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The Competitiveness of Regions in the EU

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Abstract

The paper „The Competitiveness of Regions in the EU“ presents results of the project financed by The Grant Agency of the Czech republic; the project was implemented by the research team composed of both The Centre of Regional and Administrative Studies and The Regional Studies Department members of the Faculty of Economy, University of Economics, Prague. Duration of the project: 2009-2011.

In the introductory chapter, the paper focuses on the theoretical background and the methodology in the field of the regional competitiveness assessment. The definition of the regional competitiveness is discussed and the regional competitiveness factors are identified in this chapter regarding to the fact that the “competitiveness” is a relatively new concept in the economics and the economic geography. No universal definition has been identified so far; partial definitions are, mostly, related to specific issues or purposes of a research. Definitions related to microeconomic issues connect the competitiveness with the success with the sale of goods and services in open markets. The macroeconomic viewpoint seems to be much more variable: it is often related to the sustainable economic development in the long term. Besides the economic growth, the social and environmental sustainability is monitored as well as whether there is a negative impact of the growth in other regions or not.

In the following chapter, the regional competitiveness of NUTS II EU regions is assessed on the basis of the regional competitiveness index methodology. The index was compiled on the basis of statistical data available in Eurostat. Next chapter of this paper identifies regional competitiveness factors. These factors are divided into universal and specific.

Keywords: region, competitiveness, factors, European Union, NUTS II.

Introduction

This paper focuses on the competitiveness of regions in the EU at the NUTS II level, its assessment and definition of influencing factors. Currently, the regional competitiveness concept is seems to be very frequent as well as the issue of why some regions are able to compete globally and successfully, and some are not.

The aim of this paper is to assess the competitiveness of regions in the EU, identify and classify factors influencing the regional competitiveness.

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1. The theoretical background, methodology and concepts of assessing the regional competitiveness

In a long-term, the economic development in market economies is closely linked to the competitiveness as a key factor of the success of firms, states, regions and municipalities (Wokoun, 2009). The OECD (2007, 2008) defines the competitiveness as the ability of corporations, sectors, regions, nations and multinational units to generate a high level of their income from production factors and relatively high level in their use to sustainable levels while exposed to international competition.

Theoretical, methodological and practical issues related to the competitiveness in terms of the competitiveness of enterprises are well defined in the economic theory. However, the competitiveness of regions, although it is accented, has not been yet appropriately defined. At the regional level, there is a direct crossing of innovation creators and innovation users (Wokoun, 2010). The regional prosperity (Corvers, 2003) then depends on the ability of a region to bridge the gap between these two mentioned groups. As mentioned above, the economic development within the market economy is linked to the competitiveness as a key factor of the success of firms, states and regions. Regions compete in different ways: the attractiveness of the business environment, the labour and the capital; the regional competitiveness may be understood as a set of synergies and complementarities that occur within the commercial and other socio-economic activities performed in the region.

M. Porter (e.g. 1992, 1990) described various factors of the competitiveness. His very well-known concept of a diamond of competitiveness is based on four peaks: the demand, production factors, the strategy of a firm, related and supporting sectors represent also the factors of competitiveness. To assess the regional competitiveness, the Porter’s diamond may be used taking into account that the competitiveness itself is determined by groups of factors: input factors (the supply of production factors), demand factors (esp. the domestic demand), factors of related and supporting sectors performance (with direct links to the division of labor), factors related to strategies of firms and the nature of competition (determining the

investment attractiveness) and, finally, factors related to governments' decisions including random effects (Viturka, In: Slany et al, 2006). With the help of Porter's diamond, individual countries may be classified and measured both quantitatively and qualitatively, when it comes to the level of their competitiveness. The European Commission (2004) defines regional competitiveness as the ability of regions to generate relatively high levels of their income and employment.

In general, the regional competitiveness may be defined, within a frame of a free competition, as the ability of a region to produce goods and services relevant to the market needs increasing the welfare of regions, states and the population.

Kitson et.al (2004) claims that there is neither theoretic nor empiric universal framework of the regional, urban or municipal competitiveness. However, experts survey available concepts in order to compile a definition and an evaluation methodology.

To define regional competitiveness, two concepts are considered:

- The regional competitiveness as an aggregate competitiveness of firms
- The regional competitiveness as a derivative macroeconomic competitiveness (Wokoun, 2010)

One of the concepts is based on rules that work in international trade but do not work at lower than national level. Differing from the national level, exchange rates differences and changes in ratios of prices and wages, at the regional level, either do not exist or do not work. Oppositely, the transfer of mobile factors (the labor and the capital) among regions may represent a threat for concerned regions (e.g. Camagni, R., 2002).

