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ON THE SUSTAINABILITY OF REGIONAL COMPETITIVENESS DEVELOPMENT CONSIDERING RISK

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Abstract. The main goal of the paper is to analyse methodical and practical aspects of country (region) competitiveness sustainable development strategy and its implementation means. Such an innovative problem has raised a lot of original tasks and a need for developing corresponding solution methods. Today definitions of development and sustainability often go together analysing global, regional and local processes. Indeed, in this case the definition of competitiveness, as well as the definition of development sustainability require adequate interpretation and quantitative assessment. In the paper, country (region) competitiveness measure is assumed as three-dimensional indicator, which depends on the fields of activity, dominating in the country, international economic relations and legal, financial, ecological, natural resources and geographical location environment competitiveness. An assumption is made that it is possible to evaluate quantitatively general competitiveness subject to three mentioned components competitiveness, as well as the competitiveness of every component, subject to the competitiveness of its components, based on generally accepted methods or with the help of expert means. Another assumption is made, that there exist quantitative dependencies among components competitiveness increases and amount of costs required to obtain them. As the instrument of the funds accumulated and developed for integrated country competitiveness indicator increase, evaluation and optimal allocation, the adequate for the decision results reliability assessment portfolio theory is selected, which allows assessing reliability of development possibilities under different levels of risk. Success in risk management is supposed to be factor of the highest importance to tackle sustainability at country's competitiveness development. Final structurisation of expert decision-making support system principles is discussed when applying the system to competitiveness and risk management.

Keywords: competition and competitiveness, country's or regional competitiveness, stochasticity of competitiveness characteristics and outcomes, sustainable competitiveness, management of sustainable competitiveness.

1. Multi-aspect of competitiveness conception

Competitiveness is a market feature to give the right to manage and assess the society resources primarily to those who use them most efficiently. In different economic or management encyclopedias and vocabularies, competition is described as a contention of producers and traders for better farming and goods' realisation conditions as well as for the entrench in the market, noting that competition stimulates culture development of economics and management and leads ineffectively working producers to bankruptcy.

In this description the main point of competition is revealed, but for identifying the competitive producers or characteristics of their systemic view towards competitiveness factors or circumstances upholding competitiveness, costs and outcomes of factors to reach certain level is needed. Still identification of such system, revealing levels of competitiveness factors, needed means and extent of costs, as well as integrated interaction outcomes of these factors, is a difficult problem and difficulty grows as the competing subject changes, ie when we shift from separate subject to overall region or country as a subject (Aiginger 2006). Of course, the content of competitiveness conception can and should be different as the subject itself changes, as well as the activity environment of this subject.

Development of competitiveness – it is the identification of competitiveness factors and their appearance circumstances, – and creation and realisation of their fostering and development mechanism. Sustainable competitiveness development or competitiveness sustainability insurance – it is the realisation of above-mentioned circumstances and mechanisms, after choosing a certain competitiveness development guarantee and risk management tools.

For countries, where resident business does not dispose higher technologies, or countries which do not have strategically important natural resources and which have just soaked up fundamentals of market economics (eg Lithuania, Latvia), it is necessary to insure that every business unit, every decision of government, every feet of its territory would become competitive and completely responsible for their survival and value, if these countries want to become equal EU members (Poland Competitiveness... 2007; Tumpel-Gugerell 2007). Along with that, the sustainability of the competitive powers growth is the cornerstone of success.

2. Regional (country's) competitiveness and sustainability of competitiveness

Even inattentive consumer noticed that in each group of goods or services in many places of the world only a small number of companies dominates, at that time goods and services of other companies have more difficulties to get their share of market (Von Furstenberg 2007). Actually, not in every country you will find a huge number of well-known companies and their affiliates. What are the obstacles for other firms and countries, where vast number of world-known producers operates, to penetrate the markets under discussion? It's hard to put all reasons in a short paper, but in many cases we meet facts that competitiveness organisation in those firms and environment, stimulating competitiveness model of biologic environment, where one or different types of organisms are competing for the same existence conditions and find compromise or win, practically not visually changing and, what is most important – not changing their existing environment. Such strain of competition is especially dangerous for countries, having scanty heritage of cumulate wealth and organisational abilities.

