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N.V. ZUBAREVICH AND S.G. SAFRONOV

Inequality in the Socioeconomic Development of the Regions and Cities of Russia in the 2000s

Is It Increasing or Decreasing?

Research on socioeconomic inequality in the regions and cities of Russia shows that it is difficult to establish clear nationwide trends and to interpret reasons for continuing patterns. What reduction there has been in inequality between regions in Russia is probably due more to the government's programs of transfer payments to individuals than to improvements in the structural economy of those regions.

Regional inequality is one of the most widely discussed problems of Russia, as the disproportions in that sphere have increased dramatically in the post-Soviet period. A no less acute problem is the inequality of cities—for example, compare Moscow and a small-size raion center in

English translation © 2014 M.E. Sharpe, Inc., from the Russian text © 2013 the Russian Academy of Sciences, the Presidium of the Russian Academy of Sciences, and the authors. “Neravenstvo sotsial’no-ekonomicheskogo razvitiia regionov i gorodov Rossii 2000-kh godov: rost ili snizhenie?” *Obshchestvennye nauki i sovremennost’*, 2013, no. 6, pp. 15–26.

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Translated by Kim Braithwaite.

one of the remote areas of Russia. However, this is mentioned less often because this inequality has existed for centuries. Up to now, scientific studies have not arrived at a precise answer to many important questions. How large and firmly established are inequalities in the regions and cities? Have they changed during the post-Soviet decades in Russia? What effect do periods of economic growth and crises have on spatial inequality? Before we start to seek answers to these questions, let us recall the causes of spatial inequality.

The objective causes of inequality

We have examined very important studies accounting for the objective character of disproportions in spatial development in previous works (Zubarevich, 2010; Zubarevich and Safronov, 2011), but it is worth recalling their results. Regional science has shown that spatial inequality is the objective consequence of the concentration of competitive advantages in certain territories versus their lack or shortage in other territories. In the middle of the twentieth century, G. Myrdal (1957) examined the effect of the concentration of economic activity in territories favorable to business. A major role in understanding the laws governing the development of a space was played by the center–periphery theory (the theory of polarized development) developed by J. Friedmann (1966).

At the end of the twentieth century the “new economic geography” appeared. Using econometric models, it explained the causes of the concentration of economic activity and the mobility of employed people. P. Krugman systematized the competitive advantages of the different territories, singling out two groups of factors. The “first nature” factors include the possession of natural resources (minerals, land, etc.) that are in demand by the market, and also geographic location, including location on the border of global trade routes that reduces the costs of transportation. These advantages exist regardless of what people do. “Second nature” factors include advantages created by human activity and society: the agglomerative effect (the effect of population concentration in cities, which enables economies of scale and increases the variety of activities), human capital (education, health, motivation to work, mobility, and adaptability), institutions that foster an improved entrepreneurial climate, population mobility, the dissemination of innovations, and so on (Krugman, 1991). Yet another extremely important factor in Russia is infrastructure development, which reduces economic distance.

World experience has shown that the role played by factors of resource possession and geographic location is diminished as countries and regions become more developed. The basic trend is an increased significance of “second nature” factors as a result of urbanization, increased investment in human beings, infrastructure development, and institutional modernization.

Over time, the significance of the different competitive advantages of the regions changes, and this affects the dynamic of spatial inequality. The report of the World Bank for 2009 shows that in the developed countries of Europe and in the United States the peak of the rise in regional inequality came at the end of the nineteenth century and the first half of the twentieth century—in other words, during the period of industrial development, while by the end of the twentieth century the increase in inequality slowed down a great deal (World Bank, 2009). One cause of this was the accumulation of national wealth in the developed countries and the increased scale of territorial redistribution carried out by the state, which makes it possible to support the less developed regions. But a second cause is the formation of higher-quality human capital, a well-developed infrastructure, and modernized institutions in all regions of these countries. Over the long-term period, the “second nature” factors help to mitigate regional economic inequality and to foster new areas of growth.

In research in other countries considerable attention is also focused on analyzing trends of inequality. P. Martin has shown that in the European Union (EU), even though “second nature” factors are dominant, regional differences in the level of economic development are not being smoothed out (Martin 2005). The dynamic of inequality in 1990–2000 was measured using the standard deviation of per capita indicators of gross domestic product (GDP) on the level of countries of the EU and on the level of regions of NUTS2.¹ It turned out that inequality tendencies between countries and between regions within these countries do not coincide. The less developed countries of Western Europe that became members of the EU in the 1970s and 1980s were able, by the end of the twentieth century, to reduce their lag in level of development as measured by per capita GDP, behind the more developed countries (the “old” members of the European Union). However, the success came at the cost of increased regional inequality within most of the less developed countries. Other studies (Duro, 2001) have also shown that from the mid-1980s to the end of the 1990s the differences in level of development between EU member countries fell by 25 percent, while disproportions in their regional development rose by 10 percent.