In accordance with the first mentioned concept, the regional competitiveness (European Commission, 1999) was defined as the ability of regions to produce goods and services ready to compete on international markets, while ensuring high and sustainable level of income, or, more generally, it is the ability of regions exposed to external competition to achieve a relatively high income and a high level of employment. A competitive region must provide adequate employment opportunities in relevant quantity and quality.

An alternative to the above definition that takes account of productivity and thus higher wages and profits, and also the analysis of institutional arrangements and market structures, may be formulated as follows: The regional competitiveness is the ability to optimize domestic assets of regions and to compete and prosper on national and world markets and adapt to changes within these markets.

Capello, Nijkamp (2009) claim that the regional, urban and municipal competitiveness represents an important complement to the regional development theory. Authors put an emphasis on local specific features and both material and non-material assets as strategic factors of the regional competitiveness. Local competitiveness has its source in the confidence and the solidarity more than a net capital capability; in the local identity more than a pure qualification; in the connectivity and relations more than accessibility; local identity more than local effectiveness and quality of life.

Turok (2003) connects the competitiveness at both the regional and urban levels with the economic growths dynamics (the engine of the economic growth). According to author's conclusions, the important indicators are: the unemployment development, GDP per cap., but also some other elementary and supporting sources of the economic development. The concept of the "competitiveness" is then based on three key factors of the economic development:

- The ability of local firms to sell their products on external markets (the market)
- The value of products and the efficiency of production (the productivity)
- Local human resources, capital and natural sources (e.g. the unemployment rate)

It should be noted that the competitiveness is a very broad term and includes many spheres and factors. From this perspective, Huggins (2003) points out that it is necessary to examine these factors, in terms of their interdependence, in order to achieve a comprehensive concept of both the regional and local competitiveness.

Another important paper concerning the issue is the paper by Kitson et. al.(2004). Authors consider the competitiveness concept as abstract and difficult to grasp. Following questions are posed in the introduction chapter:

- What exactly is meant by the "competitiveness" of regions, cities and municipalities?
- In what sense regions and cities compete?
- How can we measure the competitiveness?
- What are the links between the regional competitiveness and the regional economic prosperity?

Authors point out that there is no universal framework, neither theoretical nor empirical, to explain the competitiveness of region, cities and municipalities; although, the experts accent this issue in recently published analyses. The regional competitiveness may be defined as a

success of regions and cities competing in the fields of e.g. share on both the national and international export, or attracting the capital and labor.

While assessing the regional competitiveness, some already known methods may be used: mathematic modelling methods, methods of assessing the regional production competitiveness (using available statistical data) and the method of assessing the firms' competitiveness within the region (the quality evaluation: quality models, ISO, e.t.c.).

So how to define the regional competitiveness? The regional competitiveness is an important factor in the regional development. Regions, cities and municipalities compete in creating, acquiring, maintaining and supporting economic entities. These economic entities stabilize or create new jobs, new opportunities, and have a major impact on prosperity, welfare and living standards of regions and municipalities. The regional competitiveness describes the ability of regions to generate revenues and maintain employment levels within the national and international competition.

As Sechovceva (2009) claims: The competitiveness of a region is a character feature of an economic system to perform and develop in the market, to effectively ensure the reproduction of population, goods and the regional potential which may be examined under different aspects and at different levels. Economic processes continue within a territory; often the results of its competitiveness become factors and these factors affect the results back.

The competitiveness is understood as one of the most important factors of the regional development. In this context, Storper (1997) defines the territorial competitiveness as the ability of a local economy to attract firms with stable or growing shares in the market and to ensure stable or growing living standards to all participants. Strengthening the competitiveness of regions (including the territorial units at lower level) allows creation of a comparative advantage towards the rest of the territory (Huggins, 2003).

According to all above mentioned results of the conducted search, it is possible to define the regional competitiveness as follows: "The regional competitiveness represents the long-term ability (implemented possibilities) of regions (societies within territories) to successfully compete with others while maintaining the social cohesion and environmental sustainability. Following this concept, some universal indicators of competitiveness are used to compile the regional competitiveness index: economic indicators of a major importance, social and environmental indicators to achieving an adequately comprehensive concept.

