Yu. A. Anikina, V. I. Litovchenko
Siberian State Aerospace University named after academician M. F. Reshetnev, Russia, Krasnoyarsk

THEORIES OF ESTIMATION OF DIFFERENTIATION FOR REGULATION OF SOCIAL-ECONOMIC DEVELOPMENT OF THE CITY AGGLOMERATION

Theories of estimation of differentiation of social-economic development of territorial units in city agglomeration are discussed in the article. Approbation of the given methods helped find out successfulness of the regulation of municipal development of administrative-territorial units in Krasnoyarsk agglomeration, set the goals of regional policy on peculiarities of development of the phenomenon of differentiation.

Keywords: regulation, social-economic development, city agglomeration, estimation of differentiation.

To determine successfulness of regulation of social-economic development of administrative-territorial units (ATU) in city agglomeration (CA), to set the goals of regional policy according to peculiarities of development of the phenomenon of differentiation of social-economic development of ATU in CA is possible only at trustworthy estimation of the situation which allows the mechanism of regulation of social-economic development of ATU to function in CA. The given approach lets estimate and analyze differentiations of social-economic development of ATU in CA at three stages, each stage is focused on solving the specific tasks (fig. 1).

At the first stage complex estimation of the level of social-economic development of ATU in CA is conducted. Comprehension of the problems of social-economic development of ATU in CA and working out the ways of solving them become possible when using the data achieved during the analysis of social-economic condition of the unit and revealing the degree of correspondence of factors with the criteria of regulation of social-economic development of ATU in CA. It allows to bring out disproportion and not used possibilities of social-economic development of ATU in CA for further grounding of the choice of regulations means.

As individual index of social-economic development of ATU in CA have different measurements, it is necessary to build integral exponent intending transition to uniform characteristics on the basis of methods of multimeasure assessment. Calculation of the coefficient of deviation of basic indexes of ATU in CA from corresponding indexes of supporting "point of growth" is done with the following formula:

$$X_{ik}^{j}(t) = x_{ik}^{j}(t) / x_{ik}^{n}(t),$$

where j – number of ATU in CA; i – number of the group of indexes; k – number of the index in the group; x – value of index of supporting "point of growth" in CA (criteria of regulation), x – value of index of ATU in CA, t – period of time.

Then integral index of the level of social-economic development of ATU in CA is calculated with the formula:

$$Y_{k}^{j}(t) = \sum_{k=1}^{n} X_{ik}^{j}(t) / n,$$

where n – quantity of indexes in the group.

In the capacity of the main criteria for making decision on support of ATU in CA grouping of ATU according to the level of development is often used. That is why at this stage grouping of ATU in CA according to the level of development is conducted. This helps determine the group of areas with different levels of development (tab. 1).

The given grouping is very important for the choice of ATU in CA using the coefficient of differentiation D_{ik}, defined as ratio of maximum value of the coefficient of deviation of basic index of definite ATU (x^{j}_{ik}max) to minimum value of the coefficient of deviation of basic index of another ATU (x^{j}_{ik}min):

$$D_{ik} = x_{ik}^{j}\ \max / x_{ik}^{j}\ \min .$$

Noting sufficient and constantly growing differentiation of social-economic development of ATU in CA, it is necessary to mention that difference in their development leads to instability, enhances susceptibility of the system to external fluctuations. However, differentiation of social-economic development of ATU in CA is not a threat to the existence of CA as a whole system, and is not an important condition of its development. So presence of differentiation does not say about regression or progress of social-economic processes, it only shows instability of the system and possible changes.

At the same time, for determination of the level of differentiation of social-economic development of ATU in CA it is offered to calculate the coefficient of non-uniformity $K(x,y)$, worked out on the basis of the formula calculating of the coefficient of proportional identity of Imbry–Pardy ($R(x,y)$):

$$K(x,y) = (1 - R(x,y)) \cdot 100\%,$$

$$R(x,y) = \frac{\sum_{i=1}^{n} X_i \cdot Y_i}{\sqrt{\sum_{i=1}^{n} X_i^{2} \cdot Y_i^{2}}},$$

where X_i and Y_i –values of indexes ADU X and Y; n – quantity of indexes used in calculation.

The given coefficient allows to compare two ATUs in CA along the whole complex of indexes. The closer the index of the coefficient to zero, the more similar ATU which are compared according to the level of social-economic development. Zero index shows that characteristics of social-economic development of ATU are identical or their changes happen proportionally for all indexes which are used in the calculation. Building the rating estimation with the help of the coefficient of heterogeneity lets find out similarity of ATU according to indexes and directions of social-economic development.

