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## ECONOMY

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### UNEVENNESS OF REGIONAL DEVELOPMENT AND ECONOMIC SECURITY OF THE RUSSIAN FEDERATION AND SIBERIAN REGION

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#### Abstract

The article refers to the problem of growing unevenness of regional development as an impartial trait of the modern growing economy, and its impact on the economic security. Some changes in understanding of the economic security are identified, namely, shifting of focus on achievement of the maximum self-sufficiency of a region in the light of a shift in the security enhancement priorities. Objective interrelation of individual countries and regions as elements of the global economy is noted, which does not allow for controlling of the development parameters of a single region separately from the global economic system, orienting on complete economic autonomy. The attention is drawn to the importance and specifics of the energy supply security as an element of economic security. The results of empirical analysis of the energy sector of a raw materials-oriented region are used as the basis for justification of the idea of economic inexpediency and lack of prospects in trying to enhance the economic security through aspiration for energy autonomy.

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**Keywords:** economic security, interregional differentiation, energy autonomy, empirical estimates

**Introduction**

One of the economic phenomena rising active discussion in the scientific community is uneven development of territories. Usually a country's form of government presumes division of the territory into separate segments. Principles of territorial zoning are mostly based on the historical events, economic specialization of regions, natural and human resources, climate and other factors. A significant role in development of the territorial division structure is assigned to the political organization of a country, the established social structure, ethnical groups, religious situation and other factors.

The economic science has gone a long way in fulfilling its cognitive function to study the territorial zoning problems. Much work has been done towards accumulation of vast knowledge, generalization of knowledge systems that have encompassed the results of research of many Russian and foreign scientists. Each country has developed its own administrative grid system. However, the debate on the issue has not settled down, and amidst the global economic recession only became more relevant. What number can be considered optimal, what are the zoning principles and conditions? These and other questions have not received a comprehensive and substantiated response yet. Based on the results of empirical analysis, modern researchers note that interregional differentiation in Russia goes up when the economic activity concentration increases [1].

Substantial size of the country, numerous national and economic differences, climatic diversity determine an objective base for differences in the pace and structure of socioeconomic development. After liquidation of administrative command economic system in Russia the shortcomings in the existing territorial division into regions emerged. Contribution of this factor to slowing down of complex development of the center and regions, efficient use of resources, and economic transformation became real [2].

Differentiation in regions' economic development levels is an integral trait of the transition economy and a result of impact from a number of factors. Identification of the main driving forces and substantiation of their impact on the economy becomes a serious research area. From the cognitive science perspective an important research goal is determination of the parameters of sustainable growth and security of economic agents in the light of new economic and political risks. This study aspect has international character, and in the existing economic theories is based on dialectic approach and

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use of empirical and theoretical cognition methods. There are certain differences in implementation of the praxeological function of science and presentation of the knowledge gained by different scientific schools. This situation does not contradict intersubjectivity of science, but rather reflects the applied nature of the results and researcher's attitude. "Economic security" notion in today's mainstream research is given as an economic system state characterized by sustainable development and ability to withstand the impact factors (mainly negative towards the development goals).

The practical aspect of economic security can be viewed as a country population's assessment of its economic situation under the current economic conditions using a number of vital indexes [3]. These researches show steady decline in the economic security of the US citizens over the past 25 years, and acceleration of this process in the past several years. The global financial crisis has amplified similar trends in just about all countries.

**1. Unevenness as an Objective Development Property**

Russia, being a part of the global economic system, has suffered the impact of the global economic crisis in full. Its consequences appear in different ways; the level of impact on different areas of the economy and different regions also varies. Regions adapt to the new conditions, each seeking for its own stabilization opportunity. Yet surmounting the crisis is hindered by old and new problems.

