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Formation of Regional Clusters as a Factor in the Investment Development

ABSTRACT

The aim of the research is to study the role of clusters in securing of regional development, particularly in enhancing the investment activity through the introduction of new regional mechanisms regulating these processes. In the article the importance of innovation and investment component of regional development is defined. Today, ensuring sustainable economic growth and improve the efficiency of the region cannot be solved only through the use of standard techniques and tools. One of the most effective forms of economic integration through the formation of the spatial organization of the productive forces is the development of cluster formations within one economic territory. The importance of building regional cluster of social facilities, such as construction is proposed for consideration. Their importance for regional development in general and to related industries in particular is considered. The model of return tax revenues to the local budget in the development of investment in the production of new housing and the development of appropriate urban infrastructure is proposed.

Key words: *innovation, investment, regional economic development.*

Introduction. Present conditions of social and economic development of Ukraine require new approaches and mechanisms to regulate the development of the region in order to stimulate innovation and increase the investment attractiveness of the region. After all, innovation and investment are key factors for effective growth in the region. One of the most effective mechanisms for involving such factors is to organize clusters within the region. Today comprehensively promote of cluster initiatives and cluster in the regions is made in the world. Organizations such as the CEI (Central European Initiative) (Central European Initiative), Clusterobservatory in Europe (Slusterobservatory in Europe), US Cluster Mapping Project (US Cluster Mapping Project) and others contribute to the dissemination of experience of creating clusters in the world, the search of cluster initiatives and their activation. The development of regional clusters actively studied both foreign and domestic scholars, among the most prominent international theorists and researchers should be noted: M. Porter, M. Enright, F. Perrou, I. Veza, O. Solvel, D. Hart, D. Muler, P. Huhler, M. Keller. Ukrainian researchers in this issue: V. Blonskaya, I. Budnikevych, V. Heyets, T. Kibuk, A. Kolesnikov, N. Krasnokutskaya, E. Lapin, N. Mitsenko, A. Oleksyuk, I. Repin, O. Rossoshanska, C. Sokolenko, A. Sushchenko, A. Fedonin, N. Tsepenyuk, and other scientists.

Despite increased attention and quite thorough approach devoted to the issue of cluster development, there are still not covered the question of establishing mechanisms to intensify investment flows to clusters and calculation results from it.

Material and Methods. Materials and methods that were used in the work are based on an analysis of regional development and research solutions. Theoretical and methodological basis of the research were the works of local and foreign scientists and economists on the problems of regional economic development, modern concepts of regional organizations in the business, and the results of research conducted by the author and generalizations. In this paper, such methods were used: theoretical generalization, the method of statistical analysis, method comparison, logical generalization.

The information base of studying were: the laws of Ukraine, Decrees of the President of Ukraine, Cabinet of Ministers of Ukraine, the Ministry of Regional Development, Construction and Housing and Communal Services of Ukraine, regulations of the ministries and other state agencies and regional levels of government, the concept of Cherkasy region, statistical data State Service Statistics and Ukraine Cherkasy Region statistics.

Results and Discussion. Today one of the key features of investment in the region is an innovative component. Most investment is directed and innovative active areas of economic activity. For example, in Ukraine in 2015, the largest share of investment directed in industry 36.2% (including the largest in the manufacturing industry), real estate, renting and business activities (17.7%), transport and communication (16.5%) (The State Statistics Service of Ukraine). Investors today are interested in investing in progressive directions of development. And cluster development of the region involves the use of such technology and the intensification of the investment process.

During the scientific discussion within the Fourth International Conference on Technology Policy and Innovation, held in Brazil in June 2000, was produced following types of clusters in the degree of innovation (Hopkins, 2003):

- Dependent or truncated cluster, consisting of parts of technologically interrelated enterprises, sometimes significantly disparate clusters, whose activities are limited to a set of standard functions (extraction of resources, processing, enrichment, sending). Applied technology is quite advanced, but not advanced. New technology coming to production in the form ready for immediate use of the product;
- Industrial cluster, which is a group of co-operating companies, producing typical products or services. The use of new technologies is limited quality control and management;
- Innovative-industrial cluster, which is composed of a group of co-operating companies that produce products and services that require constant updating, improving product quality, implementation of new functionality. Members of the cluster continuously and stable relations with research centers and educational institutions;
- Innovative cluster, consisting of the companies targeted by the world's leading standards. Participants cluster focused on the speedy acquisition of the knowledge and technologies to improve current competitiveness;
- Innovation — oriented cluster, which is a group of companies that use advanced knowledge and technology that attract talented labor from around the world. Members of the cluster are consumers and generators of venture capital; determine areas of research in universities and educational institutions through the presentation of their demand. This cluster essentially defines industrial, investment, and social structure of the region.