2. Assessing the regional competitiveness – the regional competitiveness index

The regional competitiveness is determined by a group of economic, social, political, environmental, organization and other factors. One aggregate indicator of the regional competitiveness reflecting all its levels and enabling a relevant comparison would be the optimal evaluation method. Such aggregate and generally accepted indicator has not yet been compiled. The reason is, among other things, that no generally applicable methodology of the regional competitiveness assessment has yet been prepared. Some of the available concepts will be presented in following chapters.

Huggins (2003) presents “the competitiveness index” implemented in Great Britain. This index reflects measurable local competitiveness criteria and seems to fill the gap in the research of competitiveness as available analyses concerning this issue tend to examine competitiveness factors separately and to ignore the necessity of an aggregate framework of inter-connected and inter-conditional factors.

Huggins (2003) emphasizes the necessity of available data comparability at local, regional and national levels, reflecting the inter-conditionality between macroeconomic outputs and innovative entrepreneurship, while creating the competitiveness index. Huggins’s index reflects a model based on three major factors conceptually framing the competitiveness: inputs – outputs-results. The major inputs are e.g. the density of firms (number of firms per population); the share of innovative progressive firms; the total economic participation (the economic activity rate). These variables contribute to the creation of output which is determined namely by the productivity of a territory (GDP per cap.). Finally, the impact of above mentioned measures (inputs and outputs) operate in the form of material results determined by the average wages level and the unemployment rate. The competitiveness index compiled by Huggins represents a dynamic tool for measuring the competitiveness of regions. It was applied on the British territory but, if modified, it may be applied also on other countries.

The analyses of theoretical and methodological regional competitiveness concepts provide a wide range of viewpoints by many authors. In some aspects, these viewpoints overlap, the authors often come to the same or similar conclusions. However, most of the analyses seem to be only a complement to the whole issue.

Authors examine various aspects of the regional competitiveness; each author focuses on a specific part of the issue: the definition of major terms and concepts, questions on the

competitiveness and its development, studying the economic growth, the productivity of regions, regional development, etc. Basically, the aim is to create a conceptual framework of the regional competitiveness of regions containing as many as possible partial viewpoints and analyses.

A number of authors agree with the productivity as an elementary indicator of the regional competitiveness. More precisely, the productivity, as a broad term, may be viewed variously: e.g. Huggins (2003) and Kitson et.al. (2004) focus on the productivity from the economic – regional viewpoint. Understanding the vastness of the concept, these authors highlight the importance of the productivity as the major regional competitiveness indicator. Gardiner et. al. (2004) examines the productivity as an effectiveness of labour force. In his opinion, the competitiveness of regions depends on their productivity.

The conducted search provides a number of indicators for measuring the economic competitiveness of regions including some specific aspects such as the spatial structure of regions, the urbanization rate and the number of larger cities in regions.

3. The methods used to evaluate regional competitiveness

To evaluate the situation of NUTS II EU regions, a regional competitiveness index was devised; in this connection, a database was compiled. As sources of the required data, statistical databases of supranational relevance were taken into consideration, i. e. Eurostat and OECD statistics, which guarantee a high degree of probability concerning a unified methodology when calculating indicators for all countries and regions. In the process of identifying these indicators, the OECD statistics proved to be incomplete (most data about numerous regions were missing) and insufficient as concerns the regions surveyed, the authors used mainly the Eurostat data as the primary source of information; only in one category of indicators, the OECD database was used as this category was lacking in the Eurostat data at the time.

While selecting suitable indicators, three basic criteria were used:

The area indicator: in accordance with the project proposal, suitable indicators for the NUTS II regions were used. The data about the NUTS II regions were available and relatively sufficient in scope, and were structured as required; however, information on some regions was missing. One of the very important indicators used (the ecological indicator – production

of greenhouse gases) was available only at NUTS O level and for one single year (2005). The regional values were calculated as average values of the state's ecological burden.

The time indicator – allows for a possibility of recording how the indicators develop in each area surveyed over a period as long as possible, especially including some years before the research started. Some indicators were available for a twelve-year period, some for a substantially shorter period, and others, for example the ecological indicator, only for 2005 or 2009. In most cases, to be able to calculate the competitiveness index, data from 2004—2009 were available; for this reason, this particular period was crucial to subsequently creating competitiveness factors.

