

Stability of Interregional Trade and Economic Relations as the Factor of Competitiveness of Territories

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Abstract: The article studies competitiveness of regional territorial systems. Based on generalization of a wide range of sources and literature, the authors revealed and normalized factors and criteria of territory competitiveness, formulated their concept of evaluation of territories' competitiveness, which is based on the suggestion to use the stability of interregional trade and economic relations as an indicator of territory competitiveness. The article also suggests a methodology of evaluation of the stability of interregional relations of the constituent entities of the Russian Federation based on the study of goods circulation.

Key words: Competitiveness • Factors of competitiveness • Interregional relations • Goods circulation • Core of the area of interregional cooperative interaction

INTRODUCTION

Competitiveness is one of the important elements of market economy; therefore, specialists have for a long time been showing keen interest to the theoretical conceptualization of this scientific category. A wide range of scientific literature works is dedicated to analysis of competitiveness of territorial economic systems. Conceptual provisions that can serve as the theoretical basis of the analysis of interregional competition were proposed and reasoned both in works by the classics of the economic science and in contemporary studies [1-10].

Currently, scientific literature offers a great variety of interpretations of the *competitiveness* concept. But the most suitable definitions are those, which associate the competitiveness of an economic entity, whether a company or a territorial unit (country, region, municipality) with its ability to enter the internal market, the markets of other regions of the country and the world market and to maintain and increase its share in these markets.

Segmentation of the scientific category, which we are considering, allows to detect the differences between such its forms as territory competitiveness and company (enterprise) competitiveness. Despite the existence of

certain interrelations between them, they differ from each other by the entities of competitive relations, by the system of factors, which influence the competitive position of the market players, by criteria of evaluation of their competitiveness and by other parameters. This means that operating methodological tooling and approaches that are used for analysis of a company's (an enterprise's) competitiveness is not completely acceptable at analyzing competitiveness of territorial systems.

Methodologically, it is very important to distinguish specific features of the interregional competition. The peculiarity of interregional competition, first of all, resides in the role that the regions play in the administrative and territorial structure of the state. The problem of interregional competition becomes actual for countries with democratic federative structure, in which regions act as independent participants of economic relations, including those in the sphere of implementation of the interregional trade and economic cooperation.

The ability of territorial units to position themselves in terms of competitiveness is influenced by the existence of certain factors, which allow them to take more beneficial position in the market than other regions. At that, it is to be noted that competitive advantage, which

a region gains due to using and combining the standard set of factors, gives it a short-term competitive advantage. Very soon, the competitive advantage acquired in such a manner will be leveled off by overall distribution of innovations.

In order to provide a territorial unit with a competitive advantage on a long-term basis, a factor needs to have a unique and matchless property unapproachable for other competitive parties. M. Porter described such a factor as *highly specialized* and associated its creation with long-term investments [11]. It provides a region with an exclusive competitive advantage, due to which its position in interregional markets goes beyond competition.

And as competition is, first of all, a struggle for sales markets, interregional competition must be studied through the systemic analysis of interregional trade and economic relations of the territorial unit. The tangible forms of trade and economic relations between territorial entities of a state include the circulation of commodities, the migration between territories and the cultural and information exchange.

By forming a stable system of the interregional trade and economic relations around them, territorial units create necessary prerequisites for improvement of their own competitiveness and provide their internal local market with all necessary factor resources and their manufacturers with the sales market. If we rephrase the renowned formula by F. von Hayek "Competition as a discovery procedure" [12], we can say, "Competition is the procedure of cooperation".

The problem of the interregional trade and economic interaction of internal territorial systems is especially important for large countries. Their stability and durability are the critical attributes of the competitiveness of the whole national economy [4].

Thus, the ability of a territorial unit to form a stable area of interregional trade and economic interaction around themselves is the most important criteria for assessment of the competitiveness of a regional economy.

MATERIALS AND METHODS

When scientific research concerns studying the system of interregional trade and economic relations, particular attention is paid to the analysis of goods circulation in the regions. However, goods circulation values do not allow to determine the qualitative aspect of competitive relations, which are being established between territorial economic systems.

In this view, the existing methodology and the criteria of the analysis of interregional competition need to be revised and supplemented.

The suggested modeling of the evaluation of competitiveness of territorial systems through the assessment of stability of interregional trade and economic relations assumes that all operational territorial units (countries and regions of the countries), which participate in the trade and economic interaction with the base region (i.e. the region, which is the object of the study), at further consideration are broken up into a series of interrelated groups depending on the intensity of their participation in mutual goods exchange.

According to this concept, the regions, which participate in the interregional trade and economic interaction with the base region (i.e. the region, which is the object of the study), are broken up into four groups depending on the extent of their participation in the goods exchange.

- The first group includes all regions, the share of which in the import and export volumes in the goods circulation of the base region is equal to or exceeds a certain level α (in relative units or percentage).
- The second group includes regions with the goods exchange equal to or exceeding α by the volume of either import or export only. At that, we need to keep to the sequence of gradation with respect to the basis of logical gradation - the value of the α level.
- The third group includes regions, the share of which in the goods circulation of the base region is less than the certain threshold value α by both import and export.
- The fourth group comprises all other regions, which have the share in the goods circulation of the base region less than α , but which can be represented in the goods circulation by export or by import with account for the preset level of significance.

Body of the Work: In order to determine the most important properties of the studied object (goods traffic), it is necessary to follow the procedure of building levels sets, to do which we will use the property of the sets of a level.

