.	4169.4	915.6	1662.4	51
Ivanovo obl.	4019.2	882.6	1602.6	59
Kaluga obl.	5957.8	1308.4	2375.5	18
Kostroma obl.	4919.5	1080.3	1961.5	36
Moscow	18215.1	4000.1	7262.8	1
Moscow obl.	4736.5	1040.2	1888.6	40
Orel obl.	4728	1038.3	1885.2	41
Ryazan obl.	4051.1	889.6	1615.3	55
Smolensk obl.	4961.1	1089.5	1978.1	35
Tver' obl.	4231.6	929.3	1687.2	50
Tula obl.	4420.6	970.8	1762.6	46
Yaroslavl' obl.	5724.9	1257.2	2282.7	23
Volga-Vyatka Region				
Mari-El Rep.	3911.3	858.9	1559.5	64
Mordovinia Rep.	3517.3	772.4	1402.4	70
Chuvashia Rep.	3982.1	874.5	1587.8	60
Kirov obl.	5448.6	1196.5	2172.5	27
Nizhnii Novgorod obl.	4279.3	939.8	1706.3	49
Cental Chernozemnyi Region				
Belgorod obl.	4485	984.9	1788.3	45
Voronezh obl.	4152.7	912.0	1655.8	52
Kursk obl.	3946.5	866.7	1573.6	62
Lipetsk obl.	5225.9	1147.6	2083.7	31
Tambov obl.	3769.8	827.9	1503.1	66
Volga Region				
Kalmykia Rep.	2462.5	540.8	981.9	77
Tatarstan Rep.	4623.1	1015.3	1843.3	43
Astrakhan' obl.	3660.6	803.9	1459.6	68
Volgograd obl.	4043.7	888.0	1612.3	57
Penza obl.	3929.1	862.8	1566.6	63
Samara obl.	6887	1512.4	2746.0	10

	AFC per capita in 1,000 rubles	AFC per capita in USD (exch.rate)	AFC per capita in USD (by ICP)	Ranking of regions by AFC
Saratov obl.	4031.1	885.2	1607.3	58
Ul'yanovsk obl.	3977.8	873.5	1586.0	61
North-Caucasus Region				
Adygea Rep.	3268.5	717.8	1303.2	74
Dagestan Rep.	1276.3	280.3	508.9	78
Ingushetia Rep.	1014.2	222.7	404.4	79
Kabardino-Balkaria Rep.	3517.2	772.4	1402.4	71
Karachaevo-Cherkessia Rep.	2679	588.3	1068.2	76
North Ossetia Rep.	3078.8	676.1	1227.6	75
Krasnodar kr.	4621.3	1014.9	1842.6	44
Stavropol' kr.	3900.9	856.7	1555.4	65
Rostov obl.	3724.5	817.9	1485.0	67
Ural Region				
Bashkortostan Rep.	4117.4	904.2	1641.7	54
Udmurtia Rep.	4748.7	1042.8	1893.4	39
Kurgan obl.	3280.8	720.5	1308.1	73
Orenburg obl.	3632	797.6	1448.2	69
Perm' obl.	5601.3	1230.1	2233.4	25
Sverdlovsk obl.	5912.2	1298.3	2357.3	20
Chelyabinsk obl.	4368.1	959.3	1741.7	47
West-Siberian Region				
Altai Rep.	4337.8	952.6	1729.6	48
Altai kr.	4045.2	888.3	1612.9	56
Kemerovo obl.	8001.9	1757.3	3190.6	6
Novosibirsk obl.	5269	1157.1	2100.9	30
Omsk obl.	5628.3	1236.0	2244.1	24
Tomsk obl.	5494.7	1206.7	2190.9	26
Tyumen' obl.	7962.4	1748.6	3174.8	7
East-Siberian Region				
Buryatia Rep.	4986.4	1095.0	1988.2	33
Tuva Rep.	3311.3	727.2	1320.3	72
Khakassia Rep.	4863.5	1068.0	1939.2	37
Krasnoyarsk kr.	6621	1454.0	2640.0	12
Irkutsk obl.	6497.9	1427.0	2590.9	15
Chita obl.	5413.7	1188.9	2158.6	29
Far East Region				
Sakha (Yakutia) Rep.	9161.8	2012.0	3653.0	4
Yevrey (Jewish) A.O.	5004.9	1099.1	1995.6	32
Chukotka (Chukchi A.O.)	7611.3	1671.5	3034.8	8
Primor'ye (Maritime) kr.	6527.9	1433.6	2602.8	14
Khabarovsk kr.	6581.5	1445.3	2624.2	13
Amur obl.	6243.1	1371.0	2489.3	17
Kamchatka obl.	9289.2	2040.0	3703.8	3
Magadan obl.	9754.5	2142.1	3889.4	2
Sakhalin obl.	6641.3	1458.5	2648.0	11
Kaliningrad obl.	4966.7	1090.7	1980.3	34