Relevant categories – they facilitate identifying areas (sectors) which, based on studying Czech and foreign professional sources, may have influence on regional competitiveness. From this point of view, competitiveness indicators and so-called tested indicators were recognized. Both categories include economic, social and ecological indicators; these should reflect the regions' conditions and development over the period found in the databases (see Table 1).

Table 1: Categories of competitiveness indicators

Category	Competitiveness factors
economic	Regional GDP per inhabitant (EURO, PPS)
	Unemployment rate (in %)
social	Average migration deficit per 1000 people (in %)
	Proportion of university educated people to all people, age group 24-64 (in %)
	Income (in PPS per person)
	Long-term unemployment (in %)
ecological	Greenhouse gases production (NUTS 0)

Source: the authors

The index made for evaluating regional competitiveness works on the basis of comparing the values of a given region to the most favourable value. The following basic formula is used:

$$P_i = I_i/I,$$

where P is the percentage of an i-region to the best region (I). The best region thus has reached 100 %. In this way, standardized data for further calculation are acquired.

The next step to construct the regional competitiveness index is to set the weights of individual indicators. In this case, the weight of each indicator evaluating regions was set by means of an expert method modified by the use of the standard deviation. It is calculated in

such a way that the total sum of all indicators' weights would equal 100 %. To make the modification using the standard deviation, the following formula is applied:

$$u_i = v_i / \Sigma i$$

where u is the modified weight of an indicator, v is the expertly set indicator weight, Σi is the standard deviation of the given indicator's value, and i is the indicator. In this way, the dominance of indicators with a high degree of variance is eliminated. After this modification, division by the constant follows; this is done in order that the total sum of all weights would equal 100 % as well. The result is c, which is the final weight.

The last step to construct the index is setting points for individual regions; to do that, the following formula is used:

$$R_i = \sum P_{ij} * ij,$$

where R is the value of regional competitiveness, P is the percentage value compared to the best region, c is the total value of the indicator, and j is the indicator.

This methodology has been applied and proved before while resolving the project MasterCard Czech Development Centres.

4. Evaluation results according to the regional competitiveness index

According to the regional competitiveness index (RCI), a list of regions in the EU member countries (at NUTS 2 level) was made. The results are not surprising: mostly, the developed countries' regions scored the best, with the exception of Prague, which ranked 20th.

Table 2: Top 30 NUTS II regions according to RCI

Rank	Region	RCI	Rank	Region	RCI
1	Inner London	62,07%	16	Noord-Brabant	51,43%
2	Luxembourg	61,64%	17	Oberösterreich	50,85%
3	Stockholm	59,72%	18	Gelderland	50,49%
4	Utrecht	57,88%	19	Hovedstaden	50,47%
5	North Eastern Scotland	57,50%	20	Praha	50,45%
6	Salzburg	56,96%	21	Övre Norrland	50,25%
7	Tirol	56,51%	22	Provincia Autonoma Trento	50,10%
8	Zeeland	54,84%	23	Oberbayern	49,90%
9	Provincia Autonoma Bolzano/Bozen	54,83%	24	Emilia-Romagna	49,77%
10	Åland	53,90%	25	Mellersta Norrland	49,53%
11	Noord-Holland	53,62%	26	Midtjylland	49,14%

12	Västsverige	52,03%	27	Gloucestershire, Wiltshire and Bristol/Bath area	49,10%
13	Sydsverige	51,75%	28	Surrey, East and West Sussex	49,07%
14	Småland med öarna	51,53%	29	Östra Mellansverige	48,99%
15	Berkshire, Buckinghamshire and Oxfordshire	51,48%	30	North Yorkshire	48,97%

Source: the authors

At the bottom of the list, there are the most problematic regions in the new member countries, especially in Bulgaria, Romania, but also in Poland, Hungary, Slovakia, and two in the Czech Republic.

Table 3: Bottom 30 NUTS II regions according to RCI

Rank	Region	RCI	Rank	Region	RCI
238	Slaskie	23,96%	253	Zachodniopomorskie	21,21%
239	Wielkopolskie	23,72%	254	Sud-Est	21,18%
240	Stredné Slovensko	23,62%	255	Opolskie	21,06%
241	Moravskoslezsko	23,23%	256	Sud - Muntenia	20,95%
242	Lódzkie	22,96%	257	Centru	20,81%
243	Malopolskie	22,86%	258	Kujawsko-Pomorskie	20,61%
244	Nord-Est	22,75%	259	Yugoiztochen	20,47%
245	Severozápad	22,70%	260	Warminsko-Mazurskie	20,47%
246	Észak-Alföld	22,64%	261	Podkarpackie	20,36%
247	Východné Slovensko	22,32%	262	Swietokrzyskie	20,15%
248	Sud-Vest Oltenia	22,24%	263	Yuzhen tsentralen	20,07%
249	Dolnoslaskie	22,20%	264	Lubelskie	19,98%
250	Észak-Magyarország	21,95%	265	Severoiztochen	18,63%
251	Podlaskie	21,94%	266	Severen tsentralen	18,24%
252	Lubuskie	21,52%	267	Severozapaden	17,35%