The majority of Russian regions, especially in the European part of the country, are administrative units without a distinct specialization, sufficient resource base, which does not promote creation of the conditions required for complex development and diversification of the economy. At the same time, in the western part of Russia there are cities and regions (Moscow, Saint Petersburg, Moscow region, etc.) capable of showing high rates of economic growth. Interregional differentiation is an objective property of Russian economy, where values of individual indexes (gross domestic product, average salary, production volume etc.) can differ by a substantial margin.

Significant regional differences are observed not only between federal districts, but also inside districts between individual regions. Differences in regional socioeconomic development indexes were always there, even during relatively calm periods of Russian history. This is confirmed by numerous Russian scientists based on the results of analysis of economic and social parameters of regional administrative-territorial units in Russia [2, 4, 5]. There is a clear pattern of significant gaps in indexes values and predominance of

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regions with low values, which cannot be explained just by natural, territorial and climatic conditions.

**2. Research Methodology**

Comparative analysis of the main socioeconomic indexes gives a consolidated description of the economic situation and identifies the emerging trends. There is a plenty of the indexes (absolute, relative) (number of economically active population, consumer spendings per capita, capital assets involved in the economy, gross regional product (hereinafter – GRP), balanced results of companies' operations, amount of investments in fixed assets, amount of shipped own-production goods by different areas of the economy, and others).

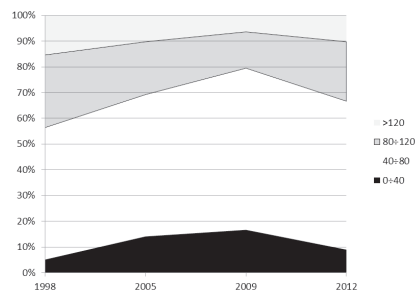
Our research is based on the dialectic approach to the cognitive process, where we have used evolutionary, logical, analytical and statistical methods, and economy monitoring. The knowledge base for the research was formed by the researches results, official data from the Russian Federal State Statistics Service for 1998-2013 monitoring period, which spanned the main milestones in Russia's development, in particular – breakup of the Soviet Union and change-over of the regime, global economic crises.

The Russian Federation subjects' interregional comparison method using GRP allows for development of an empirical basis for studying of the regional development problems. This index is somewhat limited, as its value cannot be used to gain information on the structure of growth sources, production potential and other factors. Generalization and grouping of regions by GRP per capita level will always be subjective and will not disclose the entire depth of economic processes. One group might include regions with different production specialization, output, demographic and other conditions. However, such estimates are not encumbered by excessive mathematic calculations, can be easily summarized and allow to form indicative alerts for administration on the markers' level. Monitoring of indexes is important for evaluation of security of regions and the country. Determination of the socioeconomic development unevenness limits, which can be followed by an uncontrollable crisis is a special interest from the scientific and practical perspectives carriers.

The security level of Russian regions was under pressure even before the global economic crisis due to radical transformation of the country's political and economic system. Figure 1 shows the results of the regions' dynamic structure studies using a relative index – GRP per capita as compared to the average Russian gross domestic product (hereinafter – GDP) level per capita. Since 1998

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over 75% of Russian regions were in the zone below 100% of average Russian level. The 40-80% area covered over 55% of all regions.



**Figure 1. Dynamics of changes in the number of regions by gross region product level per capita relative to average Russian level (source: calculated by the authors from the data of the Russian Federal State Statistics Service)**

On the one hand, these indexes reflect apparent problems in the Russian economy, development of market-based economic conditions, on the other – demonstrate segregation of the regions. Fledging period of market type Russian economy (until 2007-2008) is characterized by a growing number of regions with ailing economy, but relatively stable growth. A specific feature of that period was the fact that the number of regions with 40-60% of average Russian GRP level per capita has increased by 25% since 1998 and reached 50%. This can be interpreted as increase in the number of economically weak regions. The number of regions with gross regional product per capita level significantly higher (by factor of 2 and more) than average Russian level has decreased. Number of the regions where GRP per capita level differs from average Russian value insignificantly has not changed (about 20-25%).