According to M. Porter, 1998, who generalised the long-lasting investigation in 10 eco-

nomically leading countries, national prosperity does not simply come from natural resources, available labour force, percent norms or buying power of national currency as the classical economics claim. The competitiveness of a country depends upon its ability to make market participants efficiently use available resources, as well as upon its ability to introduce innovations and positively change environment to guarantee the development sustainability. The results of incurring pressure and demands of a market help companies increase their advantages in the competition war with the strongest competitors of the global market. These companies have advantage of existing strong local competitors, aggressive suppliers and demanding local consumers (Porter 1998).

In modern economics, as the competition in the world is increasing, the role of country (government) becomes more and more important. As a rule, competitive fight is turning more to the side of creation and knowledge assimilation, so the role of a country grows. Competitive advantage is being created and maintained through processes, which are strongly localised. Difference of national values, structure of evolution – everything brings a certain contribution on the way to successful competitiveness. Huge differences exist in competitiveness structure of each country, because it is impossible for a country to be competitive in all or most of the fields. Specific countries reach better results in certain fields, because their inner conditions are more favourable, more dynamic and prospective.

For what reasons do specific companies, established in certain countries, manage to realise key innovations? Why they keep on walking down the progress road, keep on looking for more complicated sources of competitive advantage? What lets them fight difficulties and to bring innovations and changes, which usually help to win? The answer to these questions can be found in 3 country's attributes, that each of them and altogether constitutes the base of country's competitive advantages, the area, which is created and maintained by the country for its branches. These are the attributes:

1. Environment adequacy for training competitiveness.
2. Technological and organisational perfection of the fields of activity.
3. Utility and efficiency of the international relations.

These factors along with the regional features most often guarantee regional resources, labour qualifications for the selected field of activity. They also, in general, determine the formation of national environment, when company is set up and learns to compete (Fig. 1).