The different trends for the different countries and their regions are easy to account for in full. Inequality between regions within a country increases because business invests where competitive advantages exist, to reduce the costs of business. This priority to invest in “strong” regions polarizes the economic space. At the same time, differences between the countries are reduced because regions that have competitive advantages ensure a higher payback from investments, and this helps the economy of the whole country to grow more rapidly. Thus, Euro-integration is leading to a convergence of countries, but not to a convergence of regions within each country, especially the countries with a lower level of development.

The countries of Central and Eastern Europe that have become EU members in the past decade are characterized by the same trends. Business investments are channeled primarily into the capital city areas and the western regions adjacent to the “old” countries of the EU. This makes it possible to use competitive advantages in the form of the agglomerative effect and minimal economic distance to the sales markets, thereby reducing costs. Consequently, regional inequality also rises in these countries, as the leading regions lose touch with the peripheral regions. Only in this way can the economies of the new EU members reduce their lag behind the more developed countries of Europe.

In large countries that are trying to catch up in their development and are located on other continents, economic inequality between regions also increased at the end of the twentieth century. This is a consequence of the accelerated development of the regions that have definite competitive advantages, such as the maritime provinces in China, the large agglomerations in Brazil, territories with higher levels of human capital, such as India, and so on. As a result of the accelerated growth of the regions with competitive advantages, the economies of these countries as a whole also developed more rapidly. Only in the past few years have the rulers of China begun to focus more on the development of the interior regions of the country, but even in those places their policy is to stimulate the development of the local territories that have competitive advantages, especially advantages of infrastructure and agglomeration.

In general, both theory and world experience have shown that catch-up development is always territorially localized, and this strengthens the polarization of a space. In countries that are trying to catch up in their development, the main effort is channeled into stimulating economic development of the territories with competitive advantages, such as a

favorable geographical location, the agglomerative effect, resources that are in demand in the market, and so on.

In addition to economic inequality between regions, which is measured in terms of per capita gross regional product (GRP), another angle to the problem involves social inequality, which is measured in terms of the regional differentiation in regard to the population's level of incomes and employment, their qualitative characteristics (their state of health, level of education, etc.). Interregional social inequality that is too high inhibits the growth of human capital, slows down institutional modernization, and for this reason the rise in social inequality negatively affects development. World Bank studies have shown that starting in the 1960s and 1970s social inequality in many of the developed countries, measured by the per capita monetary incomes of the population, or wages, declined (World Bank, 2009). Martin (2005) did a study of the NUTS2 regions in France and also showed that against the background of increased economic development during 1983–99, the inequality of average per capita incomes of the population went down. This is largely the result of the country's effective, targeted redistribution policy aimed at supporting low-income population groups. However, the tendency toward mitigation of social inequality is not a general one. In Great Britain and the United States, redistributive social policy does not play the kind of significant role that it does in continental Europe, especially in France. In general, the experience of Europe has shown that regional inequality in the population's monetary incomes can be mitigated, but it is basically through measures of effective redistributive social policy rather than regional stimulation policy for the purpose of attracting investment and creating new jobs in the less developed regions.

It is considerably more difficult to mitigate social differences in employment. The labor market is very dependent on the state of the region's economy: if not much investment is coming into the region, not many new jobs will be created. Furthermore, employment inequalities are more difficult to measure owing to the cyclical nature of the labor market. During periods of economic growth, the more developed regions with low levels of unemployment increase their employment levels more quickly, while during crisis periods, the employment rates there decline more quickly. Conversely, problem regions with high unemployment have more stable indicators and are less susceptible to the effect of economic cycles. As a result, regional inequalities

in employment are changeable, and they depend on the economy's fluctuations.

Analyzing theories and global development trends helps to reveal the specifics in Russia. In Russia the importance of “first nature” factors remains high, especially those relating to the possession of the most in-demand mineral resources in the global market—oil, gas, and metals. “Second nature” factors are more likely to act as barriers to development: the institutional environment remains unfavorable, investments in human capital are insufficient and ineffective, the infrastructure is not well developed, and remote geographic locations constitute a barrier to development for most of Russia's regions.

