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3 IMPLEMENTATION OF INNOVATIVE MECHANISMS TO ENSURING ECONOMIC GROWTH OF REGIONS BASED ON THE DEVELOPMENT OF TRANSPORT INFRASTRUCTURE

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ABSTRACT

The destabilization of the geopolitical, socio-economic and security situation in the world has exacerbated the issue of sustainable development of regional economies and deepening their interaction. Ensuring the growth of the national economy as a whole and individual regions in particular makes the search for mechanisms aimed specifically at internal sources relevant. Spatial development is gaining particular importance due to the increasing role of transport infrastructure in ensuring the economic growth of regions.

The socio-economic heterogeneity of regional systems plays a decisive role in the formation of mechanisms for ensuring economic growth, which determines the diversity and contradictions of the effects of transport infrastructure on them. This is expressed in the fact that similar infrastructure facilities in different regions can have different organizational and economic effects. Thus, the appearance of a road can lead to the acceleration of material flows, thereby contributing to the development of the region's economy, and on the other hand, can stimulate an accelerated outflow of population. At the same time, the principles of managing social development and economic growth of regions obtained in practice do not allow to take into account the functional diversity and inconsistency of the effects of transport infrastructure and thereby complicate the search for effective mechanisms for ensuring regional development. growth based on the development of transport infrastructure.

Therefore, the study focuses on the actualization of the need to introduce innovative mechanisms into the economy of regions by determining the conditions necessary and sufficient for the implementation of the role of transport infrastructure as one of the sources of sustainable economic growth. In this regard, the knowledge of the essence and patterns of the mutual influence of transport and regional economic development is of great theoretical and practical interest.

KEYWORDS

Destabilization, geopolitics, socio-economic development, transport infrastructure, regional economy, economic growth, innovative mechanisms, sustainable development.

3.1 CONDITIONS AND FEATURES OF ENSURING ECONOMIC GROWTH OF TRANSPORT INFRASTRUCTURE

At the beginning of our study, the task is to understand the conditions that allow transport infrastructure to be interconnected with regional economic systems, and to formulate a general concept of

improving mechanisms for ensuring economic growth of regions based on the development of transport infrastructure.

It should be noted that one of the conditions, in particular, is the need to take into account the stability of the inflationary or recessionary gap in which various regional territorial entities are located. The state when prices in some regions exceed the equilibrium, and aggregate demand consistently lags behind supply, is accompanied in other regions by a state when prices are lower than the equilibrium, and demand is constantly not satisfied.

The difference in conditions also requires different mechanisms for activating economic growth. The main mechanism for stimulating growth in regions with insufficient supply is the stimulation of aggregate demand. It is characteristic of such regions that infrastructure development is carried out by private agents.

As an example, it is possible to cite the process of formation in the transport infrastructure of the function of ensuring the movement and distribution of goods (associated with the development of logistics and trade). Successful resolution of issues of stimulating growth on the basis of this mechanism in individual regions has initiated interest in it as a basis for regional development [1]. However, this mechanism, as a national practice of managing regional development, cannot always ensure the growth and development of the entire complex of regional economic systems.

The main feature of regions in the inflationary gap is that stimulating demand negatively affects their economic system, since demand already exceeds supply. Such regions need targeted state investments, including for the development of transport infrastructure. The main mechanisms here should be aimed at expanding the capabilities of regional industrial production, taking into account the established industry specifics and stimulating interregional industrial cooperation.

In addition to the above-mentioned features of infrastructure development in different regions, one should not lose sight of the implementation of state interests in general. An important factor in the formation of an economically integrated space is the transport infrastructure, which provides living conditions and economic activity in the regions, contributes to the creation of a favorable investment environment and is a condition for the expansion of industrial and social structures. The formation of economic integrity and the establishment of regular interactions mean the strengthening of interdependence and the development of interregional production interactions.

Thus, it can be noted that the dynamics of the development of transport infrastructure in some regions and the parameters of the economic situation in other regions are mutually determining (the situation in each region depends on decisions and events in other regions). At the same time, it is not possible to forget about the internal property of regional economic systems, namely the possibility of mutually beneficial exchange. And here the development of transport infrastructure expands the possibilities of beneficial interaction for all regions through the formation of a single economic space and the deepening of interregional cooperation.