The third stage is used to assess needs and possibilities of diminishing of differentiation of social-economic development of ATU in CA. It is connected with determination of the characteristics of instability of social-

Table 1

Grouping of ATU in agglomeration according to the level of development

Level of development of ATU in CA	Deviation from supporting "point of growth", %
High	20
Medium	20–40
Low	40 and over

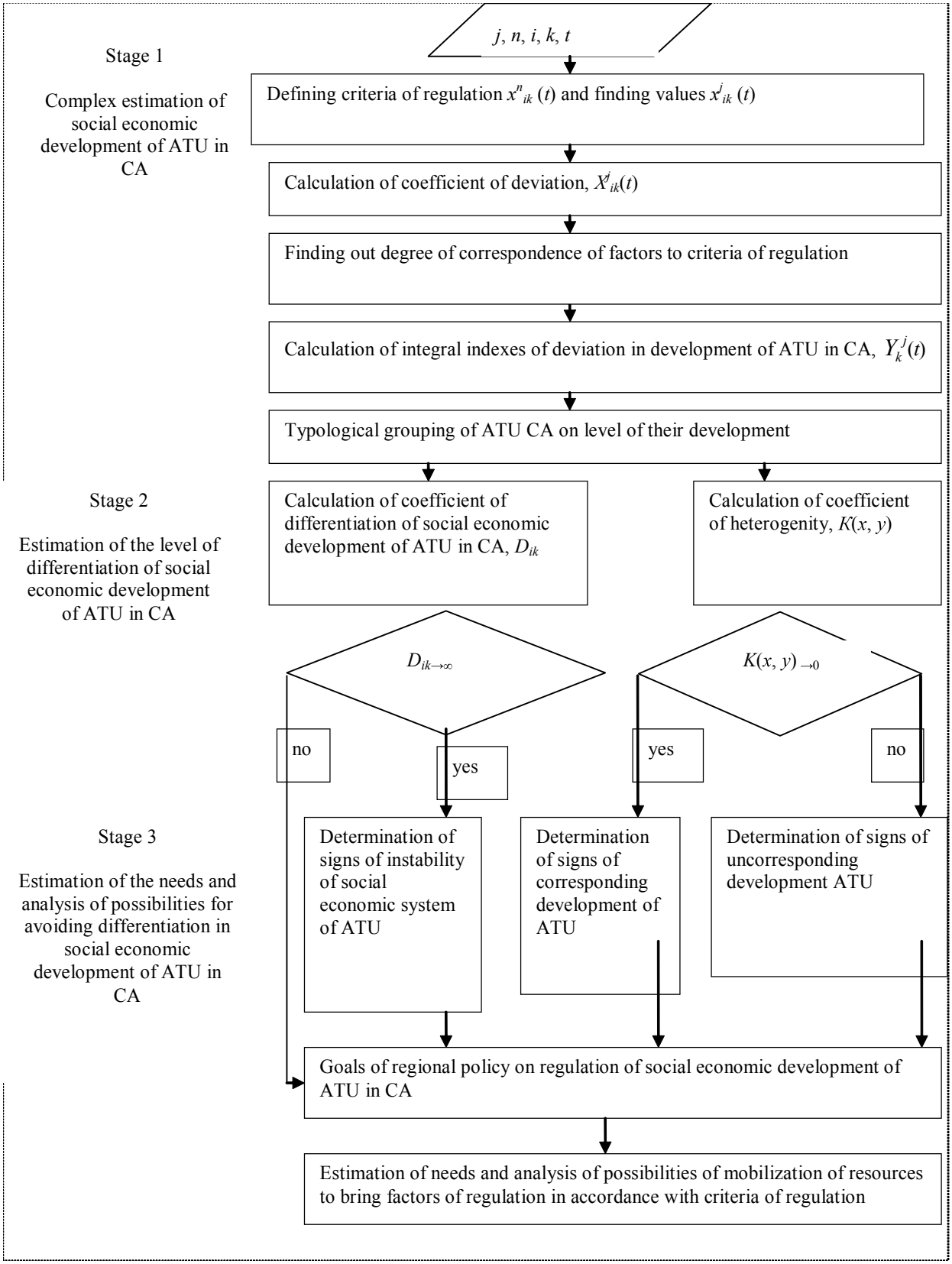

Fig. 1. Algorithm of methods of estimation of differentiation for regulation of social economic development of ATU in CA

economic development of ATU, and also defines characteristics of coordinated and uncoordinated development of ATU. The result of the third stage is assessment of needs and possibility of mobilization of resources to lead factors of regulation in accordance with criteria of regulation.