The most important “second nature” factor to Russia is the agglomerative effect: its positive influence is most notable in the cities of federal status that are largest in terms of population size, especially in Moscow. However, the advantages of the capital city do not stem solely from the maximum concentration of the population and the diversity of its economic activity, which in the aggregate constitutes the essential character of the agglomerative effect (Fujita, Krugman, and Venables, 1999). No less important is the institutional factor, that is, its status as the capital city. Moscow gains huge advantages from the concentration of the headquarters of the country's major companies, which pay taxes in the capital city and create high-paying jobs. Under the conditions of the super-centralized system of administration of business and the state, the importance of the status factor is comparable to the effect of a powerful objective advantage—the agglomerative effect (Zubarevich, 2012). St. Petersburg also gains additional advantages as a city of federal status, but its status as the “second capital city” is not formal, so the influence of its status advantage is manifested much less strongly.

In the other cities of Russia, even those with populations of a million or more, the agglomerative effect is much less strongly manifested. This for several reasons: a population that is much smaller in comparison with the federal status cities, and lower status (all are municipalities), and this greatly reduces budget revenues; furthermore, the overwhelming majority of the cities do not have institutional advantages (only seventy-nine cities are regional capitals). The most important reason, however, is the size of the city: of the 1,090 cities in Russia only 164 have populations of more than 100,000, and of these, 73 have more than 250,000, and 13 cities² have a population of 1 million.

The level and dynamic of interregional inequality in Russia

Comparisons of the indicators of polar opposite Russian regions in order to assess inequality are not very useful, although the method is still popular. In scientific studies, meticulous methods of assessment are used to rate the scale and trends of regional inequality. A detailed review and systematization of studies of regional inequality using methods of spatial econometrics have been done (see Glushchenko, 2010); therefore, we mention only the main areas of research and the newest studies.

Most studies of inequality test two interconnected concepts of convergence: the presence of β -convergence, which offers accelerated development of the poorer regions and should lead to the leveling out of economic development, and σ -convergence, in which the interregional dispersion of the indicators of per capita GRP is reduced. Usually, the indicator of per capita GRP is used for the measurements, while in some cases the per capita incomes of the population are used. The first study (Mikheeva, 1999) based on the data of per capita GRP for 1990–96, showed the absence of both types of convergence. A study by the Institute for the Economics of the Transition Period (Drobyshevskii et al., 2005; *Ekonomiko-geograficheskie*, 2007) used the indicator of per capita GRP for 1996–2004 for the calculations, corrected for the cost of living in the regions. The σ -convergence hypothesis was not confirmed, and fluctuations of the coefficient of variation turned out to be statistically insignificant, which was a sign of the absence of any definite tendency toward a decrease or increase in regional inequality. The same results were obtained for the β -convergence as a whole, even though the calculations of provisional β -convergence (the influence of proximity) show, all else being equal, a positive influence of the more developed regions on the dynamic of development of neighboring regions that are less developed.

The dissimilar results are perfectly explainable. First, the period of the measurements is too short: up-to-date statistics of GRP, employment rates, and monetary incomes of the population did not appear until the mid-1990s. Second, during that period Russia went through periods of crisis and growth, and different economic trends can have different effects on regional inequalities. Third, the reliability of regional statistics is not very high, especially in regard to the GRP and the population's income. The GRP indicator changed dramatically in some regions, for institutional reasons—for example, because major companies became registered in a region with a legal address, or they left; until 2005, Russia had regions

that constituted offshore entities, with overly high GRP indicators. Fourth, given the absence of any clearly expressed dynamic trend, the methods by which regional inequality is measured may influence the result.

And yet another angle involves assessing the contribution made by the different economic sectors to regional inequality. A study out by economists in Novosibirsk (Lavrovskii and Shil'tsin, 2009) used the decomposition method to determine the contribution made by particular sectors of the economy to the inequality of different regions in terms of per capita GRP. D. Ivanov measured the dynamic of regional differences in the population's employment and incomes during the 2000s, for different kinds of activity, and using the Theil index he decomposed the contribution made by the different kinds of activity to regional inequality (Ivanov, 2011). The results of that study were unexpected: it turned out that a differentiating role in employment and incomes is played by the services sector, including nonmarket services, while a leveling role is played by employment and wage levels in the processing industries of the regions.

To measure socioeconomic inequality of regions and cities we use an adapted Gini coefficient and the coefficient of variation.³ In terms of content, the Gini coefficient (the Lorenz coefficient) assesses the uniformity of distribution, and it is more sensitive to inequality and shifts in the middle portion of the ranked series, while the coefficient of variation reveals the dispersion of the characteristics of all regions. For the regions of Russia it is necessary to "weight" the indicators in accordance with population size. Unweighted measurements distort the degree of regional inequality as a result of very fragmented administrative territorial division and the unequal character of entities of the Russian Federation in terms population size. To ensure that calculations of the dynamic of the regions of Russia were comparable, we excluded data from all of the autonomous okrugs (most of which became parts of other regions in the second half of the 2000s) and Chechnya. To assess the level and dynamic of interregional inequality we used per capita indicators of GRP, investments, monetary incomes of the population, average wage levels, poverty, and unemployment rates, using International Labor Organization methodology.

