Asymmetry (inequality) of spatial development in Russia

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Abstract. The uneven development of countries and regions is one of the major topics of geography. Since its subject, as defined by N N Baransky, is the difference from place to place. Considering economic activity, socio-economic processes and indicators in the territorial aspect, we are confronted with the inequality of their distribution across the territory. This problem is particularly relevant, because the objective reality, due to the diversity and uniqueness of local conditions, as well as historical, economic, political reasons. Currently, there are various approaches to measuring socio-economic asymmetry. The “centre-periphery” model is remarkably resilient and flexible, and is able to maintain its properties under different socio-economic conditions. Based on statistical analysis (1995-2018), GRP per capita by regions of Russia was examined, as well as correlation coefficients.

1. Introduction
The unevenness of regional development is a spatial form of uneven development of society (economic systems), which is associated with the territorial differentiation of many parameters of both natural (natural-resource, climatic) and socio-economic, legal, political, ethnic nature. Natural territorial differences determine the specialization of countries and regions, create gradients, under the influence of which the movement of capital, labour, goods and services takes place. In essence, this is the economic process. But excessive inter-regional and inter-country differences lead to unfavourable social, economic and political consequences, as well as to conflicts.

Among attempts to explain the uneven economic development of countries and regions, centre-periphery models are widespread. The concept of “centre” captures the place of generation of various technological, social and other innovations, while the “periphery” serves as a medium of their distribution, the course of which depends on contacts with the centre. This division of functions is usually associated with differences in the concentration and intensification of activity, in its species composition, in the managerial hierarchy of territories and in the level of their development in general. Contrasts between the centres and the periphery are the most elementary and at the same time powerful impetus for the emergence and reproduction of territorial inequality.

2. Models
The famous scientist J Friedman believes that uneven economic growth and the process of spatial polarization inevitably generate disproportions between the centre and the periphery. There are several leading factors that determine the stability of the dominance of the centre over the periphery. On the one hand, constant innovative activity creates favourable conditions for its further development just within
the centre, providing the maximum access to information, all sorts of connections and contacts and generating a number of accompanying conditions (service, managerial, market, etc.). On the other hand, the centre constantly pumps out all kinds of resources from the peripheral areas and centres, which also strengthens and reinforces the differences between them, weakening the periphery [2].

The centre-periphery model was further developed in the concept of world systems developed by I Wallerstein in the 1970s [2]. According to this theory, economic development of each country is carried out within the framework of the whole system of world economy, which evolves according to general, universal laws. Modern capitalistic world system that started in 16th century is characterized by stable existence and reproduction of spatial disproportions and hierarchical division of labour between separate elements of this system (countries and regions).

In Russia, research on the asymmetry of the territorial structure and the “shift to the east” as a means of overcoming was among others carried out by scientists of the centrographic school (Mendeleev, Weinberg).

Yu G Saushkin and S Ya Nymmik and other authors note the universal regularity in the fact that increasing contrasts both in the natural world and in the development of productive forces serve as a companion of progressive evolution. Equilibrium and development are essentially in the same tension as rest and motion.

According to Rodoman [6], the stronger the spatial concentration the faster the differences between the centre and the periphery disappear and the levels of their development equalize. However, they are replaced by new types of stimulating inequality. Although the reasons and incentives for concentration change at different stages of society’s development, the concentration itself, as a more stable phenomenon, persists.

3. Results and Discussion
The Russian Federation is one of the most internally heterogeneous countries in the world. Asymmetry in Russia manifests itself in almost everything. Its main reasons are the following:

- differences in natural conditions;
- concentration of the population in the European part and a narrow strip of population in the Asian part (the supporting framework of settlement);
- the gap between the location of natural resources and places of their consumption;
- the dominance of “centre-periphery” territorial relations.

In Soviet times, a centralized approach to the development of the country’s natural resources helped to partially overcome unequal development of individual territories: Siberia, the Far East and the northern regions were becoming more economically developed and industrially advanced.

In today’s Russia, regional development is influenced by a number of determining factors. First, it is the general economic situation in the country. Second, the policy of the centre of the federal centre. Third, global factors and the situation on international markets (primarily raw material markets).

In the last few years, one of the main policies of the state (the federal centre) has been the administrative reform and strengthening of the vertical power structure, which has resulted in the loss of some powers to the regions and an increase in their dependence on the centre. For instance, with the transfer of some regional taxes into the category of federal taxes the financial resources of the regions decreased, while the losses of local budgets are inadequately compensated by the federal budget and national funds.

Global factors with the involvement of Russia in the system of world economic relations started to have an increasing impact on the economy of the country and its regions. It should be reminded that export of fuel and energy resources provides about 70% of currency revenues to the country and more than 40% of federal budget revenues. For the economies of a number of regions, it is of paramount importance.
The most universal and comprehensive indicator for assessing the (socio)-economic development of regions is GRP per capita. To characterize the level of well-being of the region’s population, the indicator of the end use of GRP, which takes into account the inter-regional redistribution of income, goods and services, is more preferable [1].