By 2009 the zone with 40 to 80% of average Russian GDP per capita included about 65% of the regions with simultaneous decrease in the number of regions with high GRP per capita indexes. Their share has dropped from 55 to 20%, while the number of “poor” (underdeveloped) regions has increased. In our opinion, this is mainly explained by delayed impact of the global crisis and its penetration into deeper economic layers. Interesting to note that in

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2012 we observe the opposite trend – number of the regions with average indexes experienced insignificant decrease, while share of the regions exceeding average Russian GRP increased from 20 to 35% while the number of underdeveloped regions decreased. Analysis of such phenomenon is a separate scientific task that requires detailed review of the regions' economic structure, demographic issues, multifactor situation analysis.

High GRP per capita level exceeding Russia's average value is registered in the Central Federal district (Moscow, Moscow region), North-Western (Saint Petersburg, Leningrad region), Ural, Far Eastern Federal districts. Raw materials oriented regions with high industrial export-oriented potential (Tyumen region, Tatarstan, Komi Republic) also demonstrate high value of this index. Economically weak regions of the Southern Federal circuit (Republics of Kalmykia, Adygea), North-Caucasian Federal circuit (Stavropol Territory, Ingushetia, Kabardino-Balkar Republic etc.) fall behind the average Russian GDP per capita level (22-44%).

Index methods widely applied in evaluation of dynamics of different processes are also used in economic security monitoring. The growing number of studies dedicated to the economic security and development unevenness problems confirm the acknowledgement of objectivity of interrelation of these economic processes and need for pooling of efforts of scientists from all countries. Complex studies of the security problems are conducted in USA, where one of the aspects is analysis of regions' (states') differentiation by ESI (Economic Security Index). This index is used by the researches as one of the economic situation indexes that show its irregularity from the security perspective. Scientists name key demographic and economic properties of states, such as population differentiation by the income level, education, unemployment percentage and others, as the main reasons of unevenness [6].

Unevenness of the regions' development in its own is not an exclusive economic trait that requires maximum smoothing, but under the systematic global economic crisis conditions this trait is related to instability of development, which in turn defines the limits beyond which destruction of the economic structure becomes possible. This relation is stable and objective, substantiating the need for its scientific study as a property of modern economic systems. Therefore the search for a possibility to manage development and unevenness parameters turns into a practical research objective.

**2.1. Assessment of a Region's Ability to Reach Self-Sustainability**

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The economic turbulence period in the world is continuing, and not all of the systemic crisis consequences are apparent yet. Economic and financial risks are accompanied by political risks that affect the state policy priorities. Development of global economic cooperation, able to mutually benefit everybody through synergy effect, is slowed down with simultaneous prioritization of the political aspects. These priorities, in turn, are based on political security aspects, namely preservation of the territorial integrity, political system, strengthening of administrative systems. Therefore the national security is increasingly seen as comprehensive enhancement of self-sustainability of a country (region) in all socioeconomic areas.

In many researchers' opinion, which we can agree with, search for independence of a separate economic entity, integrated in the global system, is a dead end from the theoretical and practical perspectives. While demonstrating historically and economically differentiated development, regions often have no bases for liquidation of shortcomings in individual economy areas. In Russia, for example, in a region specializing in raw materials production and oriented on export of natural energy resources it will be extremely difficult and expensive to develop a comprehensive agronomic sector capable of fully meeting the region's food demands. The same problems are common for regions with difficult climatic conditions. Achievement of a region's self-sustainability in absolutely all life sustaining areas is an unachievable objective most of the time. A region might not have the initial conditions for complete sustainability, e.g. in animal breeding industry, which sets it as a permanent import component of the region's foreign economy balance. When selecting a priority goal for achievement of a region's autonomy, the identification of all difficulties and their formalization itself requires significant material and labor resources.