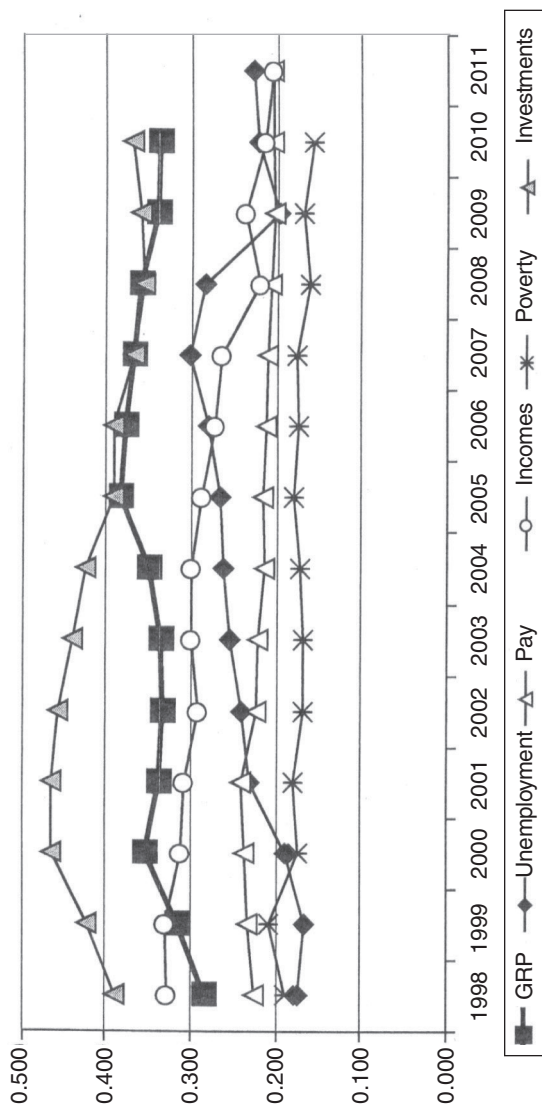
The study results for inequality based on 1998–2008 have been published for the regions of Russia (*Obzor*; 2007; Zubarevich, 2009, 2010), and for the regions of three large post-Soviet countries—Russia, Ukraine, and Kazakhstan (Zubarevich and Safronov, 2011). However, these publications do not reflect changes in spatial inequality during the period of the new crisis and the stage when it was over.

The calculations of the Gini coefficient for interregional inequality in Russia over the period between 1998 and 2011 are presented in Figure 1. The graph shows that the dynamic of economic inequality of the regions of Russia is not steady. The increase in inequality in terms of per capita GRP during the first years of the revival after the 1998 crisis and at the beginning of the boom in oil prices in 2004–5 was replaced by a decrease in inequality during the period of the new crisis, which had hardly any effect on the weakly developed and highly subsidized regions but heavily affected the more developed ones. On the whole, during the period in question, the economic inequality between regions became greater in terms of per capita GRP.

Regional inequality of per capita investment in Russia was the highest among all of the indicators being examined here, but during the period of economic growth in the 2000s it declined steadily. This was because of the rapid growth of federal and regional budget revenues, which made it possible to increase budget investments in the less developed regions, and also because of expansion in the number of regions that were attractive to private investors during the phase of the economic revival. However, the process of convergence stalled during the crisis period [of the 1990s], and then went into reverse when the crisis began to ease: the possibilities of budget investments were reduced considerably, while private investors became more cautious. Note that the volume of investments in Russia shrank during the crisis period, by 20 percent, and it was not until the end of 2012 that it regained its precrisis level.

The Gini coefficient for per capita incomes shows a clear trend toward a mitigation of regional inequality in Russia, especially at the peak of the oil prices in 2006–8. This is also the result of increased amounts of the state redistribution policy, and, moreover, not regional but social. The increase in social welfare payments to low-income population groups, the percentage of which is higher in the less well-developed regions, also had the side effect of reducing interregional income inequalities. Yet another factor is the accelerated increase in pensions, which boosted average per capita incomes in the medium- and less-developed regions of the Center and the Northwest, with their most aged populations and maximum percentage of retired people. The regions' wage inequality has been decreasing since 2002, although at a slower rate. In 2002 regular increases in the wages of budget-funded workers began, and, moreover, at a higher rate in comparison with the private sector of the economy. This social policy measure also had a regional

Figure 1. Gini Coefficient for Regional Inequality in Russia



projection: the percentage of people employed in branches of the budget-funded sector is higher in the less strongly developed regions, owing to the shortage of other kinds of jobs. Since 1999 regional inequality has decreased in terms of poverty levels, but this is still at a slow rate (income disproportions are too large, and targeted support for the poor in Russia is weak). During the 2008 crisis this inequality worsened slightly, as did the level of income inequality.