Table 4: Ranking of Russian regions by GRP per capita

	Ranking of regions in Russian Federation		
	1994	1995	1996
North Region			
Karelia Rep.	17	19	32
Komi Rep.	6	4	6
Arkhangel'sk obl.	23	27	27
Vologda obl.	12	5	19
Murmansk obl.	7	9	17
North-West Region			
St.-Petersburg	30	22	20
Leningrad obl.	40	38	36
Novgorod obl.	55	57	40
Pskov obl.	64	62	65
Center Region			
Bryansk obl.	59	65	61
Vladimir obl.	52	54	59
Ivanovo obl.	68	68	66
Kaluga obl.	49	40	47
Kostroma obl.	47	42	48
Moscow	4	3	3
Moscow obl.	41	44	45
Orel obl.	57	53	54
Ryazan obl.	36	35	42
Smolensk obl.	44	51	49
Tver' obl.	43	48	50
Tula obl.	50	50	52
Yaroslavl' obl.	16	20	26
Volga-Vyatka Region			
Mari-El Rep.	62	67	72
Mordovinia Rep.	70	66	56
Chuvashia Rep.	63	64	62
Kirov obl.	51	45	44
Nizhnii Novgorod obl.	22	26	25
Cental Chernozemnyi Region			
Belgorod obl.	45	30	38
Voronezh obl.	58	52	58
Kursk obl.	48	47	41
Lipetsk obl.	26	17	28
Tambov obl.	65	69	69
Volga Region			
Kalmykia Rep.	76	77	77
Tatarstan Rep.	33	21	12
Astrakhan' obl.	67	61	60
Volgograd obl.	35	43	37
Penza obl.	69	70	64
Samara obl.	8	8	9

	Ranking of regions in Russian Federation		
	1994	1995	1996
Saratov obl.	42	39	31
Ul'yanovsk obl.	39	46	39
North-Caucasus Region			
Adygea Rep.	74	72	74
Dagestan Rep.	78	78	79
Ingushetia Rep.	79	79	78
Kabardino-Balkaria Rep.	77	76	73
Karachaevo-Cherkessia Rep.	73	73	71
North Ossetia Rep.	75	74	76
Krasnodar kr.	61	55	51
Stavropol' kr.	56	49	53
Rostov obl.	66	56	68
Ural Region			
Bashkortostan Rep.	29	23	22
Udmurtia Rep.	37	37	34
Kurgan obl.	54	58	63
Orenburg obl.	28	33	29
Perm' obl.	13	13	13
Sverdlovsk obl.	18	12	14
Chelyabinsk obl.	24	28	23
West-Siberian Region			
Altai Rep.	71	71	70
Altai kr.	60	63	55
Kemerovo obl.	14	16	15
Novosibirsk obl.	34	32	30
Omsk obl.	38	25	24
Tomsk obl.	19	15	11
Tyumen' obl.	1	1	1
East-Siberian Region			
Buryatia Rep.	27	41	46
Tuva Rep.	72	75	75
Khakassia Rep.	21	29	35
Krasnoyarsk kr.	9	6	8
Irkutsk obl.	15	14	10
Chita obl.	31	36	43
Far East Region			
Sakha (Yakutia) Rep.	2	2	2
Yevrey (Jewish) A.O.	46	60	67
Chukotka (Chukchi A.O.)	10	7	4
Primor'ye (Maritime) kr.	32	31	33
Khabarovsk kr.	25	24	16
Amur obl.	20	34	21
Kamchatka obl.	5	10	7
Magadan obl.	3	11	5
Sakhalin obl.	11	18	18
Kaliningrad obl.	53	59	57