Source: the authors

5. Regional competitiveness factors

Based on the scored results, top 30 and bottom 30 regions were selected according to their RCI scores; these regions were further analysed with regard to factors contributing to regional competitiveness.

Universal factors are those that are generally relevant and their significance has been proved when studying both the successful and unsuccessful (lagging behind in competitiveness) regions. Specific factors are those that may be traced only in certain regions and reflect their individual conditions; however, in terms of competitiveness, these may be rather significant (e.g. due to raw materials, tourism expansion potential).

The basic classification – universal and specific factors – is crucial to understanding how they may be applied in general. It should be pointed out that one or two singled out factors successfully applied in some regions cannot be subsequently employed in another region, possibly with expectations of any enhanced socio-economic development. Any region's success largely depends on the combination of various factors, local conditions, and the particular initiative that responsible local representatives are willing to take. In this respect, universal factors are those that, if slightly modified to another region's conditions and combined with other endogenous factors, may lead to enhancing the region's competitiveness.

Universal factors include:

a) The importance of a regional and decision making centre in economy

Usually, in regions showing a high level of competitiveness important economic centres are located. A region of this kind is mostly a metropolitan region of the given state (London, Stockholm, Paris, Prague), characterised by well-developed services and the presence of decision making centres as concerns both the public and private sectors. It is often also an important administrative heart of the given area regarding the state administration central bodies; its position is beneficial not only for the metropolitan region itself but also for the neighbouring regions; for example, for Surrey, East and West Sussex as a region in the vicinity of Inner London. The expanding London agglomeration affects this region most; likewise, a similar effect may be seen in case of the Central Bohemian region, which is in the close vicinity of the capital Prague.

If the capital city is not located there, the region usually contains a big city, which is the region's economic centre, service centre, including services related to research, development, and innovation. The region's competitive potential is key: its ability to catch up with changing conditions and to develop modern advanced sophisticated activities (mostly IT, high-tech branches, pharmaceutical research, medical disciplines, production of vehicles, food production, and others); all in all, to a large extent, it is the main driver contributing to the region's innovation potential.

b) Transport in regions (regional centres)

Competitive regions (their centres) usually have good transport facilities. They are mostly linked with trans-European and national transport networks, their centres are often important hubs of air, railway, road, or water transport: for example, the region Åland in Finland, or Hovedstaden in Denmark where water transport is important (both passenger and freight) as

the region profits from its excellent strategic location between the Nordic states, the Nordic Sea and the Baltic Sea. It may be added that this region enjoys a very good combination of competitiveness factors and the knowledge economy (see below).

In competitive regions, the transportation infrastructure is complex, modern and dense. In these regions, all types of transportation and networks are available: this includes a highway network, high-speed trains and a dense network of outer city railways, air transport connected with the city by a highway or railway network, or other special means of transport as APM (automated people mover). Another qualitative aspect of competitive regions may be multimodal hubs facilitating fast changing from one means of transport to another. For example, Frankfurt/Main or other west European cities may be mentioned.

In terms of transport, regions and centres with relatively lower levels of competitiveness have incomplete transport networks, are not well accessible, or have no multimodal hubs. Regions and centres with low levels of competitiveness often lack completely some of the above mentioned facilities, or their connection to other places is rather bad and causes huge time losses. Thus frequent and regular connections between the centre and places on its periphery may be considered as a significant competitiveness factor. Another significant competitiveness factor is the complexity of integrated transport systems. Integrated transport systems facilitate travelling faster and conveniently, make travelling from the centre to the suburban areas easier, and decrease people's transaction costs in terms of both time and money. Regarding transport, Europe's most competitive regions may be found in the „blue banana“ zone, which includes northern Italy, Switzerland, western Germany, eastern France including the Paris agglomeration, the Benelux states and the London agglomeration.