Great contribution to the cluster theory of economic growth has made M. Enright, who has developed four types of cluster policies that differ from each other by mechanisms of conducting (Enright, 1996):

1. Catalytic cluster policy. Government reduces interested participants (eg, private company and research company) and provides them small financial support;
2. Maintenance. Catalytic state policy supplemented significant investments in infrastructure of regions (in education, skills training, marketing and etc.), that creates favorable environment for clusters development;
3. Prescriptive. Maintenance function of state is carried in within programs of transformation specialization of regions by using of development clusters;
4. Interventionist. Government actively forms specialization of clusters by using transfers and subsidies, administrative restrictions and incentives controls activities in firms within clusters.

Thus, in recent years the problem of attracting investments for industrial clusters in the region is not as acute as the problem of effective use based on strengths and weaknesses, potential for its further development. Therefore, there are cases when attractive in terms of investment companies use resources inefficiently received investment from large losses in the form of cash expenses and profits.

According to the theory of Porter, developing countries, and therefore the region, according to the following four stages (levels) (Porter, 2003):

- competition, which based on factors of production;
- competition from investments;
- competition based on innovation;
- competition on the basis of wealth.

The first three stages provide economic growth, competition on the basis of wealth causes stagnation and decline.

Adapting these terms in relation to the region, we can say that the competitive advantages provided by the selected stages various combinations of determinants:

- in the first stage — thanks to factors of production, natural resources, favorable conditions for the production of goods, skilled labor, all this provided only one determinants of factor conditions;
- in the second stage — development from active investment in education, technology, licenses, which are provided by three determinants: factor in their terms, conditions demand, strategies in business;
- the third stage — by account creation new species products, production processes, organizational decisions and other innovation by actions of all four determinants: factor conditions, conditions demand related and ector strategy an economic sub object;
- the fourth stage — development is by account. There are created wealth and based on all determinants, but their use is characterized by low efficiency.

Most countries in the modern world economy made the transition to an innovative type of economic growth, and therefore to create competitive advantages are very important scientific knowledge, education — and how factors of production, and how factors in the formation of competitive advantage in the region.

Thus, the key to sustainable economic growth is the effective operation of the industry, which, in turn, has a serious impact on the wider economy and, not least, the social sphere.

Currently, there are many theories of regional growth, among which are five areas:

1. Neoclassical theory based on a production function; theory of cumulative growth, which is a synthesis of neo-Keynesian, institutional and economic-geographic models.
2. New theories of regional growth based on increasing returns to scale and imperfect competition.
3. New forms of territorial organization of production, which was based on industrial and regional clusters, adding value chain, economics of education, national and regional systems of innovation.
4. Other theories to explain private or individual issues of regional growth.

These theories have their advantages and disadvantages; however, in order to create conditions for a transition to sustainable development, to replace the outdated approaches have come new technologies of regional development.

Currently very popular theory of growth poles, put forward by the French economist F. Perrou (Radushinsky, 2013). The idea poles of growth, is the concept of the leading role of the sectorial structure of the economy, and especially the leading industries, create new products and services. Not every regional center is the pole of growth, but one which has a propulsive industry. The development of regions is determined by the need to find a field that will give impetus to the development of the regional system. Public investments are concentrated where they expected from a large economic impact. Refers to those areas in which the location, nature resources contribute to the development propulsive activities. The selected region is determined by the item which will become a pole of growth. Further state aid growth poles can be carried out in different ways participate in the survey work, investment in infrastructure, entrepreneurship and other benefits.

Once the level of generated growth pole reaches a certain threshold, a special government intervention in the form of benefits and massive investments are not required, than begin to work polarized effects and multipliers. Pole developing is growth by endogenous factors. Support pole growth at the initial stage of formation of the state or regional administration serves only as a catalyst for regional development, but without the catalyst cannot go.