In addition to the tasks of the global and national division of labor and the state task of connecting the country's territory, there are tasks of lower territorial levels. In this context, the development of transport infrastructure should be linked to the economic level of the regional system, the goals set for it, the scale

of the existing and prospective production potential. During periods of crisis and post-crisis stages of development, the need for state participation in economic regulation increases sharply, since the state is the only agent capable of focusing on systemic goals under any circumstances. By implementing infrastructure projects and ensuring the integrity of the territory, the state contributes to reducing uncertainty and lays the basic foundation for overcoming crisis phenomena.

Next, it is possible to highlight the following essential condition that must be taken into account when forming mechanisms for activating regional growth. It consists in the mutual influence of economic systems of different levels and different regions, which can manifest itself in the interregional movement of population, resources, and investments. Thus, when implementing some regulatory influences in the field of transport infrastructure, it is necessary to take into account both internal and interregional flows of population and investment. In particular, the construction of highways in remote and depressed areas of the country is often accompanied by an outflow of population. That is, measures to develop transport infrastructure to achieve the goal of its attraction and consolidation should be accompanied by additional solutions that could stimulate such effects.

In addition to taking into account the conditions of regional economic systems and the specifics of interregional cooperation, another necessary condition for activating regional growth through the development of transport infrastructure is the inclusion of the regional aspect in the system of public administration. Studies show that the effectiveness of the same measure can be assessed differently by different agents. That is, the effectiveness of measures cannot be assessed according to conditional principles. For example, the construction of a relevant infrastructure facility may have a negative commercial effect, but a positive budgetary effect, for example, in the case when the city (regional) authorities decide to introduce a fee for the passage of commercial transport. Otherwise, the construction of a highway may require the demolition of some industrial building, but it can increase the transport accessibility and attractiveness of the territory for the population, stimulate the organization of new service enterprises along the route (public catering, car workshops), which can lead to an increase in the standard of living, income, population, land value and an increase in tax revenues. Thus, with negative effects for one entity, there are positive effects for others, including for local (regional) authorities. This indicates the importance of harmonizing different opinions and interests in planning and organizing the development of transport infrastructure. Therefore, it is advisable to involve regional and local administrations, as well as the local community, in assessing the effectiveness of measures and developing mechanisms for their implementation.

Thus, for the effective organization of transport infrastructure and improving the mechanisms for managing its impact on the economic development of regions, it is necessary to take into account all the above conditions, they are reflected in **Fig. 3.1**.

Thus, solving the above tasks allows ensuring the effectiveness of management mechanisms and the applicability of this toolkit for any regional territorial entities. A natural consequence of the existence of various connections and the complexity of the subject of research is the diversity of approaches to assessing the role of transport infrastructure and to the formation of mechanisms for ensuring economic growth of regions based on the development of transport infrastructure.

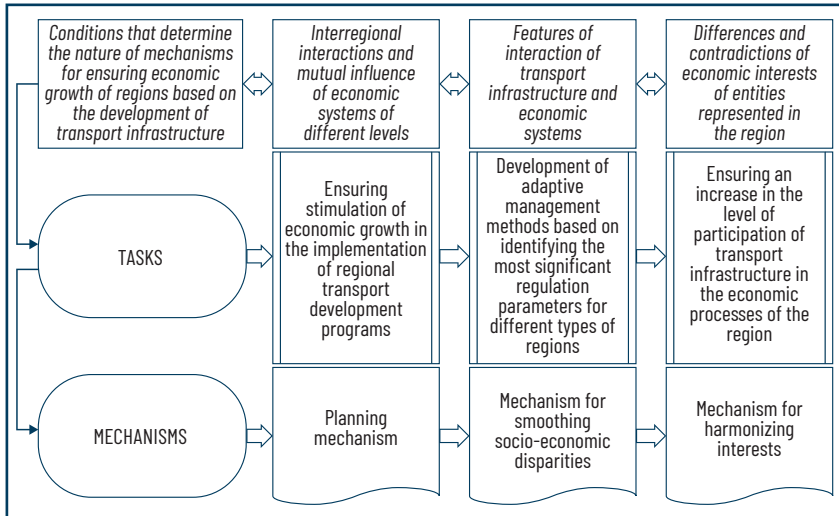

Fig. 3.1 General concept of improving mechanisms for ensuring economic growth of regions based on the development of transport infrastructure