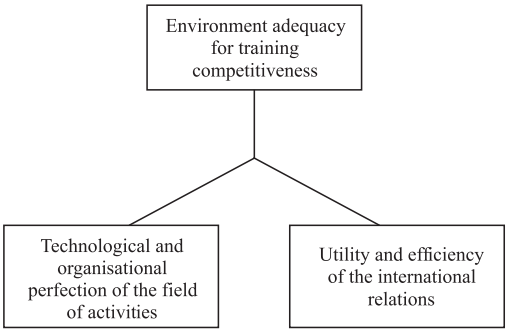

Fig. 1. Determinants of competitive advantages of a country

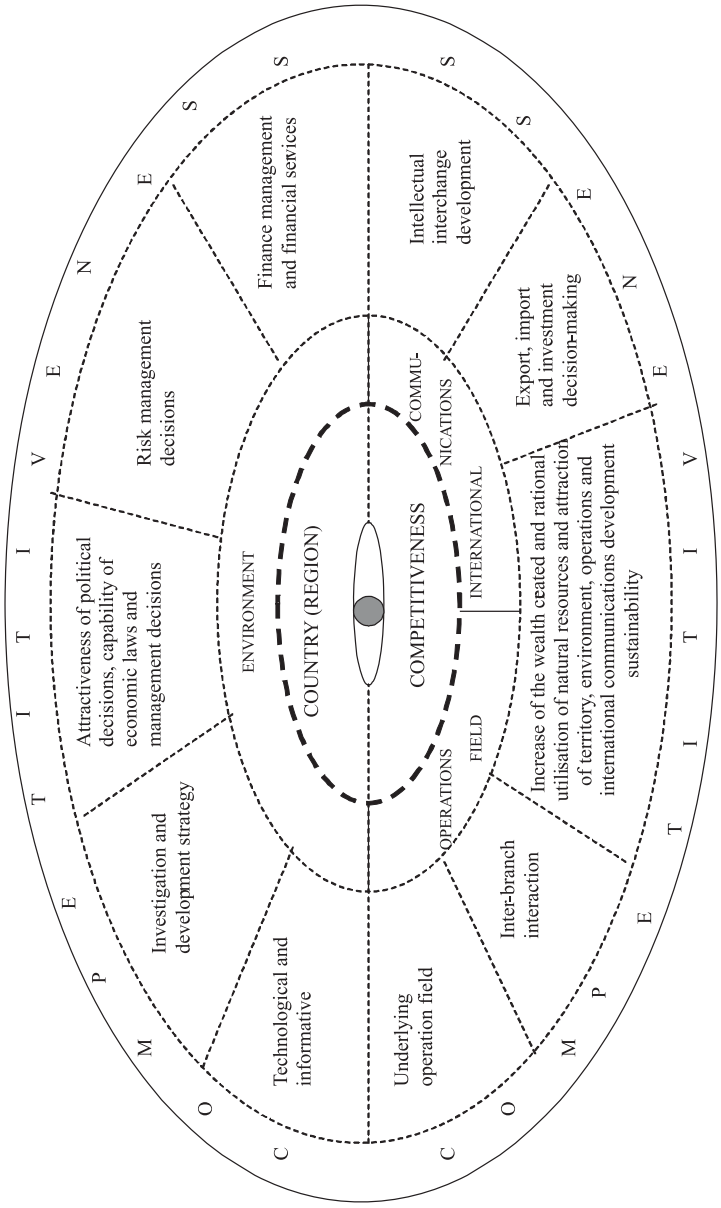

Fig. 2. Presumptions of country (regional) sustainable competitiveness

The apex of each triangle, shown in the picture and all rhomb illustrates the key point of competitive success achievement on the international scale: accessibility of resources and qualified labour force, needed for achieving competitive advantages; information that forms good opportunities, which are felt by companies and directions, where they use the resources and qualification of associates, goals of directors, managers and separate company employees; and, the important thing, experienced pressure upon the company, making it introduce and realise innovations.

In general, the presumption of competitiveness of a separate country and the whole of factors can be shown in Fig. 2.

3. Regional sustainable competitiveness strategy

When talking about any indicator, describing a certain aspect of system under investigation, it is attempted to obtain its quantitative estimation (Zavadskas 2006). Having quantitative estimate of the indicator, usually the following opportunities appear:

- To arrange analogue systems (in this case, of the country under investigation) according to the chosen characteristic.
- To evaluate indicators, influencing general value of an indicator to determine quantitative general indicator's value dependence upon values of factors.
- To create mechanism and strategy of system's development, seeking the most effective movement of system from lower to higher rank state.

Actually, quite often an attempt to find an adequate quantitative estimate of indicator claims for big efforts, and in the final result it is anyway being valuated according to the subjective opinion of experts. Quantitative evaluation of country or regional competitiveness indicator is no exception – it is really difficult to create a perfect and non-contradictory methodology, which would let to make such evaluation (Vickerman 1989). But competitiveness development problems are probably very important, because the World Bank offered a simplified methodology (World Development 2001) for quantitative evaluation of country's competitiveness (in points) and for estimating the main factors, determining competitiveness. By the way, before starting to apply the above-mentioned methodology or some other for the quantitative estimation of competitiveness, it is necessary to discuss several circumstances concerning indexes under investigation, or simply the characteristics of analysed factor. First, we have to admit that it is not wise to expect to obtain unambiguous estimate of competitiveness indicator, keeping in mind that competitiveness of a country or region is an index exposed to risk, that is why, when talking to discuss its reliability.

3.1. Stochasticity of competitiveness characteristics and capability outcomes

Usually, the concretisation of competitiveness conception and selection of its quantitative equivalent is obtained when processing options of the experts or combining evaluations, obtained by different methods. Besides, countries with quite different levels of factors can obtain the same value of general competitiveness index. These circumstances show that an attempt to evaluate competitiveness indicator unambiguously would not be acceptable neither methodically, nor pragmatically. And if homogeneity of competitiveness state does not al-

ways influence our behaviour, then this fact that the same factors for increase of competitiveness indicator gives stochastic result – directly influences our behaviour.

