THEORETICAL AND METHODOLOGICAL APPROACHES TO THE FORMATION OF A MODERN SYSTEM OF NATIONAL AND INTERNATIONAL ENTERPRISES, ORGANIZATIONS AND INSTITUTIONS’ DEVELOPMENT

Collective Scientific Monograph
FINANCIAL POTENTIAL OF UNITED TERRITORIAL COMMUNITIES: ASSESSMENT METHODOLOGY

ABSTRACT:
In the context of reforming local self-government, the issue of economic and administrative independence of territorial communities, where the financial potential plays a key role, becomes important. The paper substantiates that the financial potential plays a decisive role in ensuring the social welfare of the residents of the community and attracting funds from domestic and foreign investors. The purpose of the paper is to develop a methodology for assessing the financial potential of a united territorial community (in Ukrainian OTG) based on a taxonometric approach. The study of this issue was carried out in the following logical sequence: the information base of the study was formed, the indicators were normalized, the weight coefficients for each of the indicators were determined, the "reference" values of the indicators were calculated, and the quantitative and qualitative assessment of the financial potential of the territorial community was carried out. The use of the taxonometric approach to assessing the financial potential of territorial communities will make it possible to quantify the lag from the reference, which corresponds to the best values of each of the indicators under study. The resulting methodology can be practically valuable for local governments to determine the current financial capacity of the territorial community and to search for reserves to increase financial resources.

INTRODUCTION.
In the context of decentralization and the formation of a new system for organizing financial relations between central and local government agencies, it is especially important to determine the level of the financial potential of territorial communities and to search for reserves for increasing it.

The financial potential of the united territorial communities implies an organized set of available own and borrowed, as well as possible, financial resources, used to finance their needs for implementing tactical and strategic

1 D.Sc (Economics), Associate Professor, Economic Cybernetics Department
Sumy State University, UKRAINE

2 Ph.D (Economics), Associate Professor, Economic Cybernetics Department
Sumy State University, UKRAINE

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development goals. Within the framework of this study, it is feasible that the financial potential of the united territorial community includes not only budgeting indicators, but also incomes of the population and economic entities of the real sector of the economy, financial resources of the credit and financial institutions of the territory, international targeted programs, charitable assistance, etc. The financial potential plays a decisive role in ensuring the social welfare of the community's residents and attracting funds from domestic and foreign investors.

**METHODOLOGY.**

Determination of the financial potential of the united territorial communities provides for the assessment of the following parameters:

- the actual level of financial support of the united territorial communities;
- the existing potential of stable functioning united territorial communities;
- the opportunities to build up financial potential, taking into account the current state of development of national and regional economies.

Thus, an algorithm for assessing the indicator of the financial potential of the united territorial communities using the taxonometric method has been developed. The taxonometric method is one of the most effective tools for multilevel analysis, which, as a result of a series of successive stages, provides for the calculation of a generalizing indicator based on comparing actual indicators with the corresponding characteristics of a certain reference indicator [1,2]. This approach is quite justified in the market conditions of management because everyone strives to be successful in all key indicators, outstripping leading competitors [3].

The main stages of the proposed method are:

1. Formation of an information base for assessing indicators that directly or indirectly affect the financial potential of the united territorial communities and present them in the form of a data matrix.
2. Determination of incentives and disincentives.
3. Normalization of the system of indicators to bring them to a single comparable form.
4. Determination of the weight factors for each of the indicators.
5. Calculation of "reference" quantitative characteristics of the financial potential of the united territorial communities.
6. Calculation of quasi-distances by comparing normalized absolute and relative economic indicators with the "reference" values
7. Quantitative assessment of the financial potential for a specific united territorial community.

8. Qualitative interpretation of the results obtained to assess the financial potential of the united territorial communities.

A peculiarity of the implementation of the taxonometric approach is the presentation of the calculated indicators in the form of a matrix having the following form:

\[
K = \begin{pmatrix}
  k_{11} & \cdots & k_{1j} & \cdots & k_{1n} \\
  \vdots & \ddots & \vdots & \ddots & \vdots \\
  k_{i1} & \cdots & k_{ij} & \cdots & k_{in} \\
  \vdots & \ddots & \vdots & \ddots & \vdots \\
  k_{m1} & \cdots & k_{mj} & \cdots & k_{mn}
\end{pmatrix}
\]

where \(K\) – the matrix of economic indicators;
\(i = 1 \div m\) – number of the corresponding economic indicator;
\(j = 1 \div n\) – number of the corresponding \(j\)-th subject;
\(k_{ij}\) – the \(i\)-th economic indicator for the \(j\)-th subject.