The Gini coefficient for regional inequality in employment levels differs significantly from other ones. During the period of economic growth after the 1998 crisis, and up to the new crisis of 2008, regional inequality in employment rose steadily; in the 2008 crisis it began to decline, while in the stage of emergence from the crisis it returned to the former trend of divergence. This dynamic is in accord with theory: in competitive regions with lower unemployment rates, economic growth leads more quickly to the creation of new jobs, and unemployment rates go down more substantially. But during the initial stage of the crisis, unemployment rises more quickly but from a low starting level. Weakly developed regions with increased unemployment levels are more stable during any phase of the economic cycle: not many new jobs are created there because they are not very attractive to investors.

Looking at the period 1998–2011 as a whole, we find an obvious convergence among the regions for all standard of living indicators— incomes, wages, and poverty level. Inequality in consumption also goes down, measured in terms of the rate of retail trade per capita. The mitigation of regional differences in incomes and consumption is the result of the “fat years” and the increased redistribution of huge revenues from oil. Over the longer range this tendency may be interrupted: since the 2009 crisis, growth in the population’s incomes has slowed considerably because the super revenues from oil are not growing, and the budget is already overburdened by multiple obligations, including social obligations.

Calculations also show that tendencies of inequality in Russia do not coincide with other large post-Soviet countries in all respects (Zubarevich and Safronov, 2011). A trend common to Russia, Ukraine, and Kazakhstan was the rise in regional economic inequality prior to the beginning of the new crisis of 2008–9. In Russia, however, this trend was less steady, and it was replaced periodically by a small decline in inequality under the influence of the state’s large-scale redistribution policy. In Kazakhstan and Ukraine the tendencies of economic divergence among the regions

were more prominent prior to the crisis: in Kazakhstan, because its economy is much more oriented toward raw materials, which increases regional inequality, and a lower level of redistribution, and in Ukraine because of the state's weaker equalization policy under the conditions of its political instability.

Regional inequality in standard of living (incomes, wages, and poverty level) went down the most notably in Russia, as a result of the state's social policy in redistributing large amounts of oil rents. This trend coincides with the dynamic of regional income inequality in the more developed countries that have a strong social policy (France and others). In Kazakhstan the process of convergence among the regions is notable only in terms of per capita incomes, while it is not manifested in wages and poverty level. This could be a consequence of a smaller-scale social policy as well as the lower standard of living of the rural population. Ukraine is the most prominent example of regional divergence of all the indicators of standard of living owing to the weakness of the state's social policy.

When it comes to employment, which is more tightly linked to the state of the regional economies, trends that strengthen regional differences are dominant, especially in Russia. They are adjusted by the cyclical nature of the economy: during periods of economic growth divergence predominates; during periods of crisis regional differences in unemployment levels decline. In Kazakhstan, however, owing to the specific employment structure, with its very high percentage of self-employed people, it is not possible to pick out trends because unemployment is masked by the level of self-employment.

On the whole, the study showed that state policy can influence the dynamic of regional inequality, especially social inequality, but two conditions are necessary for this: the country's sufficiently high level of development or, at the minimum, a rapid increase in budget revenues, which makes it possible to increase the scale of redistribution, as well as the priority given to the policy of mitigating disproportions.

Inequality of the cities: Convergence or divergence?

Scientific studies of inequality in the development of Russia's cities are few, even compared to studies of regional inequality. The first integrated assessment of the level of development of all of Russia's cities was carried out in the second half of the 1990s on ten economic and social indicators selected based on the criterion of representativeness and

reliability (Nefedova and Treivish, 1998). The study found a number of important trends. First, during the crisis years of the 1990s, over all, large cities with populations of at least 250,000 inhabitants proved to be more stable. Second, the authors showed the large role played by the specialization of a city's economy: monocities, especially not very large ones, specializing in the processing sectors, formed a group of outsiders, while cities specializing in the oil, gas, and mining sectors fell into the group of leaders regardless of their size. In the study, inequality in the development of the cities was measured using quite simple methods (breaking down the distribution for each indicator, on a ten-point scale, for subsequent summation). A more up-to-date analysis was made using the same method (Nefedova and Treivish, 2010), but measuring not only the differentiation of the development of cities but also the scale of inequality was not the authors' intention.

