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DEGREE OF SOCIAL AND ECONOMIC DIFFERENTIATION OF REGIONS OF RUSSIA

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Abstract

Digitalization of the economy, increasing the efficiency of management of socio-economic systems, in turn, makes them more demanding. This is especially true for the level of differentiation of the main macroeconomic characteristics of the country's regions, since only in the case of their unification can a single digital space of Russia be formed. Using econometric methods, the article assesses the degree of differentiation of the average per capita GRP of the Russian regions and compares the coefficient of variation of this indicator with a similar indicator characteristic of the largest and most developed countries. As a result, it was found that the level of interregional differentiation of per capita GRP in Russia significantly exceeds similar indicators in all countries included in the study - Canada, USA, China, Brazil, Australia. It should be noted that interregional differentiation of the level of socio-economic development is characteristic of all large countries, which is due to the territorial variation of macroeconomic and natural-climatic characteristics. However, in Russia this process is becoming disastrous, which is due to the fact that the country's economy is still oriented towards the extensive exploitation of natural resources. Thus, the digitalization of the economy should become an important tool to reduce the level of socio-economic differentiation of the regions of the Russian Federation, since it involves the creation of a large number of highly paid jobs and the predominant use of intellectual capital.

Keywords: Digitalization of the economy, GRP, socio-economic differentiation, region, developed countries

1. Introduction

The history of mankind includes a series of heyday and degradation of civilizations, countries, as well as their individual regions and cities. This fully applies to Russia. There was a time when Kiev and Novgorod flourished, then the turn of Moscow came. For two centuries St. Petersburg shone, losing in the XX century in all socio-economic parameters the leading position of Moscow. In the 21st century, the baton of the championship was seized by the oil and gas regions of Siberia, while Moscow maintained a stable position in the leading group.

In order to effectively manage social processes in the regions of a large country, it is necessary to clearly understand their laws, not only state the facts, but also predict trends and level the most negative and flagrant imbalances. In this regard, the aim of the study was to assess the degree of differentiation of Russian regions in terms of GRP per capita, as well as a comparison of the identified trends with world trends. Thus, the object of the study was the socio-economic characteristics of the regions of the Russian Federation.

2. Materials and methods

In this study, the main methods of economic research are widely used: econometric analysis, analysis of variance, retrospective analysis of large amounts of statistical data.

The information base of the study was the statistical reporting of the Federal State Statistics Service (Rosstat), periodicals and the Internet. As a criterion for assessing the situation, the coefficient of variation of per capita GRP in the regions of the Russian Federation and countries compared with it was used.

3. Results

As a starting point of the analysis, we consider the differentiation of countries according to Gross Domestic Product (GDP) per capita, since it is precisely its value that determines the potential for human well-being. Even with the most "fair" system of distribution of material wealth, people cannot get rid of poverty in a society that does not create enough GDP (Table 1).

Table 1. Top 10 countries by GDP per capita in 2019 (Rating of the countries of the world by GDP per capita in 2019, 2020)

At face value, USD		At purchasing power parity (PPP), USD	
Country	GDP	Country	GDP (PPP)
1. Luxembourg	113196	1.Qatar	132886
2. Switzerland	83717	2. Macau	114363
3. Macau	81152	3. Luxembourg	108951
4. Norway	77975	4. Singapore	103181
5. Ireland	77771	5. Ireland	83399
6. Qatar	69688	6. Brunei	80384
7. Iceland	67037	7. Norway	76684
8. USA	65112	8. UAE	69435
9. Singapore	63987	9. Kuwait	66387
10. Denmark	59795	10. Switzerland	66196

If we evaluate the situation at purchasing power parity, then even the United States is not included in the top ten countries, falling to twelfth place (Table 2). As for the rating leaders, half of them are oil-producing countries with a small population. Naturally, for every resident, in such a situation, there is a large volume of hydrocarbon sales, which determines the result. For Luxembourg and Ireland, the main source of wealth is the status of international offshore zones. In part, this also applies to Switzerland, which, moreover, is one of the leaders in the innovation process. So, it was the Swiss unique pipe layer that laid the Nord Stream-2 gas pipeline.