This type of presenting input data for assessing the economic process makes it possible both to concentrate and visualize the information base of the model and to simplify calculations by performing operations on matrices.

The following criteria were selected to assess the financial potential of the united territorial communities [4]:

- own income of the general fund per 1 resident (the ratio of the volume of receipts of own income of the general fund without transfers to the number of residents of the corresponding OTG) – \(i_1\);
- own income of the special fund per 1 resident (the ratio of the volume of receipts of own income of the special fund without transfers to the number of residents of the corresponding OTG) – \(i_2\);
- the level of subsidization of budgets (the ratio of the volume of the basic or reverse subsidies to the total amount of income of the general fund of the budget of the OTG with subsidies, but excluding subsidies from the state budget) – \(i_3\);
- additional subsidy from the state budget to local budgets for the expenses transferred from the state budget for the maintenance of educational and health care institutions per 1 resident – \(i_4\);
- educational subvention per 1 resident – \(i_5\);
- medical subvention per 1 resident – \(i_6\);
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- the value of the property of public utilities per 1 resident – \( i_7 \);
- the cost of residential and non-residential premises owned by the territorial community per 1 resident – \( i_8 \);
- cost of land fund per 1 resident – \( i_9 \);
- natural resource endowments – \( i_{10} \);
- the amount of savings of the OTG population – \( i_{11} \);
- investment resources of business entities, international organizations and foreign entities – \( i_{12} \);
- the volume of tax and non-tax revenues outside the local budget of the territorial community – \( i_{13} \);
- the volume of reserves of material and financial resources of the local government system – \( i_{14} \);
- the amount of grant aid – \( i_{15} \).

All variables should be divided into incentives and disincentives. The basis of this distribution is the characteristic influence of each of the indicators on the financial potential of the united territorial communities. Features that have a positive effect (stimulation) on the general level of the financial potential of the united territorial communities are called incentives, features that have a negative impact are called disincentives. This separation is the basis for constructing a vector – a reference, as well as choosing a method for normalizing the values of indicators. Within the framework of the study, all indicators under study are incentives.

In addition to the matrix, within the framework of the taxonometric method, two vectors are determined: \( X = (x_1 \ldots x_j \ldots x_n) \) – reflects the weight of the i-th indicator and \( S = (s_1 \ldots s_j \ldots s_n) \), which elements take on the values "-1" (if the i-th indicator is a disincentive) and "+1" (if the i-th indicator is an incentive).

Given that the indicators that are included in the observation matrix are heterogeneous, since they describe different properties of objects and differ in units of measurement, it is necessary to standardize them. Thus, this means that all indicators should be reduced to one numerical dimensionless integral indicator in the range \([0; 1]\). Therefore, it is feasible to bring economic indicators into a comparable form within the next stage (third stage) of the taxonometric approach. This transformation occurs under the following formula:

\[
k_i^N = \frac{k_i - \bar{k}_i}{\sigma} \quad (2)
\]
The theoretical and methodological approaches to the formation of a modern system of national and international enterprises, organizations, and institutions' development involve several steps.

The next step is to determine and justify the weighting coefficients. The most common method is the use of expert judgment to assess the weight of each baseline indicator. The Fishburne's rule is used for this purpose, allowing the determination of the weights of the indicators based on their ranking.

If the system of indicators is ordered according to the degree of decrease in their weight, the weight of the \( i \)-th indicator \( (k_i) \) should be determined as follows:

\[
k_i = \frac{2 \times (N-i+1)}{(N+1) \times N},
\]

where \( k_i \) - the weight factor of the \( i \)-th indicator of the population;
\( N \) – the number of indicators of the population;
\( i \) – the ordinal number of the population

At the fourth stage, the "reference" is being formed, which is proposed to be presented in the form of a matrix-column:

\[
\begin{pmatrix}
l_{1et} \\
\vdots \\
l_{iet} \\
\vdots \\
l_{met}
\end{pmatrix}
\]

where \( l_{iet} \) – the normalized \( i \)-th economic indicator of the reference subject.