In recent years, interest in the inequality of cities has increased—not on the part of science, however, but in the mass media and in consulting. Multiple ratings of cities have appeared, ranking the level of cities' attractiveness for conducting business and for people's lives. Especially often compared are world (global) cities, which Moscow is also striving to join.⁴ Russia's experience is more modest, basically consisting of ratings of large and especially large cities, which journalists⁵ and consulting businesses⁶ calculate. However, any ratings can be subject to doubt owing to problems of methodology and information. First, Russian municipal statistics are even less reliable than regional statistics; a limited list of indicators of cities' development is used to rate inequality, and the data have many deficiencies.⁷ Second, more than half of the large cities are similar in terms of demographic characteristics, levels of economic development, and basic social indicators.⁸ Any ranking of the vast "middle" in the form of a rating makes no sense because differences in the regional indicators are minimal. Third, the level and tendencies of development of cities with respect to the different indicators are not the same, so that a city's place in the ratings depends on the set of indicators and the means by which they are interpreted. It is highly likely to arrive at something akin to "the average temperature of patients in the hospital," by integrating contrastive indicators. For this reason, the weightings cannot be especially trusted, and their scientific significance is minimal.

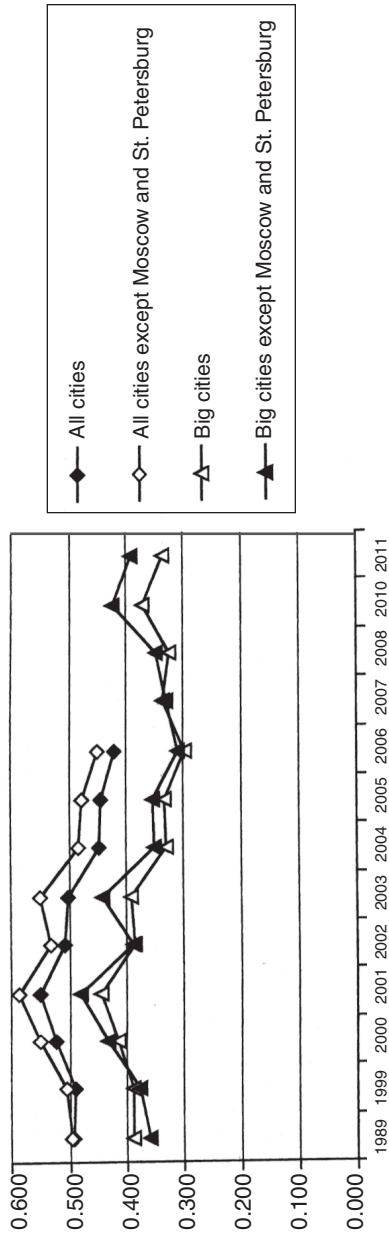
The calculations of inequality among the cities presented were conducted by the authors of the present article using the same method as for regional inequality, using an adapted Gini coefficient and coefficient

of variation. When assessing inequality it is important to consider the super-concentration of the economy and the incomes of the Moscow population: the capital city accounts for almost one-quarter of the summary total GRP of the regions and almost one-fifth of all Russians' incomes. Having the status of a federal city also creates advantages for St. Petersburg, although not on such a large scale. Differences among the other cities of Russia can be leveled out against the background of the capital cities; for this reason, the calculations of inequality were done for all of the cities and also with the federal cities left out to assess the inequality of the rest.

A first hypothesis assumed that the medium-size and small cities that form the largest percentage of the entire set develop at a slower pace owing to the clear weakness of the agglomerative effect; for this reason, the inequality to be measured for all of the cities is large, and it can even become larger. The second hypothesis was that the large cities develop more vigorously (by town planning classification, these are cities with populations of more than 100,000 residents); for this reason, the inequality within this group is lower. Even among the big cities, however, inequalities can become larger because the influence of the agglomeration effect is more substantial for the large and especially large cities (those with populations of more than 250,000 and 500,000, respectively). Furthermore, most of the large cities are regional centers that also have additional institutional advantages.