As for Singapore, the basis of its prosperity is its unique geographical position at the intersection of the main trade routes and financial flows of Asia. At the same time, innovative development also plays a significant role. Macau is a gaming zone that cannot serve as a guide for the economy of a large country. Thus, in the countries of the top ten there are separate elements suitable for borrowing, but the structure of the economy as a whole is unique and inimitable for each of them and it certainly cannot be reproduced in our conditions.

In this regard, it is advisable to turn to an analysis of the situation in the largest countries comparable with Russia, at least for certain objective parameters. As analogues for comparison, the choice of the USA, Canada, China, Brazil and Australia is appropriate. All these countries have an area of only 1.7 - 2.2 less than the Russian one, while in terms of population the difference is more significant, both in one direction and the other. However, significant differences in climatic potential, to a large extent, offset the difference in population (Table 2). So, in Canada, arable land per capita accounts for only 1.64 times more than in Russia. Approximately the same ratio for most other natural resources (Ozherelyev & Ozherelyeva, 2018).

Table 2. Objective parameters of the largest countries in the world

Country	Parameters						
	Area, mln. sq.km	Population, mln.people	Density of population, people / sq.km	GDP (PPP), dollars / person	Position in the rating by GDP	Index variations,%	Index variations without capital,%
1.USA	9,519	327	34,4	62606	12	36,5	18,7
2. Australia	7,682	26	3,4	52373	20	19,5	-
3. Canada	9,97	36	3,6	49651	24	22,3	-
4. Russia	17,08	147	8,6	29267	53	152,6	52*
4a. RF districts	-	-	-	-	-	43,5	-
5. China	9,598	1391	144,9	18110	77	46	-
6. Brazil	8,547	209	24,5	16154	85	57,3	-

* - with the exception of five "mining" autonomous districts (Nenets, Yamalo-Nenets, Khanty-Mansiysk, Chukotka) and Sakhalin

In Australia, most of the country is occupied by deserts and semi-deserts, which, to a large extent, inhibits the settlement of this continent and contributes to the differentiation of types of economic activity by region.

4. Discussion

The results shown in Tables 1 and 2 are the information base for comparative analysis. The significantly higher population density in the United States, Brazil, and China compared to Russia is partly due to the advantage in potential productivity of farmland. Indeed, if we take the productivity of a hectare of arable land in Russia as 100%, then in the USA this indicator increases to 187%, in India to 363%, in Brazil to 449%, and in Indonesia to 523% (Loiko, 2000). For several millennia of agricultural culture in China, as a result of the mass introduction of composts in the bend of the Yellow River, artificial highly productive soils have developed. A similar situation throughout the Great Plain of China. Consequently, the average fertility of China's arable land should be somewhere between Indonesia and the United States. That is, the productivity of the Chinese lands is approximately 3.5 times higher than that of the Russian ones. This substantially eliminates the initial differences in population density.

As for such large countries as India, Indonesia, Nigeria, Pakistan and Mexico, they are still at a lower stage of economic development, and, in addition, they lack a territory comparable to Russia and a similar contrast in the natural and climatic conditions.

The differentiation of the territories of a large country in terms of per capita GDP is an inevitable fact. The question is the degree of differentiation. So, while in the USA the difference between the most financially secure territory (the metropolitan area of Columbia) and the most depressed state of Mississippi is 5.28 times, in Brazil, the metropolitan area is 6.33 times higher than the most backward state of Maranhão, in China, the city of Tianjin is ahead of Gansu 4.82 times, in Russia the Nenets Autonomous District is ahead of the most problematic territory of the country - the Republic of Ingushetia - 54.78 times. As for Canada and Australia, the maximum difference between regions in these countries is 1.85 and 1.62 times, respectively. Since the subjects of the federation in these countries are disproportionately large in comparison with most Russian regions, it is more correct to compare them with the degree of differentiation of the indicator in question in the federal districts of the Russian Federation. But even with this approach, the difference in Russia between the Ural and North Caucasian Federal Districts exceeds 4.54 times (Table 2), which is significantly larger than in Canada and Australia.