Apart from this rather compact zone, some highly populated (approx. 1 million people) agglomerations in Germany and France may be included. Other regions, with the growing geographical distance from the above mentioned regions, show decreasing levels of competitiveness as far as transport is concerned, with the exception of some capitals as Berlin, Prague, Vienna, Barcelona, Madrid, Rome.

c) Levels of research, development and innovation in regions (clusters, the triple helix, knowledge economy)

One of the major prerequisites for competitiveness is the existence and concentration of research, development and innovation institutions, often as part of tertiary education institutions. As is regularly seen in successful regions, the possibility of connecting research

and development institutions with business is an important factor. In regional development theory, this issue was dealt with by Cook et al. (2006) in the framework of the triple helix. This concept assesses the importance of interconnecting the public administration, private sector players, and R&D institutions (universities, research and development institutes, science and technology parks etc.) in enhancing regional competitiveness by innovation system development.

The triple helix concept is often the basis of the development potential relating to industrial clusters, which aspire to more than achieving agglomeration economies due to the geographical vicinity of firms in similar fields. Intensive cooperation between the business sector and research and development institutions is at issue. Multiple forms of cooperation may be realised, with support given by public administration authorities, or regional and local development aid agencies.

Some regions oriented towards information and communication technologies (ICT) have been very successful: e. g. Stockholm, Utrecht, a province in the Netherlands. Moreover, the knowledge economy phenomenon in the Scandinavian countries is worth mentioning. Eight out of all most developed NUTS 2 regions may be found in the Nordic countries. These regions devote more than 3 % of regional GDP to R&D (e. g. Västsverige in Sweden invested 4, 47 % of its GDP in R&D in 2010). Stockholm, together with three other Swedish regions, belongs among the most active regions in R&D. A region with an extreme share of financing R&D is also Hovedstaden in Denmark, which invested c. 7 % of its GDP in R&D in 2007. Above average investments in R&D were made in some British regions: North East Scotland and Berkshire, Buckinghamshire and Oxfordshire, in which there is a relatively large proportion of people working in high-tech branches – c. 11 %. Oberbayern in Germany may be characterised in a similar way, as well as Italy's region Emilia-Romagna and France's region Ile-de-France. Britain's Gloucestershire, Wiltshire and Bristol/Bath is notable for its favourable combination in focusing on high-tech branches (e. g. BAE Systems, Airbus, IT branches and micro-electronics – Hewlett-Packard) as well as its high levels of R&D investments and employment in financial services. With regard to industrial clusters focused primarily on food production, Denmark's Midtjylland is a very important region, producing around 11 % of the country's exports in foodstuffs, thanks to innovative production and the presence of one of the world's major food clusters.

In competitive regions, the interconnection between universities, R&D institutions and business reflects in a great number of patents generated. According to the KIT project

(ESPON programme), the most successful regions (data from 2005-2006 per 1000 people) were Nord Brabant in the Netherlands and Oberbayern in Germany. On the other hand, low ranking regions according to RCI have produced the lowest number of patents (e. g. Sud-Est and Sud-Vest Oltenia in Romania or Anatoliki Macedonia in Greece).

At the same time, the existence of and progress in the region's R&D sector does not automatically guarantee a high level of regional competitiveness. For example, the case of Midi-Pyrénées shows that, even though this sector is hugely present in Toulouse, the region's centre, other factors, the transport infrastructure in particular, are lacking; consequently, the region lags behind the EU's most developed regions and its competitiveness is rather low. Similarly, a low share of R&D does not necessarily mean a low level of competitiveness, which may be seen in case of Inner London. Obviously, an appropriate combination of this factor and other factors is key.

d) Adaptable and qualified workforce

As a rule, competitive regions have the benefit of well-established educational institutions and a great number of people with tertiary (university) or secondary education. Admittedly, any degree only is not sufficient; it is people's professional focus and possibility of joining the labour market that matters most. A high proportion of college educated people is consistent with the existence of tertiary education institutions, mostly based in the region's centre. Regions of this kind benefit from flexible workforce, ready and willing to further study and achieve better qualifications, i. e. by participating in training courses and thus flexibly adapting to changing conditions on the labour market. Competitive (growing) regions are capable of attracting qualified and educated workers from other regions. Thanks to demand on the labour market, people who move to the region are usually young and qualified, which results in a positive migration inflow.

e) Institutional framework for supporting business growth and economic diversification

Competitive regions benefit from good public administration and functioning legislative frameworks, which suggests fast legal actions, good law enforcement, good government etc. To influence a region's further development, support tools have been created to boost business activities. Basically, the tools predominantly exist at national level, but may be applied at regional level (e. g. investment incentives); other forms of business support, at national, regional or European levels, may be helpful as well. Some legally stipulated

conditions, administratively demanding procedures and required transparency of the whole process in support of business can invariably affect any potential success.