#### **3. Calculation**

Let's run a mental experiment to evaluate a region's ability to reach self-sustainability, using one of the most important life sustaining areas as a research subject – energy supply sector. If contents of this segment, viewed as a part of the whole, will not be recognized by the researchers as "sufficient" from the sufficiency perspective for the current conditions, then, according to the dialectic approach, we cannot judge on sufficiency of the entire object.

In spite of the continuing global economic crisis, the power sector remains indispensable in each country; the demand for energy resources does not decline. According to the International Energy Agency (IEA) forecasts, the global demand for coal will experience

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a 17% increase by 2035. The fastest growing energy consumer in the world until 2025 will be China, but then India will take the lead [7]. Economic reforms, political changes, shift in technological schemes – these are all subjective conditions for changes in the energy policy. Energy industry in Russia is also undergoing reforms, bringing its tweaks in the economy dynamics and sustainability.

Russia's economy and its place in the world are to a great extent dependent on export potential and available energy resources. Russia's enormous natural fuel-energy potential is the base of economic development. Up to 30% of the world's fuel and energy resources are concentrated in the country with less than 3% of the global population. Because of this Russia, as the energy empire and one of the biggest importers of energy resources, plays a significant part in the global economic and political balance. The economic and national security of the country is strongly dependent on efficiency of the fuel and energy sector.

Russia's orientation on raw materials became its distinctive trait, a kind of economic stamp, while income from gas and oil became the main source for replenishment of the federal budget. During the first quarter of 2014 their share in the total income amounted to 51.9%, which is 3.5% higher than the respective index in 2013 (48.4%). The share of processing industry in Russian export during 1995-2007 has reduced from 27% to 17%, and share of energy went from 43% up to 64%, respectively [8]. While being the third biggest energy producer in the world – 1182 million TOE (China – 2085, USA – 1686), Russia really lags behind in energy consumption per capita (reference: (T)OE – (tons of) oil equivalent – unit of measurement of reference fuel used for calculation of efficiency of different fuel types in summarized accounting, i.e. oil and its derivatives, natural and byproduct during distillation of shale and bituminous coal, gas, peat). In 2009 consumption in Russia amounted to 4561 kg OE per capita, which is comparable to Sweden and almost 40% lower than USA and Canada, located in the same latitudes [9]. On a first approximation, such ratios reflect low level of energy consumption by the population of Russia as a result of underdevelopment of public consumption. If you convert these values to a comparable base taking into account energy efficiency, the per capita consumption requires further adjustment. At the same time, the per capita gross domestic product in Russia is more than 4 time lower than in USA. It is difficult to forecast proportions of further development, studies of some researchers state that economic growth in USA will be slowing down, while economies of the developing countries (China, India and others) will demonstrate high growth rates [10]. But the overall energy production and



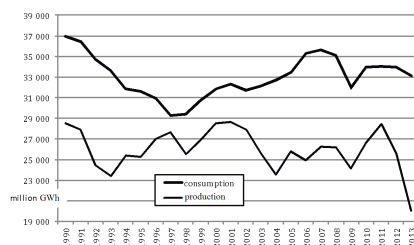
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consumption structure will not change dramatically. Energy was and will continue driving the economic growth.

Creation of Russian energy industry began in 1920 from development of the State Committee for Electrification of Russia Plan (GOELRO Plan). Even today this plan is recognized by Russian and foreign specialists as large-scale, justified and timely solution not only for the energy industry objectives, but for ascension of backward and destroyed Russian economy in general.

The specific features of the Plan included accounting for the huge territory of Russia, numerous time zones, climate zones, historic specialization of territories and fuel sources. Energy supply was built using "pool" principle – the generated electricity was distributed to the regions where it was required. Power facilities were planned in consideration of large industrial consumers location and availability of local fuel. In fact, it was the first scientifically justified scheme of territorial zoning of Russia with definition of further industrial and social growth.