In all compared countries, metropolitan districts either dominate in terms of per capita GDP (USA, Brazil), or occupy leading positions in the inter-regional ranking (Australia, China, Russia). In Australia and Russia, sparsely populated "mining" territories hold the lead, and in China, one of the largest coastal industrial and logistics agglomerations (Tianjin). At the same time, the capital of China is 4.14 times ahead of the most backward region of the country, and Moscow is 11 times ahead of Ingushetia. If we accept that the maximum degree of dominance of the capital over the most depressed region of a large country by 5-6 times is an objective regularity, then the situation in Russia seems abnormal and dangerous for its unity and stable development.

The situation is compounded by the fact that in the USA the population of the federal district (Columbia) does not exceed 670 thousand people, and in Brazil - 2.5 million people, then the Russian

capital (as part of the metropolitan area) unites more than 15.5 million people, which is approaching 11% of the country's population. Moreover, Moscow literally "pulls" the population out of depressed territories, accelerating their degradation.

To ensure a more correct comparison, it is advisable to consider not only extremes, but also to identify the trend as a whole. To this end, the calculation of the coefficient of variation for the distribution of per capita GDP across all regions was performed for all compared countries (Table 2). As a result, it was found that when the indicator varies from 19.5% (Australia) to 57.3% (Brazil), in Russia the coefficient of variation increases to 152.6%. If we exclude from consideration four sparsely populated "extractive" autonomous districts and Sakhalin, the indicator will approach the average for the group of countries under consideration (52%). That is, in fact, the majority of the constituent entities of the Russian Federation is predetermined by the role of subsidized regions, since only 17 of them overcome the average value of the indicator for the country. Among them, 12 exploit natural resources, Moscow performs the metropolitan function, St. Petersburg, the Leningrad and Moscow regions are the most important logistics hubs.

And now about the patterns of territorial localization of leaders and outsiders within the borders of the countries in question. In China and Brazil, economies are oriented towards the export of manufactured goods, and therefore the coastal regions are the most successful. In China, these are the provinces of Guangdong, Fujian, Zhejiang, Jiangsu, Shandong, and the metropolitan areas of Tianjin, Shanghai, and Beijing. In Brazil, the leaders are the states of Sao Paulo, Rio de Janeiro, Parana, Santa Catarina, Rio Grande do Sul. Moreover, the regions of the equatorial zone of Brazil are clearly lagging behind in development. As for the transfer of the capital deep into the country in 1960, the positive impact of this event on the surrounding territories has not yet been fully felt. Thus, the states of Goias and Minas Gerais bordering the capital district of Brasilia are inferior in financial prosperity to the sparsely populated states of Mato Grosso and Mato Grosso do Sul (population densities of 3.8 and 7.6 people / sq.km, respectively). Apparently, this is due to the fact that, as in Russia, in Brazil, the extensive exploitation of natural resources remains more profitable.

It should be noted that, as in Brazil, in Russia and in China, the surrounding capital cities are significantly inferior to it in terms of financial well-being. So, in China, the Hebei province surrounding the agglomerations of Beijing and Tianjin is 2.6 times lower than the capital by GDP per capita. The coastal position of Hebei Province somewhat offset the difference, which otherwise could have been significantly higher. Similarly, the Tver Region closest to Moscow is inferior to the capital in financial prosperity by 4.25 times. The states of Virginia and Maryland surrounding the city of Washington are inferior to the US capital by the level of financial prosperity by about 3 times. That is, according to this indicator (at the level of the immediate environment of the capital), we observe the highest degree of differentiation among the countries under consideration.

