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Abstract. The proposed article examines the process of transformation of social and economic relations, since without leveling the socio-economic development of the regions, it is practically impossible for a stable growth of the country's economy as a whole. The huge scale of the territory, the variety of natural and climatic conditions and other factors necessitate the development and implementation of new approaches to the effective use of regional factors and the study of interregional relations in Russia. The novelty of the research lies in the study of the socio-economic characteristics of the situation in the regions of the country and the formation of regional markets. The relevance of this study reflects a problematic nature due to the presence in the regional economy of Russia of various unresolved issues related to the specifics of the socio-economic development of the country's regions, the formation of regional factors and ensuring the effective development of a single economic space open to international economic cooperation.

Keywords: region, interregional ties, transformation of relations, system of interconnections.

The management of the regional economy, as a complex system that unites many objects and subjects, connections and aspects, requires the development of adequate scientific tools.

These opportunities are largely realized with the help of economic and mathematical modeling of socio-economic processes.

As one of the main methods of cognition of the surrounding reality in modern science, a systematic approach is used, which makes it possible to form universal knowledge about system objects, their qualitative definiteness, about the laws of existence, the mechanisms of interaction of components that form integrity, about the nature and content of their connections and relationships.

The concept of *"system modeling"* is used in modeling the economy not as a homogeneous object, but as a multilevel and multidimensional system, in which important elements and economic mechanisms connecting them are characterized by special mathematical models, that is, a system of models is an integrating research tool.

System analysis is the leading methodological direction in scientific research of regional problems and makes it possible to compare different approaches to solving problems of the regional economy and choose the best variants for their practical use in the interests of the country's economy as a whole.

A distinctive feature of the system methodology is that it connects specialized knowledge about heterogeneous and diverse subjects that make up the system into a single whole.

In comparison with analytical approaches, the purpose of which is to gain knowledge about individual properties of objects, this theory plays a unifying, connecting role in scientific knowledge [1].

At the same time, its goal is to bring the scattered and different-quality knowledge about the object, obtained by various sciences, into one generalized picture.

Thanks to the application of the system methodology, a complex chain of transition of knowledge about individual parts of a system object to obtaining integral ideas about it is built. As a result of applying a systematic approach, integrative models are created that satisfy the needs of society in combining specialized and differentiated knowledge.

The central place in the general theory of systems is occupied by the category of "systems".

The concept of *"system"* implies, in a broad sense, an ordered set of interrelated and interacting elements that perform a certain specific function and are not subject to further division from the point of view of the considered process of the system functioning.

At the same time, the division of the objects under study into elements and systems is relative, since each system can be an element (subsystem) of a system of a larger scale, and any element can be represented as a relatively independent system consisting of corresponding elements.

Thus, a system is a set of elements and / or relations that are naturally connected into a single whole, which has properties that are absent in the elements and relations that form it.

Moreover, each system object has certain systemic features, only these features show that it can be attributed to system objects.

The fundamental signs of the systemic nature of an object are delimitation, autonomy and integrity.

The internal structure of a system can be described through its components, which are structural units in the form of subsystems, parts and elements.

Along with the internal constitution, the structure also presupposes the presence of strictly defined connections and relationships between all its components, in which the formation, development and functioning of the system takes place. Any changes in these connections (the order of interaction of parts and elements or the intensity of their flow) indicate transformations in this system, and sometimes about its transition to another quality.

Thus, a necessary condition for the normal functioning and development of systems is the stability of the structure, the destruction of which leads to the disintegration of the object and its transition to a qualitatively different state.

The central link of the system is a dynamic intersectoral model, which was used to determine the summary indicators of the development of the national economy for the future in the sectoral context. In this system of models, the main attention is paid to district and inter-district models, the principles of matching individual models under certain assumptions.

A.G. Granberg developed and uses an intersectoral and interregional model, the main content of which is to determine the specialization of each region, the volume of import and export of products, and optimal transport and economic links between regions.

The model takes into account the development of non-productive consumption in each of the regions included in the system [2].

Thus, the distinctive features of a systematic approach to the study of the regional system are as follows:

- when studying an object in a systemic study, knowledge from various fields is used, which is necessary for its holistic cognition. Therefore, the study is based on knowledge in the field of economics, ecology, medicine, demography, sociology;
- the ultimate goal of systemic research is the formation of a holistic, integrative model of the object under study. In the course of the study, the analysis of individual components is carried out not for the sake of their own knowledge, but for the purpose of their subsequent reduction into a single whole, clarifying the role of these components in the formation of an integral object, maintaining its resistance and stability;
- systemic research analyzes the relatively independent objects isolated from the environment. Therefore, cognition has a divided, two-fold orientation. Internal connections and dependencies characterizing a given object (regional system) as an

autonomous whole are subject to research. On the other hand, its structure, regularities of functioning and development are being studied;

- systemic research, in contrast to analytical research, involves dividing an object into its component parts and analyzing its components not infinitely deep. The criterion is such a depth of penetration into the structural components, which is necessary for the scientific explanation and description of the object as a certain integrity. The finite element is indivisible not because it does not have its own structure, but because it is not necessary from the point of view of studying the integrity of the object;
- systemic research achieves its goal only when the cognitive process itself is organized according to the laws of integrity, subordinated to the acquisition of integrative knowledge.