3.2. Sustainability of competitiveness or sustainable competitiveness

Talking about future management of processes or phenomena, the reliability question of possible process states or wanted results arises. On modern market, levels of reachable results and reliabilities are not tightly interrelated but also equally important. Accepting stochasticity of competitiveness as a process, its reliability management problem arises. Where process or measure is described by their quantitative values and uncertainty (risk) indexes, a characteristic of process sustainable development is insurance of chosen levels and their achievement guarantee (Rutkauskas *et al.* 2003). Thus the two-dimensional development function, pointed towards harmonisation of the growth rates and risk, transforms into three-dimensional function, when developed growth rates, their guarantee and accepted risk apriori maximises the growth rate.

3.3. Example of country competitiveness development strategy

Further, according to methodology of World Bank (World Development... 2001)), the idea of M. Porter competitiveness rhomb and idea of A. Markowitz's investment portfolio, competitiveness development scheme (model) was offered (Markowitz 1952). The idea of the model can be described in the following manner.

Practically, the situation investigation first of all included estimating the output (basic) competitiveness level, which was 0,34 at maximum 1(Rutkauskas, Miečinskienė 2005; Rutkauskas *et al.* 2007). Further, the problem, how to distribute potential investments to separate components of a triangle for revealing possibilities of competitiveness development considering their reliability and risk was solved (Fig. 3).

Fig. 4 shows isoguarantees of growth possibilities – curves having different reliability and change depending on risk level.

4. Risk aspects in the competitiveness assessment and management

4.1. Competitiveness and risk – main attributes of developing system

The aspects, being levers of country economical and social development forming competitiveness powers of the country, were presented in the second paragraph (Fig. 1) of this article. Risk management is one of the mentioned aspects. Actually, competitiveness and risk are not just antipodes but also attributes of any developing system which interacting are closely relative. Undoubtedly a country risk management strategy based by researches can become the most important and economically effective education means of countries competitiveness. High indetermination and risk degree is typical of competitiveness, in turn. For this reason it is important together with competitiveness like the most significant attribute of a developing system and the most important aspects of this attribute and determinants which condition it, to analyse risk not just like an attribute which reduces competitiveness of a system, but also like an education means of competitiveness.