Source: [2, 3]

3.2 METHODOLOGICAL SUPPORT OF TRANSPORT INFRASTRUCTURE DEVELOPMENT MECHANISMS

At the next stage of the study, it should be noted that the complexity of the transport infrastructure system, the multidirectional impact on both the economic and social systems determined a wide range of tools for forming mechanisms for ensuring regional growth based on the development of transport infrastructure. Having studied and generalized international experience, a systematization of methodological approaches and methods for forming mechanisms for the development of transport infrastructure was obtained (**Table 3.1**).

Therefore, it is possible to conclude that there are theoretical premises that are the basis for further research and analysis. Initially, it is assumed that the territorial location and economic significance of transport infrastructure are extremely heterogeneous, the level of its development differs significantly between regions. This necessitates the structuring of regions according to the ratio of economic characteristics and transport infrastructure indicators.

Therefore, for an adequate analysis and assessment of the impact of transport infrastructure on economic growth and, ultimately, for the formation of adaptive management methods, it is necessary to take into account the spatial structure in order to correctly understand the scale, nature of the inclusion of transport infrastructure in the regional economic system, the level of interregional connections. that it provides. On the other hand, it is important to take into account the main characteristics of the economic system within which the analysis of transport infrastructure takes place.

Table 3.1 Systematization of methodological approaches and methods for forming mechanisms for the development of transport infrastructure

Main aspects of the methodology	Development of management mechanisms	Advantages of approaches	Disadvantages of approaches
Descriptive approach — Technocratic method			
Analysis of the state and technical parameters of transport networks	Organization of interaction between modes of transport, harmonization of network operation	Systematization of transport activities	Complexity of comparison and quantification
Descriptive approach — Economic and geographical method			
Description, assessment of quantitative indicators proceed from economic sense	Regulation of the provision of infrastructure facilities in various territories	Comparison possibilities (ranking, assessment of dynamics)	Lack of consideration of spatial characteristics
Economic and analytical approach — Balance method			
Transport is considered as one of the branches of the economy through cost indicators	Improving the planning of the distribution of costs for the development of transport infrastructure	Depth of assessments and ideas about the parameters of the interconnections of industries	Laboriousness; the balanced scenario does not seem realistic enough
Economic and analytical approach — Capital method			
Cost and quantitative assessments of transport infrastructure as a capital resource	Regulation of interregional interactions on the use of transport infrastructure	Assessment of the role of transport in comparison with other resources (labor and capital)	Complexity of modeling spatial aspects
Economic and analytical approach — Investment method			
Cost assessments of transport infrastructure as an investment, providing for the return of invested funds	Organization of principles of joint financing of transport infrastructure development	Possibility of assessing the time horizon of the implementation of the Transport Infrastructure Development Project; the effectiveness of transport infrastructure development for individual companies	Contradictions between the guidelines for increasing the efficiency (return) of investments and stimulating regional development processes

Source: [4, 5]

The essence of the analysis in this approach is not limited to the study of individual aspects of transport infrastructure or the economic environment. Spatial prerequisites for the formation and support of economic interactions have been identified, which, together with the assessment of the main parameters of the economic system, allows to put forward adequate hypotheses regarding the determination of the main factors and conditions of the economic development of the region and further determine the mechanisms by which this development can be carried out. Thus, the conditions considered above that allow transport

infrastructure to be interconnected with regional economic systems and methodological approaches and methods for forming mechanisms for the development of transport infrastructure make it relevant to improve the mechanisms for implementing management functions presented in **Fig. 3.1**. Let's consider it an important scientific and managerial task to determine the parameters and conditions for the functioning of transport infrastructure necessary to stimulate the growth and development of a specific regional economic system. Thus, a fundamental basis is formed for the implementation of these mechanisms in practice, since the required state of transport infrastructure significantly depends on the current structure of the economy.