The methods of system analysis allow solving major socio-economic problems within the region, including:

- tasks of formation and development of diversified and territorial production complexes,
- development of new areas and the formation of new industries,
- integrated use of mineral raw materials and rational use of labor, financial and material resources,
- raising the standard of living of the population.

At the same time, local optima should coincide with global ones, i.e. the plan of each region should be optimal for self-development and correspond to the optimum throughout the system of regions, of which it is an element.

The modern theory of interregional economic interactions (or interaction of regional economies) includes particular theories of the location of production and production factors, interregional economic ties, and distribution relations [3].

It uses the results of the theory of general economic equilibrium and international economic integration, while maintaining a significant similarity between the theories of interregional and international economic interactions. Therefore, this theory has found wide application in the analysis of interactions between regions within one national economy (regions) and new national economies (CIS countries), and regional economies of interstate unions (countries of the European Union).

The construction of models of economic interaction is based on the following theoretical concepts:

- the economy is viewed as a complex system with a number of subsystems (regions);
- each subsystem (region) has its own criterion of optimality, which reflects its internal interests;
- the functioning of the economy is the process of interaction of various subsystems, and planning of the economy necessarily includes the process of plan coordinating of the subsystems;
- the interaction of subsystems is carried out by means of an economic mechanism, i.e. is an economic interaction;
- the purpose of the process of economic interaction is to find the best combination of interests of individual subsystems and the system as a whole.

The general model of optimal economic interaction between regions is a model of planning and functioning of an economic system that combines public administration with economic independence and widespread use of commodity-money relations between regions.

With the help of such a model, the optimization of the economy is investigated as a process of interaction between production-technological, social and organizational structures.

Models of economic interaction make it possible to study both individual equilibrium states and the process of functioning of the economic system, which should strive to achieve a sustainable trajectory of balanced development.

The general model of economic interaction between regions of the economy should be dynamic and include a description of the mechanisms of transition from non-equilibrium states to equilibrium states and an exit from equilibrium states during structural changes in the economy.

Any model of economic interaction combines the models of individual regions (including the model of the “central” subsystem) and the conditions for economic development common to all regions. In this case, the model of each region contains a local criterion of optimality (objective function), a description of the set of feasible solutions determined by the internal conditions of the region's development, and a balance of economic relations with other regions. The second part of the model (general resource and technological constraints) is necessary for the coordination (agreement) of economic decisions of the regions.

The dynamic model of economic interaction reflects the change in all conditions in time, including the evolution of the criteria for the optimality of subsystems and the conditions of economic relations.

This model includes not only prices, income rates, etc., but also such dynamic regulators as bank interest, capital investment efficiency standards, and co-measures of the beneficial effect of consumption at different points in time.

The decisions of the model of economic interaction are dynamically interpreted as certain sets of effective trajectories for the development of the economic system.

The general properties of solutions to models of economic interaction not only do not contradict the principles of the national economic optimum, the theoretical results obtained with their help significantly complement the analysis of optimization models of the economy.

In particular, on the basis of models of economic interaction, the fundamental possibility of maximizing the global target function by means of decentralized actions of individual subsystems within the framework of a certain economic mechanism is proved.

The model of economic interaction of regions is used to describe the process of selection and coordination of development options in a multi-regional system through a market mechanism. This model is based on three fundamental concepts that play an important role in the system analysis of interregional interactions: Pareto optimum, the core of a multiregional system, and economic equilibrium in a multiregional system.

An information base is of great importance for modeling the country's interregional ties: statistical indicators and their systems, building balances and summary indicators of socio-economic development.

However, in the former centralized economy, the region did not have the full status of the economic subsystem of the national economy; regional statistics did not have the opportunity to describe the region's economy systematically and represent the national economy as a system of interacting regional economies.

In particular, at the regional level, the main macroeconomic indicators were not calculated and synthetic economic balances were not built. At the present stage, the main task of improving regional statistics is the creation of a system of regional accounts (SRA) - a logical continuation of the SNA for the regional level.

The methodological principles for constructing an SRA based on SNA and the synthesis of SNA-SRA were developed by the Nobel laureate R. Stone in the 50s of the XX century. Currently, the system of regional accounts is used in many countries [4].

With the transition to economic management methods, the scope of application of models of economic interaction between regions is significantly expanding. Studies of interregional relationships in the economy from the point of view of their consistency include three logical levels:

1) elemental (for each form of interregional ties, for example, analysis of the exchange of products of material production and scientific and technical information, population migration, etc.);

2) systemic regional (from the standpoint of the economy of a separate region as an open system);

3) systemic national economic (from the standpoint of the economy as a system of interacting regions).

Thus, one of the important research methods of the regional economy is the construction of models that reflect the structure, relationships, patterns of processes occurring not only in different regions, but also in countries with different socio-economic systems. To study the economy of the region, modified macroeconomic models are used, but taking into account the greater openness of the region in comparison with the national economy. An important factor in the development of the region's economy is external demand, which is expressed through detailed indicators (coming-out, coming-in, export and import).

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