Based on the theory of growth poles in the process of development strategies of socio-economic development of regions and the country is necessary to be appropriate to transition from “cohesion policy” in principle “polarized” (“focused”) development. Assumed a special concentration of financial, administrative and managerial, human and other resources in the “reference areas” and “areas-an engine for growth” (“poles”) from which innovative activity later spread to other areas. This concept is ambiguous attitude. On the one hand, it stated thesis is correct about the need to move from a policy of “leveling” to the policy of “polarized development” regions. Indeed, a reasonable economic policy may lie in supporting leaders and identifying new “growth points.” On the other hand there are serious doubts about the fact that “the regions of the locomotives” will extract subsidized area faster migration will occur in the “basic regions.” Thus, this concept along with the positive and negative features of a feature:

- To create and stimulate growth poles need a large initial investment;
- As the experience of foreign countries, the creation of the pole does not mean mandatory economic growth of the region as a whole;

- A real growth in the region is more determined by the specifics of its internal industrial environment, as productive capacity and structural component of its branches.

Therefore, for the sustainable development of territories, in our opinion, is not a prerequisite for the existence of “growth poles”.

Widely known, at present, along with the concept of growth poles, was structurally innovative concept of regional development. According to this concept, the structural transformations are two stages. The first is usually aimed at overcoming the economic crisis and the decline in production in order to maintain technological capabilities (by supporting certain sectors and certain socio-intense regions). At this stage, as priority areas of government support allocated sectors producing vital products (fuel, food, medicine) and social sector (housing, health, etc.). The second stage is achieved stabilization and gradual growth. It provides for the establishment of long-term incentives for the development, formation of favorable economic conditions for the most promising sectors and industries (eg, development of new energy sources, promising synthetic materials, production of electronics, communications, and expansion of specialized manufacture of consumer goods and so on).

In this concept the most emphasis is made on the structural components, while the innovative aspects are overlooked. Priorities restructuring of the region (social reorientation of production, reducing harmful impact on the environment, modernization of existing enterprises, including through diversification, development of industrial infrastructure, the emergence of flexible production structures, etc.), that are not supported by institutional arrangements and innovative development strategy.

To achieve truly sustainable development and creation of preconditions long and continuous economic growth is essential that structural changes supported by the intensification of innovation. Structural changes should be made to increase the production of high-tech, high technology products while reducing the share of primary industries, material-and environmentally hazardous industries.

One way analysis of growth poles in the region is the definition of cluster initiatives, namely clusters because today is the sphere of innovation and investment processes. Investment in cluster development provides maximum effect as at the regional level and at the level of a number of related industries in the region. We offer a cluster in the region to bring together the interests of different sectors of the economy and growth in the whole economy of the region. One of the most promising in the economy is a regional cluster of social facilities, which promotes activation of construction activity in the region.

Given the structure of the cluster it is advisable to group main activities of activation and development of regional cluster as follows: measures implemented by the administration of the region; measures implemented business; joint actions of the administration and business of the region (Fig. 1).

The most important barriers of the development of regional cluster are:

- Low volume of investments in fixed assets, the decline in investment activity;
- Insufficient production of modern building materials.

The consequence of these problems is:

- Reduction in production and operation of social purpose that complicates solve social problems;
- The decline in the production of materials and services.

In the short and medium term, the most important action of the authorities in the region may be the establishment of the scientific and policy advisory bodies in the cluster. Key activities of the business development of regional cluster. Horizontal and vertical integration of enterprises in production and operation of social objects can be realized by themselves on their own initiative. Besides, these actions will help create the missing elements of the cluster.



Figure 1. The Main Activities of Activation and Development of Regional Cluster.

Today regional authorities should choose the preferred direction in the development of the mechanism of CSR in the region. One of the current problems in Ukraine is the housing problem, which is also acute in Cherkasy region.

Solving the housing problem is to create conditions for businesses to encourage them to follow the principles of social responsibility, in particular, by producing housing at the expense of company profits and providing apartments to employees of the company under the terms of repayment of the cost for 10-15 years.

To implement this idea must solve a series of fairly complex tasks, both at the regional level and at the level of the enterprises themselves, namely:

1. Develop a law to defer paying income tax to the local budget, directed by companies to manufacture housing for employees of companies.
2. Develop and sign every enterprise, keeping tax compliance and legislation, the contract to provide the enterprise tax credit. An essential condition of the contract to direct funds designated contract for the production of housing for employees. Moreover, agreements on housing production shall be assigned only to those companies that are registered in the Cherkassy region.
3. Develop and sign an agreement (between the employee and the company by now) to provide employee housing (apartments) on credit (in installments) due to company profits, the form, amount and timing of the return of the cost of housing.
4. Develop a system of legislation reducing the tax burden for enterprises to passage of critical volume production.
5. Develop a system of measures to ensure the formation opportunities for development in the Cherkasy Oblast regional cluster.