3.3 TRANSPORT INFRASTRUCTURE DEVELOPMENT PLANNING MECHANISM

To increase management efficiency, it is necessary to create and develop an information and analytical system for managing the implementation of programs at different levels [6]. The main tasks of such a system are: registration of analytical information in various forms (in terms of basic indicators; planned indicators, territories, etc.); design of transport development programs both in territorial and temporal terms with a breakdown into objects, nodes, directions and corridors with their current and prospective characteristics.

Such a large-scale and intensive process of forming programs in the system of public administration and local self-government was designed to solve problems related to determining the goals of regional and local authorities in terms of stimulating the economy and ensuring the focus of the territorial development process. However, it is worth saying that this mechanism is not completely perfect, since the formally approved requirements for ensuring territorial development were not properly supported by an understanding of the nature of the impact of transport infrastructure on the economic growth of individual territories, ways to enhance growth through transport infrastructure. One way to overcome such planning difficulties is to transfer planning goals from higher-level programs. In general, this approach corresponds to the established practice of setting management tasks from top to bottom.

It should be noted that the transformation of the principles of public administration will allow to increase awareness of significant interrelationships and develop mechanisms that will have a tangible impact on the development of territories. This will make it possible to increase the degree of compliance of the planned process of state and local administration with the goal of regional growth. It should be expected that the priority of the principle of territorial development will contribute to the most complete achievement of the goal of activating regional growth. At the same time, the system of indicators that will reflect the stages and levels of achieving the goal needs to be improved. The relevance of such improvement is dictated by the need to monitor the process of stimulating growth through the development of transport infrastructure, as well as the need for an objective assessment of the existing reality and options for territorial development.

The principle of purposefulness in application to planning activities for the development of territories provides that for territories with different characteristics a set of special actions or measures will be developed that will increase the efficiency of transport infrastructure as a source of growth. Efficiency here should be understood as the most close to the goal of economic growth of the territory through the use of material, labor and energy resources of the transport industry.

No less important is the group of principles related to an adequate description of existing socio-economic systems and the study of the features and patterns of their development, which provides for the strengthening of the regional vector and the systematization of knowledge about the genesis of socio-economic systems of various types. A substantial and meaningful understanding of the trends in the development of socio-economic systems, obtaining reliable ideas about their reactions to external influences is the most important condition for the implementation of the scientific principle in the process of territorial development planning. Based on reliable data, it is possible to develop measures that will be effective in different conditions for different regions. This ensures the implementation of the principle of reality. In the absence of scientific research of systemic reactions, it is impossible to develop effective mechanisms for improving socio-economic systems, it is impossible to determine the level of resource provision that can lead to solving problems. The choice of methods according to any other principle, such as the introduction of best practices, does not remove the question of understanding and assessing the consequences of implementing certain decisions. At the same time, the implementation of the principle of connection with the socio-economic life of the territory is not achieved, as indicated in the source [7]. Only under the condition of a meaningful analysis of the conditions for the development of regional economic systems and their connections with the transport infrastructure is it possible to select and develop such managerial influences that can significantly affect the system in a certain direction, which makes it possible to successfully implement the planned function of managing the development of transport infrastructure.

Another group can be those principles that contribute to the formation of the sustainability of the planning process for the development of organizational and economic relations of transport infrastructure. These include the principles of continuity and flexibility. Continuity should be understood as the ability of the management system at any time to determine the development process with varying degrees of success. It is obvious that in conditions of crisis, with changes in national and/or international macroeconomic trends, with changes in priorities and key principles of national policy, manageability and predictability may decrease, which requires a new scientific understanding and coordination with reality. Reproducing this stage in new, changed conditions and developing actions corresponding to the prevailing circumstances will be an expression of the principle of continuity. The flexibility of the public administration planning process is expressed in the ability to perceive and take into account such transformations in the current and subsequent planning cycles.

Therefore, it is possible to conclude that when implementing the priority of territorial development, it is necessary to deepen the established programs for the development of transport infrastructure through objective assessments of connections with socio-economic systems of different levels.