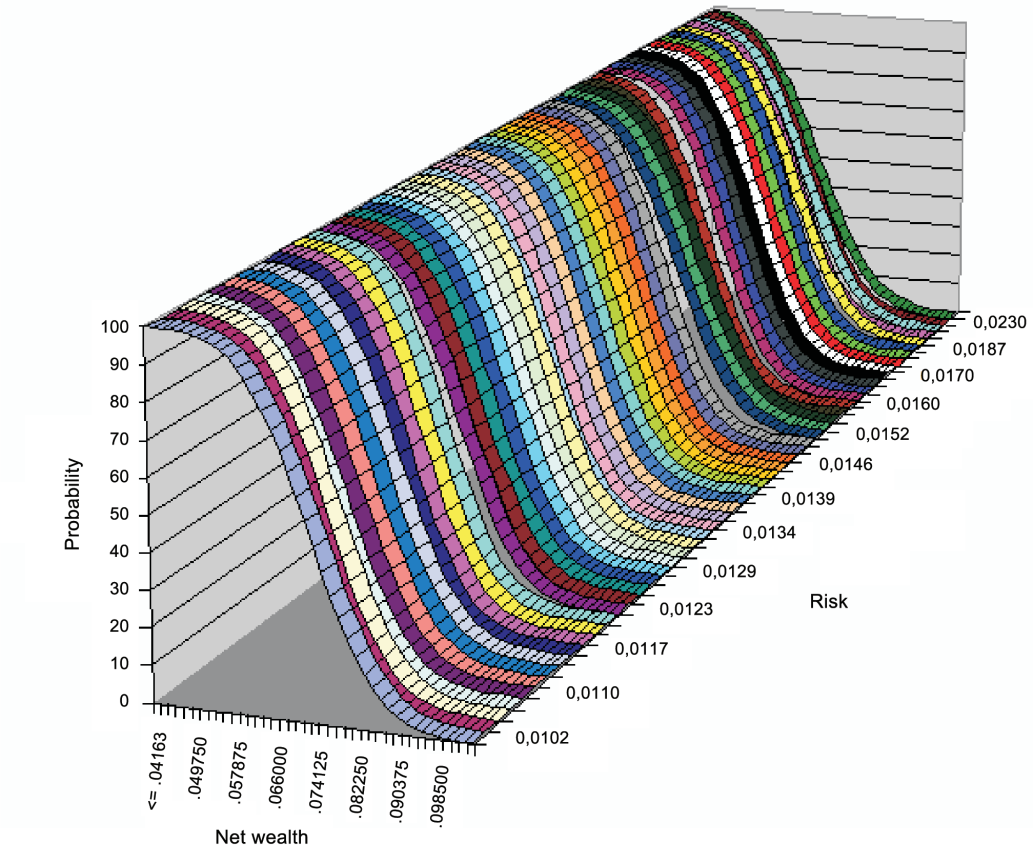

Fig. 3. Three-dimensional surface of growth possibilities – growth rates, their guarantee and risk levels

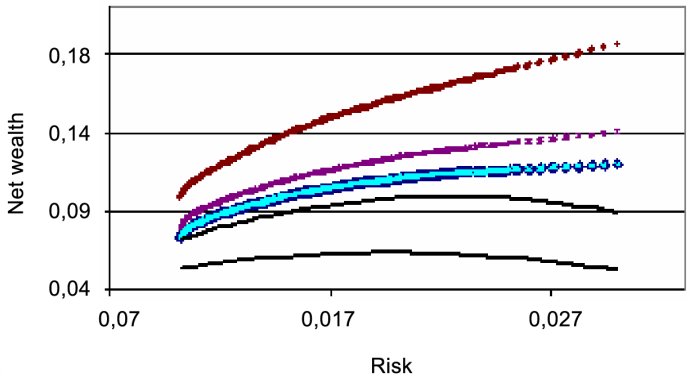

Fig. 4. Izoguarantees or the regional competitiveness development

4.2. Risk structuring as a stage in information accumulation

Today the risk conception penetrates practically into all human activities and existence areas (Bounchet *et al.* 2003). Actually, it often has quite different meanings. This variety of risk concepts causes a need to study the basic aspects of that variety, in order to make risk management preparation assumptions (Kinsinger 2007). A special means of different risk aspects comparison can be the scheme of risk structuring (it is presented in Fig. 5). There are three aggregated kinds of risk: physical risk, decision result risk, and economic information risk.

In many cases a man bases his interests and benefit formation on economic information, and he also understands the mechanism of his interests realisation as a complex of economic means oriented to that goal. That's why the risk of non-adequate economic and financial information influence human decisions risks directly, which, in turn, can influence physical risk factors. Therefore in most cases, it is normal to call the financial or economic factors as the basic (initial) risk factors, even in such fields of activities as ecology, environment etc (Rutkauskas, Ginevičius 2004).

Classification of operation risk. As it was mentioned earlier, nowadays it is rather difficult to point such fields of activity, which could be non-risky. Problems of risk classification, which are studied further, concern practically the majority of activities (Lhabitant, Tinguely 2001). The risk of an activity (or business) is a kind of risk, which influences the process of activity and threatens to decrease the effectiveness of that activity. When we classify risks, it is necessary to take into account the risk structuring (which is presented in Fig. 6), to avoid losing the information about the risk nature and the activity process and to understand consequences which can appear because of choosing one or another risk management mechanism.