The concept of the set of a level α of a fuzzy set X (the total cost of the goods circulation between countries or constituent entities of the Russian Federation and the base region) is understood as a set in its ordinary meaning, which consists of elements (countries or regions) $x \in X$, the degrees of membership $\mu_x(X)$ of which

correspond to the fuzzy set X with the degree less than the given number α , which can be expressed in the following way:

$$X^\alpha = \{x \mid x \in X, \mu_x(x) \geq \alpha\} \quad (1)$$

The target value of the index of the level set α for each base region can be determined using the following algorithm:

- A certain initial level α is preset (e.g., 1% or 0.01 in relative units);
- Classes (groups) are formed according to the rules provided in Clauses 1 to 4;
- If the representation of groups of countries is not satisfactory (some classes have not been filled or have been filled insufficiently), the α value is to be changed in preset increments towards its increase or decrease;
- Upon achievement of the sufficient for analysis degree of completeness of formation of all groups (classes) with the solution accuracy preset for each class and minimum risk to lose even small volumes of goods circulation within the analyzed set of entities, the algorithm stops.

Computer processing of this algorithm resulted in $\alpha = 0.89\%$. As the reliability of statistic tables traditionally equals to 90%, 95% and 99% (or a 10%, 5% and 1% error accordingly), accounting of such level threshold as $\alpha = 0.89\%$ does not contradict the computation accuracy traditionally used in the socio-economic statistics.

Thus, the suggested scheme of differentiation of goods circulation between countries and regions and the base region allows to consider the conceptual aspect of the international and interregional interaction qualitatively, i.e. it describes a group (a class) of countries and regions prioritized by the volume of goods exchange and a group of regions, which play the role of outsiders in these terms.

According to the above, the battery of first to fourth groups of territorial units differentiated by the given criterion forms an area of interregional trade and economic relations around the base region. An area of interregional trade and economic relations is understood as a group of regions (territorial units), with which the base region has a certain (even the smallest) level of trade and economic relations.

The suggested scheme of the problem solution does not allow to analyze the stability of the interregional

relations dynamics directly. But, it is quite possible to do it by sequentially applying it to the data of statistical series. For this purpose, the suggested method needs to be supplemented with the system of rating assessment of the regions, which are included in the area of cooperative relations of the base region, both for a specific year and for the considered period as a whole in the form of sequences of overall rating estimates.

The suggested scale of differentiation of countries and regions shows that the entities of the first group are of the highest importance for the economy of the base region in terms of the role that they play in the system of its interregional interaction. The importance of countries and regions of the second, third and fourth groups of the economy of the base region is notably less. Accordingly, the regions in the first group have the highest rating of importance for the economy of the base region (the first place in the rank scale), the rating of the regions of the second group is slightly less (the second place), etc. to the lowest level of the importance rating (it is the fourth place in the suggested scheme taking into account the preset number of groups).

However, as it is more convenient to use the numerical scale rather than order scale for the following analysis of the importance of groups (clusters), it is necessary to provide reflection of τ sequence numbers (ranks) R in the weights W :

$$\tau : R > W \quad (2)$$

This particularly gives grounds for further application of rankings in algebraic operations on the numerical scale, on which the weights of the studied components are displayed subject to the valuation rule.

For the suggested problem, the weights- $\sum_{i,j} w_{ij}, i = \overline{1, n}$, where n is the number of the weighed components (here, the groups of countries or regions according to their participation in the goods exchange – RT), i is the number of the component and j is the year, during which the observation took place.

In this view, display of (2) is the transition from estimates in the rank scale to the numerical scale and it should be preferably calculated using the Fishburn transformations [13] related to transformation of the entropy of second type of K. Shannon.

Then, the following weights will be assigned to the four formed groups (classes):

$$w_1 = 0.40, w_2 = 0.30, w_3 = 0.20, w_4 = 0.10.$$

If we denote the interaction of countries and regions with the base region in the current year by Q_j and the total goods circulation in each group (class) by $x_{ij}, i=1,4$, the rating of the region for the current year $X_j, j=1, N$ (where N is the number of years in the considered period) may be estimated as 4

$$X_j = \sum_{i=1}^4 x_{ij} \cdot w_{ij} \quad (3)$$

$i=1$

During the monitoring, the annual calculations by formula (3) are carried out in the units of the variable x or, for convenience, we can use their multiple values [13, pp: 23-25].

CONCLUSION

The carried out research is based on the short-term dynamics of the stability of interregional trade and economic relations, which cover the 2006 to 2008 period, i.e. the time before the economic crisis. The empiric basis of the research were the data of the governmental statistic authorities [14] processed by the procedure described above.

Five constituent entities of the Russian Federation were selected with the purpose of analysis of the stability of interregional interaction of Russian regions and their competitiveness: the Republic of Tatarstan, the Republic of Bashkortostan, the Sverdlovsk Region, the Chelyabinsk Region and the Chuvash Republic [15-19].

Based on the results of processing the empirical database, the authors have come to a conclusion that all of the mentioned regions have already formed their own areas of interregional cooperative interaction, which have a distinct core, the main attribute of which is the stable participation of the territorial units included in it in the trade relations with the base region. More than half of the share of interregional goods circulation of the base regions accounts for the core of the area of interregional interaction: for the Sverdlovsk Region, it is nearly 70%; for the Republic of Tatarstan and Chelyabinsk Region, it is within 65%; for the Republic of Bashkortostan, it is about 55%; and only for the Chuvash Republic, it is less than 50%.

At the same time, the core of the area of cooperative interaction was noticed to weaken in the three of five regions (the Republic of Tatarstan, the Sverdlovsk and Chelyabinsk Regions). With all other conditions being

equal, it evidences the weakening of the competitive positions of the territories in the internal market. An opposite trend was shown by the Republic of Bashkortostan and the Chuvash Republic.

Summary:

- Each territorial unit forms its own area of interregional trade and economic interaction around itself.
- Inside this area, there is kind of a core of the area of interregional interaction, which evidences the ability of the region to refrain other regions around itself, i.e. be competitive.

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