Such approach gives an opportunity to see the dynamics of growth of ATU in CA, changes of its main parameters, predict and prevent negative changes. It helps find out factual results of regulation of social-economic development of ATU in CA.

Using this approach the authors estimated differentiation of the level of municipal economy development of ATU in Krasnoyarsk agglomeration (KA). During the period 2005–2008 coefficients of deviation of basic indexes of ATU in KA were calculated. On the basis of received coefficients integral indexes of the communal development of ATU in KA were defined (fig. 2). Conducted calculation showed that according to the indexes of the level of communal development of AT Sosnovoborsk is on the first place among ATU in KA, Divnogorsk is on the second place.

Estimation of the level of communal development of ATU in KA allowed to find out groups of ATU with medium and low levels of development. Therefore Sosnovoborsk and Divnogorsk were referred to ATU with medium level of communal development; the rest territories have low level of development. It was also discovered that there are no essential changes in the level of communal development of ATU in KA. It let us make a conclusion that there is no effective regional policy.

Estimation of the level of differentiation showed considerable disproportioning in the level of communal development of ATU in KA: coefficient of differentiation is 40 %. This fact gives evidence of absence of balanced communal processes among ATU and of low results of structural policy of ATU in KA.

To find similarity or differences in communal development, ATU were compared in pairs on all parameters (tab. 2). System of indexes was taken into account at the calculation. Their dynamics shows communal economy of the territories. According to the results Divnogorsk and Sosnovoborsk, having the lowest coefficients of heterogeneity, considerably differ from other ATUs in KA. That fact that supports the results of studying their location with the help of integral indexes and demonstrates the greatest homogeneity with the indexes of Krasnoyarsk. Coefficients of heterogeneity in the pairs Emeliyanovskiy territory – Bereysovskiy territory and Sukhobusimskiy territory – Manskiy territory are close (0.8 and 0.7). The received coefficients show similarity in indexes and tendencies of development.

After estimation of differentiation of the level of communal development of ATU in KA it was found out that territories with medium level of communal development have essential agglomeration potential. The goal of the policy of regulation of communal development in these cities should be connected with development of their personnel and resources potential. In future these territories can also give essential growth of their own taxes basis. Territories with low level of development are

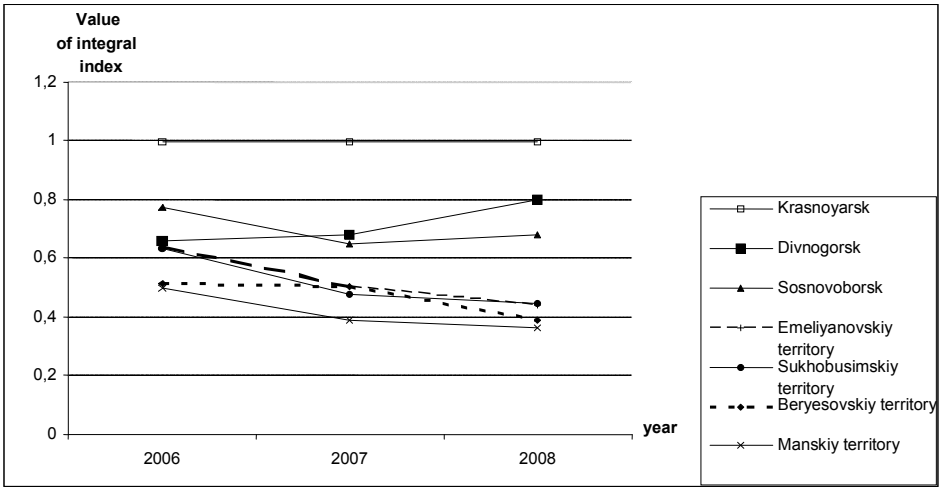

Fig. 2. Dynamics of deviation of integral index of ATU in CA from integral index of supporting "point of growth"