The calculations showed that the inequality of Russia's cities in terms of per capita investments, as measured by the Gini coefficient (see Figure 2), is comparable in scale to interregional inequality (0.500 to 0.400), and even exceeded it during the first years of economic growth. Inequality among cities and regional inequality show no stable trend: during the first years after the 1998 crisis it grew, and then it went down, and, moreover, it did so up to 2009 for the big cities.⁹ In 2010, however, the level of inequality rose again, because, among other things, Sochi and Vladivostok received very large investments in connection with the implementation of mega-projects (the APEC Summit [Asia-Pacific Economic Cooperation] and the Olympics). For this reason, and also because even in 2012 the federal cities did not emerge from their substantial investment slump caused by the recent crisis, the inequality among big cities, without taking into account the capital cities, became stronger than with the capital cities taken into account. The second indicator of inequality—the coefficient of variation—changed in differing ways with a strong amplitude of

Figure 2. Gini Coefficient for Cities of Russia in Terms of Per Capita Investments in Fixed Capital



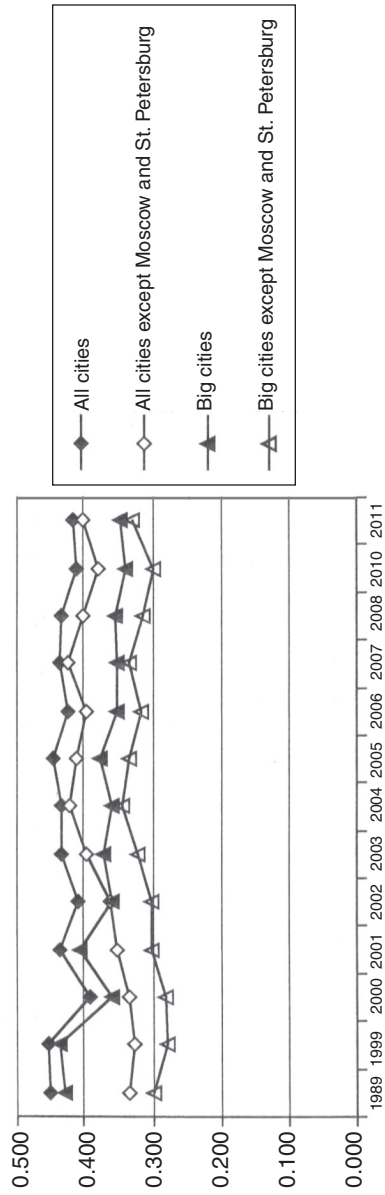
Source: Calculations by Safronov based on Rosstat data.

fluctuations, which makes it very difficult in general to assess the trend of inequality of the cities in terms of investments.

Another indicator reflecting both economic development and the standard of living on the basis of the population's solvent demand, is per capita circulation in retail trade. This indicator shows less inequality among cities than does the indicator of investments. Over the past ten years it has changed quite insignificantly for all cities (see Figure 3), but within the set of large cities (of more than 100,000 residents) it went down in terms of both the Gini coefficient and the coefficient of variation. This is due to two factors. First, the increasing spread of modern trade formats—large trade networks—from the federal cities to the million-population cities, and then to the especially large cities (those with more than half a million inhabitants), the large and major cities, which reduced the gap between Moscow and St. Petersburg in terms of trade. Second, the large cities that the networks include come to have a more rapid decline in the percentage of trade in the markets, which the statistics do not measure accurately, based on underassessments that have often been stated too low. But if we exclude the federal districts, we find the opposite trend of increased inequality for the rest, including the large cities, in the first half of the 2000s. During that period the concentration of trade in the federal cities was huge (in Moscow alone, up to 20 percent of the total circulation of retail trade in the country), while the spread of trade networks into the large cities was going on full force, which made the gap between them even wider in terms of the per capita indicators of trade, and the cities of smaller population.

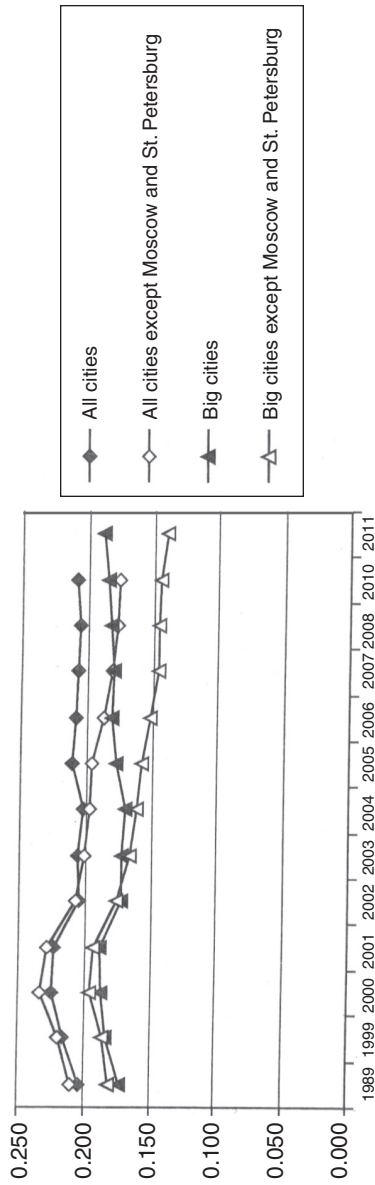
Wage inequality, as measured by the Gini coefficient for all cities (see Figure 4), is substantially smaller than the two preceding ones, and comparable to interregional inequality with respect to that indicator (0.200 to 0.220). For big cities it is even lower, especially when the federal cities are excluded. The dynamic of cities' inequality is not steady: at the beginning of the emergence from the crisis of 1998 it increased—the trend was general—while in 2002, with the first substantial increase in wages to budget-funded workers, it went down noticeably. The following years witnessed a stabilization, while the inequality of the big cities even increased—both during the stage of economic revival and during the 2009 crisis and emergence from it. This means that the differentiation among the big cities in terms of standard of living is increasing, in contrast to the entire set of Russia's cities. The cause of this lies in the gap of wages in the federal cities, which possess the maximum advantages of