It appears that the employee should buy houses, if not for the cost, then at least a reasonable level of return of 10-15%, rather than 100 or even 200%.

Naturally, in the case of businesses tax credits budget of the region for some time will not get required part of significant tax revenues. However, investments channeled into the production of housing would be returned to the budget of the region by increasing production (and thus tax revenues) as actually building organizations and all enterprises cluster.

Moreover, increased production of housing will inevitably lead to an increase in output in the forestry cluster, enterprises related industries (construction industry, chemical and petrochemical industry, electrical, etc.), a significant increase in jobs throughout the economic space area.

Consider the model return tax revenues to the local budget in the development of investment in the production of new housing and the development of appropriate urban infrastructure. The amount of revenue from performing their own work on the creation and maintenance of social facilities in this case, can be defined as follows:

$$F_1 = \sum_{i=1}^m \sum_{j=1}^l x v_i a_{ij} \beta_{ij} \gamma_{ij}$$

where X – amount of investment;

v_i – the share i type of work in total investment, where m – number of works on creation and maintenance of social facilities;

a_{ij} – the share of j tax because the i -type work, where j -type taxes paid to the regional budget;

β_{ij} – rate of j -tax in i -type of work;

γ_{ij} – share allocations j -tax in the i -type of work in the regional budget.

Operation and maintenance of additional social facilities inevitably leads to an increase in work in related industries, from which also carried filling the regional budget.

Regional budget revenues due to business related industries (machinery, chemical and petrochemical industries, mining, forestry sector, energy sector, light industry, transport) can be defined as follows:

Let X_i – the total investment;

v_i' – share type of work in a related industry sector, with i varying from 1 to m , where m – number of works;

a_{ij}' – the share of taxes in the value of the work, while j varies from i to l , where l – taxes paid to the regional budget;

β_{ij}' – tax rate;

$\gamma_{ij} k_i$ – share of taxes to the local budget;

k_i – participation rate of the i -type of work in other related industries.

It follows that the additional contributions to the budget of the increase in output, tax rate, share of contributions to the regional budget, taxes are expressed by the following:

$$F_2 = \sum_{i=1}^m \sum_{j=1}^l x' v_i' \alpha_{ij}' \beta_{ij}' \gamma_{ij}' k_i$$

If you use a tax credit company returns it and pays interest for the use of the budget.

Conventionally, we assume that S_n – tax credit;

C – rate tax of credit;

360 – number of days in the year;

K – number of days of using tax credits,

F_3 – fee that goes to the regional budget for the use of the tax credit.

Consequently, the amount of fees for the use of the tax credit can be expressed by the following relationship:

$$F_3 = S_n * \frac{C}{360} * K$$

Then the total amount of tax revenues to the local budget will be:

$$F_4 = (F_1 + F_2 + F_3)$$

Consider the amount of tax revenue to the economy of the region. Let X_s – investment per year in S economy of the region:

V_i – investments that will be used to perform i ($i = 1, n$) type of work, it is clear that different sectors are different on the elements and the number of elements of the set, although they largely overlap, but the volume of investments which account for a particular type of work (services) substantially depends on the particular sector in which this type of work will be in demand.

α_{ij} – tax in the overall tax burden on the i -type of work performed;

β_{ij} – rate deductions for j tax in the implementation of i type of work;

γ_{ij} – share of contributions to j tax i type of work to the regional budget;

K_{ir} – mutual participation rate of i type of work performed by related r – x ($r = 1, n$) the work of the sector.

Then the amount of tax revenue from the performance i kind of work can be calculated as follows:

$$F_1 = \sum_{j=1}^m X_i v_i \alpha_{ij} \beta_{ij} \gamma_{ij} K_{ir}$$

And total amount of tax revenues to the local budget in the development of the total volume of investments X_i another sector of the economy is given by:

$$F_s = \sum_{i=1}^n \sum_{j=1}^m X_i v_i \alpha_{ij} \beta_{ij} \gamma_{ij} K_{ir}$$

The proposed expression is invariant (independent) with respect to any sector of the economy to various socio-economic issues and regions in which investments are made of course, many types of work, as the elements and their number will be different for different sectors, as well as the coefficient K_{ir} , and the quantities α, β, γ does not depend on the sector in which investments are made.

With the development of housing for companies in other industries some of the tax will be removed with tax exemptions on taxes regional budget. This filling will take place on the first day of training building a house.