Table 2

Coefficients of heterogeneity of communal development of ADU in KA

	Coefficients of heterogeneity						
	Emeliyanovskiy territory	Sukhobusimskiy territory	Beryesovskiy territory	Manskiy territory	Krasnoyarsk	Divnogorsk	Sosnovoborsk
Emeliyanovskiy territory	–	–	–	–	–	–	–
Sukhobusimskiy territory	0.8	–	–	–	–	–	–
Beryesovskiy territory	0.8	0.6	–	–	–	–	–
Manskiy territory	1.0	0.7	1.3	–	–	–	–
Krasnoyarsk	4.2	5.5	4.3	5.7	–	–	–
Divnogorsk	2.3	3.1	1.2	3.4	3.2	–	–
Sosnovoborsk	2.5	2.4	1.7	3.1	2.5	0.7	–

characterized by low development of communal infrastructure. In future these territories will need budget support. This situation requires constant monitoring. There are almost no internal reserves of communal development and taxes basis in the territories. It is necessary to work out mechanisms to attract investments. The main projects in this case are importance of development of modern engineering infrastructure of agglomeration including such facilities and services as energy and heat supply, sewerage, and water supply.

Data obtained after estimation of differentiation of communal development of ATU in KA must become informational basis for making managerial decisions in realization of regional policy.

N. B. Grosheva
Irkutsk State University, Russia, Irkutsk

DEFINITION OF PARTICIPANTS OF THE INVESTMENT PROJECT

For success of any investment project its careful planning is necessary. For this purpose it is necessary to consider interests of all persons which can affect its execution and results. Such persons form a social network of the project, some aspects of definition of such network are described in the present article.

Keywords: investment project, a monetary stream, social network.

Recently the term "the investment project" is used frequently. It means that the company gives great significance to the development of the manufacture, new manufacture, or gets assets, and expects to receive thus positive monetary stream or other material and non-material benefits.

There is a set of ways to estimate investment projects, one of them is the way of estimating the net present value of the project. However from the point of view of terminology in some cases use of the term "the project" is incorrect.

There are some definitions for what project is. The widest one is "limited on time and the unique actions focused on achievement of a specific goal".

The requirement of uniqueness differentiates projects and usual operational activity, and does not mean that the given actions are absolutely innovative. Actually it denotes that within the given time interval, with such purpose and such restrictions the actions are carried out unitary.

As for the project limitation on time, it is important that there are fixed dates of the project beginning and ending. Without precisely certain limits of time it is not possible to plan resources, including financial ones, and also impossible to make up the schedule of works.

The most important attribute of the project is the purpose (and defining the result of the project). One of the mistakes of investment projects formulation is orientation on getting the financial result (for example the profit). The result should be quantitatively measurable and unequivocally determined, and in case of defining the profit as the purposes of the project performing group of different projects are possible (for example if at the industrial enterprise the purpose of getting 1 million roubles of the profit from expansion of activity, it can be both usual activity as well as new business).

Thus the owner of the project does not limit executors who can independently define and realize projects.

However here is the so-called agency problem, i. e. a mismatch of the purposes of the proprietor of the project can affect the project result and the project executors.

To illustrate this problem we shall explain what groups of persons participate in the project and what the so-called "usability" or utility of the project denote.

First of all it is the customer of the project, or the proprietor of the project. It is necessary to specify, that the customer of the project is not always the owner of the enterprise where the project is realized. For example, for projects to improve the ecological conditions in the city or the region the customers of the project are the local authorities or the public, i. e. group of persons that use directly the result of the project. However in case the project is realized to expand the business or grow the cost of the concrete business by the customer may become the owner or owners of the enterprise. The interest of the project customer is targeted as a rule at the purpose achievement and results in terms of all restrictions, and probably economy of resources. If the purpose of the project can be achieved without finishing up the project and carrying out all the works of the project, then it can be stopped. Except for that customers can be interested in "long-term stability" results of the project. For example, if it is the ecological project, then the long-term preservation of ecological well-being is of great interest. Hence statement of the rigid purpose of the project and definition of desirable results and restrictions refer to the powers of the project proprietor.

Executors of the project is a group of persons who directly realize the project. Their purposes can not refer directly to the purpose of the project, for example, the hired managers involved exclusively in the project, are interested in finishing up of the project not later than target dates and with the stipulated quality only in case there are expectations of career growth or monetary compensation. If executors already work at the enterprise and results of the project can bring in their activity certain changes, for example, reduction of some workers after automation of the manufacture, the executors will be not interested in successful finishing up of the project.

Users of the project are people who will directly use results of the project (to work for a new manufacture, to