Thus, for each \( j \)-th feature in its column of the matrix of standardized features, we find the "best" value of the \( l_{oj} \) feature among all \( m \) units, which serve as the coordinates of the reference vector [5]:

\[
l_{oj} = \begin{cases} 
max l_{ij}, & \text{якщо } j \in I_c (\text{стимулятор}); \\
min l_{ij}, & \text{якщо } j \in I_d (\text{дестимулятор}); 
\end{cases}
\]

Based on the assumption that it is impossible to form a reference level of the financial potential of the united territorial communities, it is proposed to correct each of the indicators by a semi-standard deviation (formula 5):

\[
SS_{VAR}^{\pm} = \sqrt{S_{VAR}^{\pm}}
\]

In contrast to variance, variation, and standard deviation, semivariation allows to separately take into account both positive and negative deviations of individual values of a random variable from the expected value.
Based on the need to increase the financial potential of the united territorial communities, we have chosen for the calculation a positive semivariation ($S^+_VAR$), which characterizes the mean square of deviations of those values of the indicator that are greater than the average:

$$S^+_VAR = \frac{1}{p^+} \sum_{i=1}^{n} (x_i - M(x))^2 \cdot P_i \cdot a_i,$$  \hspace{1cm} (6)  

where $P^+$ – the sum of the probabilities for market conditions under which the value of the indicator is greater than the average;  
$x_i$ – the value of the relevant indicator;  
$M(x)$ – the average value of the indicator;  
$a_i$ – an indicator of deviations that are greater than the average.

Since we have proposed to take into account the semi-standard deviation as a parameter characterizing the growth potential, then the assessment of the "reference value" is carried out under the following formula:

$$l_{oj} = \begin{cases} 
max_{i} l_{ij} + S S^+_VAR_1 & \\
min_{i} l_{ij} - S S^+_VAR_1 & \end{cases}$$  \hspace{1cm} (7)  

The implementation of the next stage (sixth stage) of the method under study involves calculating the taxonomic indicator by comparing the distance between individual observations and the reference vector based on the following formula:

$$KV_j = \sqrt{\sum_{i=1}^{m} (l_{ij} - l_{oj})^2},$$  \hspace{1cm} (8)  

where $KV_j$ – quasi-distance between $j$-th and "reference" subject

The next step is to calculate the average distance between observations:

$$\overline{KV}_j = \frac{1}{m} \sum_{i=1}^{m} KV_j,$$  \hspace{1cm} (9)  

The seventh stage is the calculation of the standardized deviation of the maximum possible deviation from the consolidated standard ($\overline{KV}_j$), constructed dynamic indicator of the development level ($D_0$):
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\[
S_o = \sqrt[2]{\frac{1}{m} \sum_{i=1}^{m} (KV_j - \overline{KV}_j)^2},
\]

\[
\overline{KV}_j = KV_j + 2S_o
\]

\[
D_i = \frac{KV_j}{\overline{KV}_j}
\]

The resulting indicators are used to calculate the taxonomic coefficient under the formula (11) (ranges from 0 to 1) to assess the average value of features that quantitatively characterize the volume of the financial potential of the united territorial community achieved over a certain period:

\[
K_i = 1 - D_i
\]

The taxonomic indicator synthetically characterizes changes in the values of the features of the groups under study. The interpretation of this indicator is as follows: it takes high values at high values of incentives and low values – at low values of incentives [6].

The final stage is a qualitative interpretation of the financial potential of the united territorial community by implementing the following steps:

– identification of homogeneous groups of characteristics of the financial potential;

– determination of the lower \((K^N)\) and the upper \((K^V)\) limit of the financial potential by adjusting each value to a positive semi-standard deviation in terms of selected homogeneous groups:

\[
K^N = K - SS^+_VAR
\]

\[
K^N = K + SS^+_VAR
\]

– formation of an estimated interval, the limit boundaries of which are set based on the maximum and minimum possible values determined for each indicator:

\[
K^N = [K_{min}; K_{max}]
\]

– determining the qualitative level of financial potential of the united territorial community: low, medium, above average and high:

\[
K^N = K - SS^+_VAR
\]
CONCLUSION.

Improving the quality of life of citizens and creating conditions for ensuring the intensive development of the united territorial community requires the local authorities to effectively use the financial potential of the territorial community by looking for growth reserves for both the volume of tax revenues and attracting grants, loans and investment funds to the community budget. The use of the taxonomic approach to assessing the financial potential of territorial communities makes it possible to quantify the lag behind the standard, which corresponds to the best values of each of the indicators under study. The resulting methodology can be practically valuable for local governments to determine the current financial capacity of the territorial community and to search for reserves to increase financial resources. Further research will be focused on determining the current level of financial potential of the united territorial communities in Ukraine and making a forecast.

REFERENCES:


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