We can manage the operation risk by using different means, which allow forecasting the occurrence of an event, and use different means to decrease the risk consequences scale. The effectiveness of risk management is determined by risk classification. Conceptually-based

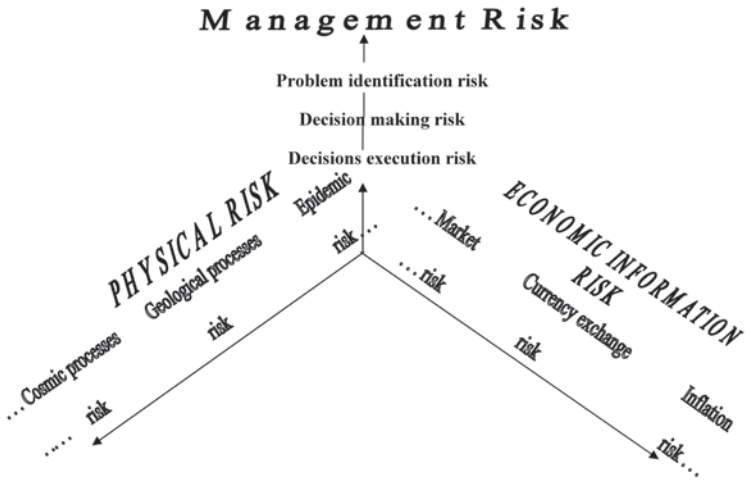

Fig 5. Common scheme of risk structuring

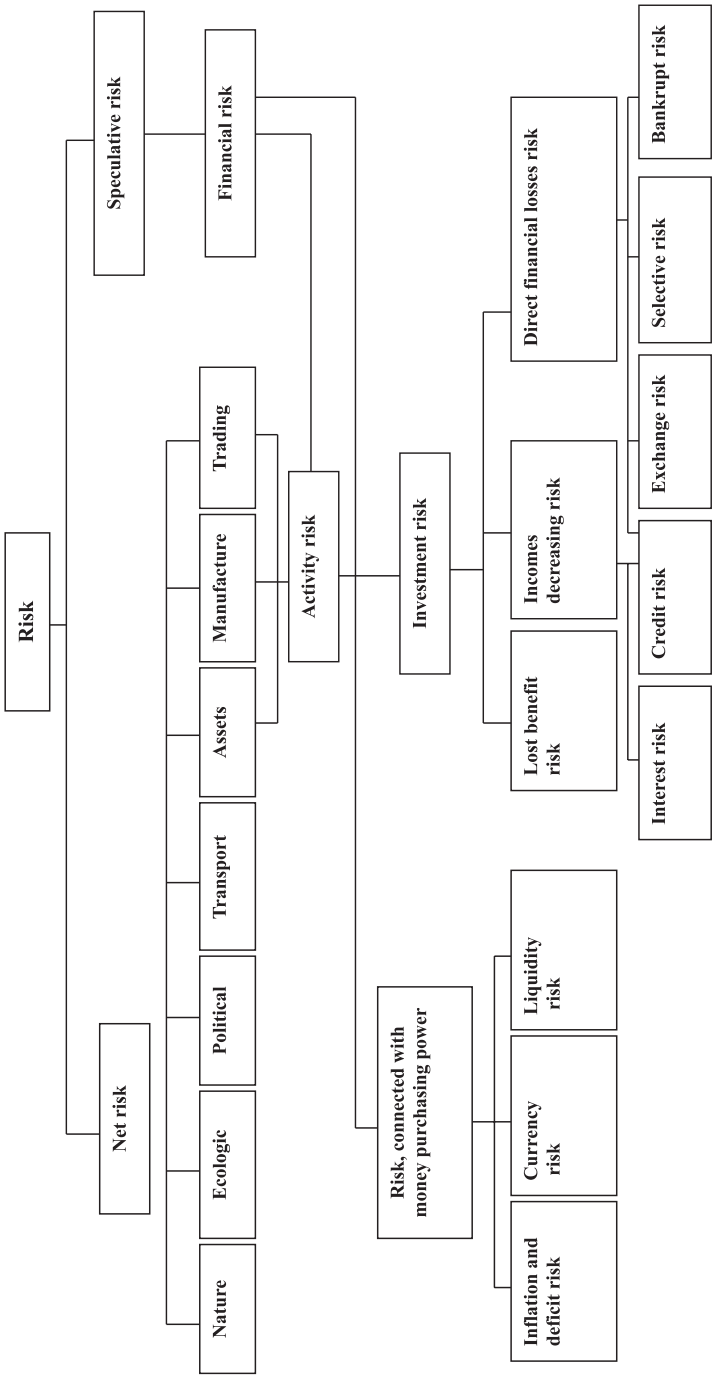

Fig. 6. Subsystem of risk activities in general risks system

risk classification allows to define clearly the position of each risk in the whole system and to reveal the possible risk effect on the activity and possibilities of the risk management. The successful risk classification allows to use the corresponding management methods properly. Every risk corresponds to its own system of the risk management methods. One of the possible activity risk classification schemes is presented in Fig. 6. It is often used in risk management practice.

These tight in advance not matched risk and competitiveness examples show a possibility to track interdependences between competitiveness and risk phenomena.

5. Conclusions

Development of country or region competitiveness - the identification of competitiveness factors and their appearance circumstances – is a very important, but also quite complex when managing problems.

The idea was raised that success in risk management could serve as an effective factor for developing regional competitiveness sustainability.

The idea and technique of adequate for competitiveness growth rate reliability and risk assessment portfolio allow to develop rational funds distribution according to separate features influencing the competitiveness growth.

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APIE REGIONO KONKURENCINGUMO PLĖTROS TVARUMĄ ATSIŽVELGIANT Į RIZIKĄ

A. V. Rutkauskas

Santrauka