3.4 MECHANISM FOR SMOOTHING SOCIO-ECONOMIC DISPARITIES IN THE DEVELOPMENT OF TRANSPORT INFRASTRUCTURE

Earlier in our study, the need to perceive regional economic systems as complex and heterogeneous elements of the national system, in which multidirectional trends can operate, was substantiated. The features of economies in conditions of inflationary and recessionary gaps were highlighted. The essence of

this division is that different properties of economic systems imply different mechanisms for activating economic growth. Since the territories of the recessionary gap are characterized by a state of overproduction, the main vector of approaching the equilibrium state is determined by economic theory to stimulate demand. Unlike recessionary territories, territories in the inflationary gap have a price level below the equilibrium, which hinders production processes, which ultimately leads to a significant excess of demand over supply. Therefore, the use of mechanisms for stimulating demand turns out to be detrimental for such territories due to the intensification of negative trends and an increase in deviations from the equilibrium state. It was also proven that this property of economies is systemic and affects not only the sphere of transport infrastructure.

For this reason, the formation of mechanisms for stimulating economic growth through the development of transport infrastructure should be adapted to the current situation in the regions. Such unevenness of the national economy makes it necessary to develop mechanisms that would improve the proportions of regional development and reduce gaps.

Based on the study of the conditions of economic growth in regions of the inflationary gap, it is possible to conclude that it is necessary to take into account important organizational conditions to ensure economic growth. Based on this, let's highlight the main groups of measures and areas of improvement for stimulating the economic growth of regional territorial entities in the inflationary gap through the development of transport infrastructure, in particular:

1. Stimulating the organization of primary processing of the flow of raw materials with coordination between private and regional business entities at the highest level of management; state support for industrial and infrastructure development. Mechanisms for harmonizing industry interests and interests of regional and local development in the formation of transport infrastructure:

— legislative registration of incentives for the creation of industrial transport networks taking into account the potential for regional growth; financial support for transport infrastructure development projects; control over targeted spending of funds; coordination of national-level interests in industrial development and regional-level interests in economic growth;

— development of transport infrastructure projects to ensure regional growth; financing; control over the technological and technical level of transport infrastructure project implementation; implementation of measures invested in stimulating industrial development;

— development of transport infrastructure projects at the regional level to ensure regional growth; interregional cooperation in the formation of transport infrastructure development projects; organization and implementation of a transport infrastructure development project; development of measures to stimulate the development of industry on the basis of the created infrastructure.

2. Stimulation of the production of final demand products, organizational work by local and regional administrations, production associations. Mechanism for the development of public transport infrastructure networks based on state funding:

— legislative provision of opportunities for interregional cooperation on infrastructure and industry development; financial support for transport infrastructure development projects; control over targeted spending of funds;

— development of transport infrastructure projects to ensure regional growth; organization and implementation of a transport infrastructure development project; development of measures to stimulate economic growth on the basis of the created infrastructure.

3. Purposeful formation of territorial and economic relations for the organization of production. Creation of conditions for attracting flows of technological transfers from highly developed regions. Mechanisms for preserving transport infrastructure and increasing its level of improvement and quality. At the initial stage, the construction of better roads and the organization of roadside service. Involvement of the most convenient places in economic turnover:

— financial support for projects to improve the existing transport infrastructure system; control over targeted spending;

— development of the regional level and financial support for projects to improve the existing transport infrastructure system; organization and implementation of projects to improve transport infrastructure; development of measures to stimulate economic growth based on the infrastructure being created.

Thus, it is possible to conclude that most regions have significant potential for significant economic growth. However, its implementation is associated with the implementation of a set of measures, and specialized for different groups of regions. Therefore, the next step is to develop mechanisms that ensure the most complete consideration of the interests of local communities in the growth of the local economy. The importance of developing a coordination mechanism is due to the fact that it is also necessary to ensure that national interests and the interests of individual manufacturing companies and industries are taken into account.

3.5 MECHANISM FOR HARMONIZING INTERESTS IN THE TRANSPORT INFRASTRUCTURE DEVELOPMENT SYSTEM

Transport infrastructure projects, oriented towards end-use, implement social functions and ensure the expansion of consumer demand. Thus, the involvement of local private entities in investment activities in the transport construction sector will contribute to the mitigation of the recessionary gap. The functioning of the mechanism for harmonizing the interests of stakeholders should be aimed at harmonizing two blocks of issues.