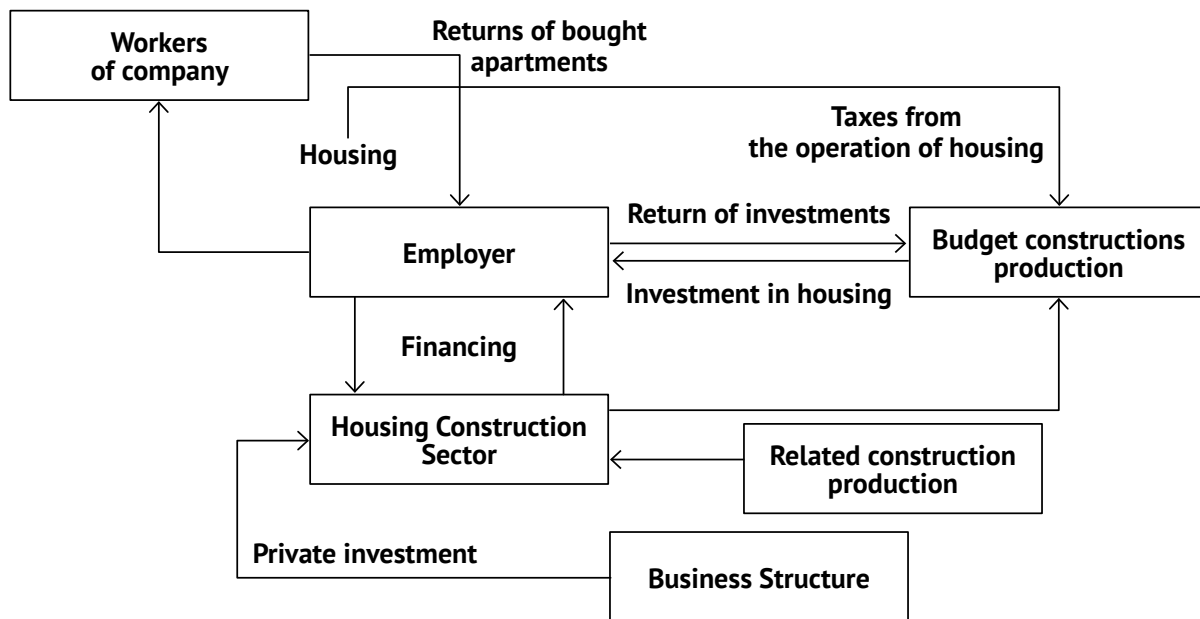


Figure 2. The Mechanism of Filling of Lost Tax Revenues of the Regional Budget.

During the period of market economy changes in how the tax regulation of investment activity was characterized using a variety of tools – tax benefits. Improving the conditions of investment contributed to reducing income tax rates. But along with this was abolished all privileges in the first place – investment, which significantly reduced the positive effect of chain transformations for investors. Meanwhile, international experience shows that incentives in the tax system perform a regulatory function and are designed to encourage the development of industries and activities, of which largely depends on the economic potential of the regions. The problem of improving the investment climate in Ukraine’s regions has a pronounced systemic. Imperfect legal framework governing investment processes and deformation in the structure of investment by different sectors have a direct impact on almost all aspects of economic and social life. To solve this problem, the following activities: development of appropriate cluster program to stimulate investment, monitoring and controlling the effectiveness of its implementation. However, in practice often rely on the natural course of events, under which usually refers to the action of natural market forces. The failure of the investment policy is particularly evident in the cluster of social facilities. Firms engaged in the production and operation of housing usually do not experience any involvement of regional authorities in attracting investments, are constantly faced with the imperfection of the legal framework, including in the field of taxation. All this complicates the decision-making process for the development and implementation of investment projects. Speaking of the world experience economic reforms in taxation, it is important to note that, despite the predominance of a concept of economic development, government regulation is always an integral structural element

of the system of national economy. The global practice is based mainly on these instruments of state regulation:

- system of accelerated depreciation;
- tax incentives;
- investment tax credits and investment tax credit;
- various tax incentives that stimulate private investment.

Conclusions. Hence, the conceptual approach to the issue of Ukraine an effective mechanism of state regulation of investment activities in the production and maintenance of housing is that taxes, as in all developed countries should encourage investment rather than complicate their involvement in the economy .

Most levers that helps drastically improve the domestic economy may be the use of methods of tax incentives for investment. This transformation can be carried out in different forms. One of them – a tax credit that provides for installment payment of income tax. This connection is important to develop a mechanism to provide a tax credit allocated to the production of housing at the regional level within the created clusters.

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