Figure 3. Gini Coefficient for Cities of Russia in Terms of Per Capita Circulation of Retail Trade



Source: Calculations by S.G. Safronov based on Rosstat data.

Figure 4. Gini Coefficient for Cities of Russia in Terms of Average Wages



Source: Calculations by S.G. Safronov based on Rosstat data.

the agglomeration effect and status. When the federal cities are excluded, we find a steady decline in inequality for all of the cities and for the large ones. They become more similar to each other in terms of wages, but they lag further and further behind the federal cities.

Wage inequality as measured by the coefficient of variation (which is more sensitive to the dispersion of indicators) decreased more steadily throughout the entire period of the measurements as a result of accelerated increases in wages to budget-funded workers, the percentage of which among employed people is higher in the smaller-size cities. Nonetheless, tendencies of mitigation of inequality in terms of wages are not more characteristic of the cities but of the regions of Russia.

The results that have been obtained do not make possible an unequivocal answer to the question of whether the inequality of cities is rising or falling. There is neither a general dynamic of the different indicators nor any stable trend for most of them. It can only be pointed out that a mitigation of inequality is more noticeable in wages and salaries, which are more strongly influenced by the policies of the state. But in spheres where decisions are made by business (retail trade and, in part, investment), the inequality is higher, and it persists because business tends to choose cities that have competitive advantages. Therefore, the hypotheses that were to be tested were not confirmed in terms of trend: an increase in inequality among cities was noted only during the initial stage of the period of economic growth in Russia, whereas over the entire period under examination it actually declined, although not steadily. But the other hypothesis concerning the lower level of inequality among the big cities (those with populations of more than 250,000) was confirmed. The positive influence of the agglomeration effect makes their development more similar, especially when the federal cities are not taken into account.

Notes

1. The relatively large regions. For the purposes of regional policy in the European Union are five groups of Nomenclature of Territorial Units for Statistics (NUTS)—from Group 1 (large regions and even fairly small countries) to Group 5 (fairly small territories).

2. The number of cities of 1 million population is indicated for 2013, not counting Moscow and St. Petersburg; the other cities are indicated based on data of the 2010 census.

3. In the calculations, each socioeconomic indicator is weighted in terms of the size of the population settlement of the region.

4. For example, “Cities of Opportunity,” PricewaterhouseCoopers (PwC),

2011; the “Global Power City Index” of the Tokyo Institute (Institute for Urban Strategies at the Mori Memorial Foundation), 2010; the City Development Index, UN-Habitat, 1998–2011; and the Global City Competitiveness Index, Citygroup, EIU, 2011–12; and others.

5. For example, the rating of cities by the journal *Sekret Firmy*, from Kommersant” publishers (2012–13), and others.

6. For example, the ratings of especially large cities by the IRP Group (2011), the ratings of big cities by the Russian Union of Engineers.

7. Data on GRP, the per capita incomes of the population, and unemployment, based on the ILO methodology, are not formulated by Rosstat at the level of municipalities. Indicators for the volume of investments and the operational completion of housing are not stable for the different years. The method for measuring the circulation of retail trade was changed (Rosstat stopped fully counting the volume of trade done by small business, including in the open markets, and it provides more reliable data on the circulation of trade for large and medium-size organizations; this reduced the statistical indicators by a factor of 2.5 to 3). Only the indicator for average wages is more suitable for the assessment.

8. See the analysis of the development of the big cities of Russia in the annual longitudinal study, “The Cities of Russia 2010–2011” [Goroda Rossii 2010–2011] “Social Atlas of the Regions of Russia” [Sotsial’nyi atlas rossiiskikh regionov], from the Independent Institute for Social Policy; available at www.socpol.ru/atlas/overviews/social_sphere/goroda.shtml.

9. The data for all of the cities are limited to 2006, because in the following years Rosstat did not include the indicator of investments in the database.

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