BLOCK I. This block is related to the conditions of investment activities, in particular, specific measures for the construction of transport infrastructure facilities should be determined (quantitative measurement of the expected length of roads of a certain class, special structures, etc.). On the other hand, these measures should be reflected in the financing part. Determine the terms and stages of direct implementation of infrastructure construction measures. Implementation of the project by a private agent with the involvement of its investment potential can contribute to increased savings due to more economical use of materials and increased labor productivity. During the implementation and upon completion of construction, the state's efforts should be aimed at monitoring the planned passage of construction stages and achieving the required level of quality of infrastructure formation. This is necessary because the private investor will focus on the fastest and most economical solution, which, in turn, may lead to disruption of

a number of technological operations and a general decrease in the quality of facilities, and this is designed to make state control impossible at this stage.

BLOCK II. Determining the conditions for the return of investment to private agents. Here, the state as a stakeholder formalizes its interests in creating the prerequisites for socio-economic development. And, accordingly, the more significant the external positive effects of creating a transport infrastructure project, the higher the concession payments can be. To implement such impulses, taking into account the specifics of the territories, transport construction should be accompanied by measures to improve the urban environment, expand development and increase the accessibility and availability of transport infrastructure. To this end, organizations implementing an infrastructure project should interact with local authorities on issues of increasing the significance of the transport facility in social terms.

At the end of our study, it is possible to determine the positive effects of the practical implementation of improved mechanisms for ensuring economic growth of regions based on the development of transport infrastructure:

– change in the ratio of the number of enterprises in the regional center and in the rest of the region (reduction of concentration in the capital);

– increase in the number of companies localized in a certain industrial zone on the "periphery" of the region;

– decrease in the specific costs of each enterprise located on the periphery;

– reduction of negative consequences in areas of overconcentration of production while simultaneously reducing it;

– development of production cooperation due to an increase in the number of regional suppliers and contractors;

– increase in the share of meeting the needs of transport construction at the expense of local goods, resources, components;

– increase in industrial production in terms of volume;

– expansion of the range of own products, components, parts, etc., as an element of the country's national security in the field of goods;

– reduction in the physical volume of imports of certain categories of industrial goods;

– increase in the labor intensity and depth of raw material processing;

– growth in private investments (public finances) attracted to the production sector;

– increase in the physical volume of production of innovative products;

– increase in the introduction of innovative equipment and technologies.

3.6 DISCUSSION OF THE RESULTS OF THE IMPLEMENTATION OF INNOVATIVE MECHANISMS FOR ENSURING ECONOMIC GROWTH OF REGIONS

Currently, an active scientific search is underway for tools and mechanisms for ensuring economic growth of regions at the expense of the country's internal forces. Transport infrastructure is considered one of the most important engines. The study:

– theoretical provisions were generalized and practical recommendations were developed for ensuring economic growth of regions based on the development of transport infrastructure;

– the main theoretical concepts of the role of transport infrastructure as a source of regional growth and development were considered and the conditions that must be taken into account for the formation of effective mechanisms for ensuring economic growth of regions based on the development of transport infrastructure were identified and described: the need to take into account the mutual influence of economic systems at different levels; the need to analyze the interrelationships of transport infrastructure and the regional economic system; the need to coordinate the interests of various agents (stakeholders) represented in the region;

– an analysis and generalization of existing approaches to the formation of mechanisms for ensuring growth based on the development of the transport infrastructure of the system was carried out and it was established that they mainly take into account to a small extent the participation and nature of the prevailing organizational and economic relations of the transport infrastructure and the local economic system.

The above-described conditions, in combination with the tasks set and their solution, allowed to improve and form a number of mechanisms that took shape in the concept of improving the mechanisms of economic growth of regions based on the development of transport infrastructure.

The proposed mechanisms can serve as the basis for the development of management decisions that will be different in content (attraction of private or public investments in infrastructure projects; development of industrial transport or transport infrastructure of final demand; development of the distribution functions of transport infrastructure or transport). interactions that provide integration and cooperative interregional production links) for each individual regional or local economic system, but are united by the goal of ensuring economic growth of regions based on the development of transport infrastructure.

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