In the United States, the most successful states in the north of the east coast of the country (New York, Massachusetts, Delaware, New Jersey). This is the original "Industrial North" of the country, which is now more successful in financial operations and logistics, although there are still many innovative firms and enterprises of the military-industrial complex (shipbuilding) in this region. On the west coast, California with its Silicon Valley innovations and Washington with its powerful aerospace industry are the most

prosperous. Alaska, North Dakota and Wyoming ensure their well-being through the exploitation of natural resources. Traditionally, the southern and midwestern, mainly agrarian states lag behind.

In Canada, the financial advantage of the country's main oil producing territory, the province of Alberta, is noticeable, however, as in the United States, there is no such glaring difference compared to other regions as in Russia. This is due to the fact that in North America (as well as in Australia), the structure of the economy is more balanced by centuries-old market relations. In addition, an effective regulator of the situation is population migration. For North America and Australia, it is also important because emigration is still an important source of population growth. Migrants seek to settle in more prosperous regions, automatically leveling the situation.

The specific laws of the "consumer society", which has been formed in Europe over the past 70-80 years and has become entrenched in Russia over the past 30 years, explain the economic motivation for the ongoing "densification" of the population in the most densely populated regions and countries. In particular, this is due to the fact that with a more dense population of the territory, the unit costs for the construction and maintenance of infrastructure are reduced (per person) (Ozherelyev et al., 2011a). So, suburban trains really pay off only in the suburbs of Moscow, and in most other regions they are forced to subsidize by the local administration.

In addition, in densely populated territories a more perfect logistics of goods flows is possible, which significantly reduces transaction costs and makes the business more profitable (Dotsenko & Vdovina, 2014; Ozherelyev & Ozherelyeva, 2013; Ozherelva, 2007). That is why regions with denser populations are attractive to investors. This motivated the decision to host, for example, car dealerships in Moscow, and not in Bryansk or Pskov (The one who learns to work efficiently will survive, 2020). At the same time, a reduction in transaction costs makes it possible to raise the level of labor remuneration in a more densely populated region, thereby additionally "pumping out" labor from less densely populated regions.

It should be borne in mind that in addition to labor migration, there are other types of it, in particular, many people change their place of residence in order to develop their business. For Russia, it is this type of emigration (along with the "brain drain") that is characterized by the greatest negative consequences (Ozherelyev et al., 2018). After all, the exodus from the country of the most active, educated and wealthy part of the population dooms it to prolonged stagnation and irreversible degradation (Ozherelyev et al., 2011b).

We believe that the stimulation of financial, economic and intellectual migration by recipient countries is also an important tool in the policy of containment in relation to the donor country. Thus, the European Union and the United States maintain their competitiveness and receive huge intellectual rents, which are the most important component of the policy of scientific and technological imperialism.

5. Conclusion

Particularly disastrous are these trends in the developing digital economy, in which, according to Klaus Schwab, the main production factor will still be not capital, but human resources (Schwab, 2016). The preservation of existing trends in the socio-economic development of Russia, increasing inter-regional imbalance will inevitably lead to national disaster.

Foreign researchers confirm the idea of strengthening the differentiation of society and pay attention to information (digital) inequality in society, which manifests itself in the form of restrictions on the access of citizens, social groups to information and communication technologies, information resources, and education. Due to this and other factors, digital society is not immune from degradation, the transition to a state of decline (Castells & Shkaratana, 2000).

According to some scientists, the knowledge society that is being formed at present leads to the division of mankind into two unequal parts: the first, the smaller, having access to IT technologies and, with their help, to world information resources; and the second, large, including vast groups of people and even countries deprived of such an opportunity (Toffler, 2009). In the Okinawa Charter, this phenomenon is called the digital divide, which appears despite the development of technologies that increase the availability of information. In this context, it is possible to qualify the digital economy as a form of exploitation of the world by the "golden billion" by redistributing the world value added in favor of the most developed countries. All this contradicts the strategic goal of implementing the concept of a social state, declared in the Constitution of the Russian Federation.

Thus, the main task of government bodies is to ensure the harmonious development of the country within the framework of the implementation of this constitutional concept, by relying on the knowledge economy and digital tools.

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