Pagrindinis straipsnio tikslas – panagrinėti metodologinius ir praktinius šalies (regiono) konkurencingumo tvariosios plėtros strategijos aspektus ir jos įgyvendinimo priemones. Ši inovatyvi problema iškėlė daug originalių praktinio realizavimo uždavinių, kai kurie iš jų tinka sprendimo metodams sudaryti. Šiandien plėtros ir tvarumo sąvokos dažnai eina kartu analizuojant tiek globalinius, tiek regioninius, tiek vietinius procesus. Iš tikrųjų šiuo atveju konkurencingumo sąvoka, kaip ir plėtros tvarumo sąvoka, reikalauja adekvačios interpretacijos ir kiekybinio įvertinimo. Straipsnyje šalies (regiono) konkurencingumo matu priimtas trimatis indikatorius, kuris priklauso nuo veiklos sričių, dominuojančių šalyje, tarptautinių ekonominių santykių bei teisinės, finansinės, ekologinės, gamtinių išteklių ir geografinės padėties aplinkos konkurencingumų. Straipsnyje daroma prielaida, kad galima kiekybiškai įvertinti tiek bendrąjį konkurencingumą, priklausomai nuo trijų iš paminėtų komponenčių konkurencingumų, tiek kiekvienos iš komponenčių konkurencingumą, priklausomai nuo jas sudarančių subkomponenčių konkurencingumų, remiantis visuotinai pripažintais metodais arba ekspertinėmis priemonėmis. Taip pat daroma prielaida, kad yra pažinios kiekybinės priklausomybės tarp subkomponenčių konkurencingumų prieaugių ir sąnaudų, reikalingų jiems pasiekti, apimčių. Lėšų, sukauptų ir paruoštų integruotam šalies konkurencingumo rodikliui padidinti, įvertinti ir optimaliai paskirstyti, instrumentu yra pasirinkta portfelio teorija, adekvati sprendimų rezultatų patikimumo įvertinimui ir leidžianti įvertinti plėtros galimybių patikimumą esant skirtingiems rizikos lygiams. Rizikos valdymo sėkmė yra laikoma aukščiausios svarbos veiksniu, įtvirtinančiu šalies konkurencingumo plėtros tvarumą. Galutinė ekspertinės sprendimų priėmimo ir paramos sistemos principų struktūrizacija aptariama pritaikant sistemą konkurencingumo ir rizikos valdymui.

Reikšminiai žodžiai: konkurencija ir konkurencingumas, šalies ar regiono konkurencingumas, konkurencingumo savybių ir rezultatų stochastiškumas, tvarusis konkurencingumas, tvariojo konkurencingumo valdymas.

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