Regions specialized in raw materials and possessing solid industrial potential, which include Kemerovo region are a clear illustration of energy supply problems resolution without additional own generation. Figure 2 shows that electricity demand is covered by the region using its own generating facilities and power flows from regions where it can be currently produced for a lower price. Please note that the electricity consumption diagram reflects (without consideration of temperature fluctuations) the general economic development dynamics – growth or fall of the industrial production.



**Figure 2 - Electricity consumption and production dynamics in Kemerovo region (source: prepared by the authors using data from the Russian Federal State Statistics Service, OJSC "System Operator of the Unified Power System")**

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Kemerovo region's energy system is one of the biggest in the country and the third biggest in Siberian Federal district (after Irkutsk and Krasnoyarsk). The region is making great efforts to enhance its energy self-sufficiency. Two new generating units were commissioned in 2014 after reconstruction: #4 at Belovskaya GRES (town of Belovo), #5 at Tom-Usinskaya GRES (town of Myski). Reconstruction of these generating units required sufficient investments from the owner – 13 billion rubles over two years, which amounts to 10% of the Kemerovo region's budget. Commissioning of these generating units with increased output and taking into consideration the power market situation allows for reduction of the amount of electricity purchased by the region by 6-10%. Renovation of capital assets with high wear of the available power generating equipment (on average 55-65%) is a positive trend enhancing the energy self-sufficiency level.

#### **4. Discussion and Results**

The assessments presented above confirm complexity and significant capital intensity of energy sector development in a separate region. Each region has its own electricity production and consumption specifics that cannot be comprehensively and substantially included in the existing methods framework.

The complexity of the power supply self-sufficiency improvement process in individual regions will be increased in the nearest decades due to a growing demand for energy and natural resources, especially in new and growing economies. Experts state that energy efficiency improvement will become a key sustainable development component and an important element of the energy self-sufficiency enhancement [11].

Achievement of a noticeable self-sufficiency level in energy sector is doubtful with active utilization of internal reserves and energy efficiency improvement, which is a commonly recognized and objective focus area. Today the gross domestic product energy intensity in Russia remains among the highest in developed countries. GDP electric intensity in Russia is 1.6 higher than in USA, more than 2.4 times higher than in Italy, Germany, and Great Britain. Praxeological approach to the national (regional) economic security concept development must include possibility of controlling the "equity-asset ratio" of a number of economic, energy, financial and other indexes depending on the real situation in the country and in the world, socioeconomic development goals and priorities.

Due to forecasted growth of demand for energy resources the situation in separate regions may become more complicated,

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since it will be impossible to reduce dependence on energy import. Some scientists believe that growing demand in the context of limited resources can lead to an increase in prices and slowing down of the global economic growth [12]. Such possibility increases doubts in consistency of the model of a region's external dependence reduction, when the outrunning growth of energy cost will limit the region's ability to develop self-sufficient energy supplies.

**Conclusions**

Unevenness of economic development of the regions as parts of the nation is a stable and significant socioeconomic development property of the country [13, 14]. Changes in the society, structure of technological processes, economic system stimulate the development of centripetal trends. For a developing economy, including the Russian one, the process of economic activity concentration in large metropolitan areas and amplification of unevenness can be considered factors significantly affecting the level of the country's national and economic security.

Turmoils in the global economy, as an objective process, create new risks and threats for countries, leading to shifts in models and adjustments of economic development. Global political situation escalations, global trade transformations create new notions of national security, and ideas of maximum self-sufficiency of regions and reduction of dependence on import are often persistently offered as the main priorities.

The analysis performed using the energy sector as an example shows that the choice between self-sufficiency of a country (region) and optimization of external relations deals not only with material and time resources, but with political aspects of domestic and foreign policy as well [15]. The dualistic approach to development of the national and economic security concept is the main point of theoretical and practical controversy in the process of scientific studies of security. Attempts of unilateral resolution of economic (including energy) security problems by achievement of energy self-sufficiency in each country (region) is economically futile, organizationally difficult, financially intensive effort which in the political sense can even bring up separatist sentiments.

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