Consideration of the absolute indicator of GRP gives a very large variation by region. It is explained by: 1) significant differences between the regions both in area and population (the area of the largest region – Yakutia exceeds the area of Adygea by almost 400 times; 2) different level of economic development of the territories (Table 1).

| Year | Min 1995 | 2000 | 2005 | 2010 | 2015 | 2018 |
|------|---------|------|------|------|------|------|
| Max  | 1,940.40| 6,667.9| 17,435.1| 48,239.2| 106,955.7| 112,553.4|
| Difference | 17.75 | 26.5 | 38.6 | 20.3 | 48.7 | 61.8 |

In 2018, the top 10 subjects accounted for 46.3% of the country’s total GRP. Among the leaders were: Nenets Autonomous District (13.0%), Yamalo-Nenets Autonomous District (10.7%), Khanty-Mansi Autonomous District (5%), Sakhalin Oblast (4.5%), Chukotka Autonomous District (3%), Moscow (2.7%), Magadan Oblast (2.2%), Sakha Republic (Yakutia) (2.1%), Tyumen Oblast without districts (1.6%), Komi Republic (1.5%).

In 2018, only 15 regions had GRP higher than the national average. They produce 53.1% of Russia’s total GRP.

In 2018, 10 regions-outsiders produced only 3.7% of the total GRP of the country.

In 2018, the maximum dispersion of GRP per capita was 61.8. Compared to the mid-1990s, it has increased. The degree of dispersion of values of a certain attribute by regions is characterized by the coefficient of variation. The higher the coefficient, the greater the variation in the values of the indicator in the regions. Therefore, based on the coefficient of variation, we can assess the direction of economic development of different territories of the country: in the direction of their convergence on the level of development (if the coefficient of variation decreases) or in the direction of increasing their differences and heterogeneity (if the coefficient of variation increases) (Table 2).

| Year | Coefficient of variation of GRP per capita | Gini index |
|------|------------------------------------------|------------|
| 1995 | 0.492 | 0.387 |
| 2000 | 0.649 | 0.395 |
| 2005 | 0.864 | 0.409 |
| 2010 | 0.769 | 0.421 |
| 2015 | 1.348 | 0.413 |
| 2018 | 1.400 | 0.411 |

Calculations based on official statistics show that the concentration coefficient of various macro-indicators (Gini index) calculated for Russian regions from 1995 to 2018 systematically increased, confirming the growing differentiation of economic development of regions.

The prospects for equalizing the levels of economic (as well as social) development of Russia’s regions are unclear. On the one hand, it is possible if the growth rate of lagging regions exceeds that of leading regions. However, this option is unlikely to be realized in the realities of modern Russia. Funds tend to go to those regions and branches where returns, profits are higher. Even in the European Union (EU), where the practice of regional policy is well developed and funds are tried to be directed to backward and depressed regions, the most attractive in investment terms central leading regions grow faster. In the EU, special funds are allocated primarily to stimulate economic activity rather than to “eat it up” (i.e. to consume). On the other hand, “equalization” can be achieved by strengthening the redistributive policy of the state [3].
The essence of the problem of the convergence of regions by level of well-being is to find a compromise between the growth of regional economic efficiency (growth of GRP) and the redistribution of GRP between richer and poorer regions.

Currently, the asymmetry in the development of regions and the imperfection of the redistributive system are the reason for the fact that even after the procedure of fiscal equalization the per capita fiscal capacity of Russian regions differs by 3-4 times.

It should be noted that inequality in the socio-economic development of Russia’s regions is on a much greater than in other (developed) countries. For example, the difference in GRP per capita between different states in the United States rarely exceeds 25%. The gap between the income of the richest and the poorest in developed countries is 3-4 times smaller than in Russia.

Over the past 20 years, the federal authorities have shown us a completely new way of equalizing the socio-economic development of the subjects, that is, their merger. In 2003, the Federal Assembly approved a project to form a new federal subject – the Perm Krai. Later, there was the merger of the Taimyr and Evenk Autonomous Districts and Krasnoyarsk Krai; Kamchatka Region and Koryak Autonomous District – Kamchatka Krai; Irkutsk Region and Ust-Orda Buryat Autonomous District; Chita Oblast and Aginsk Buryat Autonomous District – Zabaikalsky Krai. As well as the incorporation of the Republic of Buryatia into the Far Eastern Federal District. Thus, it turns out that after the unification of the above subjects of the Federation, the asymmetry in socio-economic indicators of Russia as a whole will decrease [4].

According to V S Varlamov and A I Trayvish [5], a radical solution to the problems of inter-regional asymmetry in Russia is possible only by increasing the economic and, respectively, financial and tax potential of the regions and the country as a whole, so that they could solve most of the regions’ problems by their own efforts. The federal budget with the help of federal target programs would increase the absolute amount of assistance to those regions, whose own potential is not yet sufficient for independent development.

The world experience shows that the asymmetry of socio-economic development, inherent in different countries and regions, is quite difficult to equalize. For this purpose, budgetary and other mechanisms are used, and a well-thought-out regional policy is carried out. The considered approaches to asymmetry can be summarized as follows. Asymmetric development, the main feature of which is an increase in the dispersion of indicators from their average value, is not a priori negative. It is important that the scale of asymmetry should not exceed certain limits. Differences in economic and geographical conditions, uneven distribution of material wealth and population cause heterogeneity of the economic space, and the countries and regions whose economies are the most competitive are the first to develop. Therefore, the asymmetric type of development is quite natural.

4. Conclusion
In Russia, the dominant trend in territorial development during the transition period was an increase in asymmetry between regions. Unlike in many other countries, it occurred against the background of an unprecedented economic recession. At the same time, Russia was integrating into the world economy and global factors were increasing their influence on the country’s economy, which manifested, in particular, in the consolidation of the raw materials component in the country’s specialization. Asymmetric development as a whole had a negative impact on the economy of the country and its regions. The amplitudes of fluctuations of various social and economic indicators (for example, GRP and income per capita) by regions reached excessively high values, which are practically not observed in developed countries.

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