A well-established institutional framework always gives rise to favourable conditions for economic diversification and for supporting small and medium sized businesses; these maintain steady long-term social and economic growth at local or regional levels (especially in the times of fluctuations of the business cycle). In some successful regions, in which firms of all sizes are based, it is noticeable that small and medium sized firms are key to the area as they flexibly react to economic changes. To illustrate, in Bulgaria's regions Severozapaden and Juzhen Tsentralen, ranking among the least developed EU regions, big firms and numerous micro firms are present; by contrast, the sector of small and medium sized firms is underdeveloped there, which is altogether unfavourable.

Equally, it should be added that no ideal version of any "recommended balanced business size structure" exists. Each region's natural conditions and resources, institutional framework, and transportation infrastructure invariably determine its "sector structure". Thus there is no "model" sector structure guaranteeing competitiveness. Essentially, regions with mostly large firms are more vulnerable in case an industry is depressed and masses of people become unemployed and, consequently, unhappy; the same danger holds for mono-sector regions, for example, Romania's regions Nort-Est and Sud-Vest Oltenia. Then again, in some regions there are virtually no large firms but small firms prevail, especially in agriculture (the share of small and medium sized firms is c. 60 %); these are the EU's least developed regions, for example Nort-Est in Romania.

Specific factors include:

a) Tourism development potential

In some RCI high ranking regions, tourism related activities play a key role. Likewise, other sectors – primary, secondary and tertiary – are habitually present in the regions; however, they contribute to overall employment to a lesser degree. As a rule, such regions are important tourist destinations, which specialise in tourism thanks to their natural, cultural and historical resources, e. g. Austria's regions Salzburg and Tirol, or Italy's Trentino, Bolzano, and Emilia Romagna; these typically benefit from low population density.

The above mentioned regions are regularly easily accessible and provide good basic infrastructures (all types of accommodation and catering facilities for a sufficient number of tourists), as well as additional infrastructures for clients' extensive relaxation, sports and

cultural activities. Good organisation and management (destination management) are of growing importance, adding to the fine-tuned coordination of services and creation of tourism related products. These traditionally tourism oriented regions render high quality services, which results in high client satisfaction.

b) Natural resources

Despite the growing importance of the knowledge economy, some regions were able to base their competitive advantage on the use of natural resources; for example, North East Scotland in the UK, which ranked fifth in the competitiveness index, and whose economy is based on oil and gas extraction. Also regions that managed to combine their natural resources potential with other competitiveness factors, such as the service sector growth or the knowledge economy, now belong among the best EU regions. To illustrate, in the above mentioned North East Scotland not only major oil and gas deposits may be found, but also agriculture, the food industry, fishing and other branches flourish. In terms of employment, the service sector is considered as the most significant branch there as it employs more than 50 % inhabitants. As a matter of fact, with regard to the knowledge economy, the region ranks among Britain's and the EU's most influential ones. Its total expenditures on science and research exceed 3 % of regional GDP, with the proportion of people employed in R&D remaining at a steady level of c. 2,7 % in the period surveyed. Also North Yorkshire in the UK, which owes its dominant position to services, tourism (nature conservation reserves), and raw material production, performed in a similar manner. Sweden's region Övre Norrland is rich in valuable natural resources, which generate the region's main competitive advantage; it has a benefit of extensive wooded areas, raw materials, and energy sources. A similar situation is in another region, Mellersta Norrland.

c) Technical infrastructure and specific conditions for environmental quality

Regularly, the technical infrastructure level (environmental in particular) determines the quality of the environment, which is a crucial factor affecting the region's attractiveness and competitiveness. That's why the technical infrastructure level proves very problematic especially in regions showing a low degree of competitiveness, the problems being sewage and its cleaning, sometimes also waste disposal. As an example where the substandard technical infrastructure can negatively affect the region's potential, some Bulgarian regions should be mentioned, e. g. Severozapaden, where the majority of households are connected to water pipes (99,2 %), but the sewage system is used by 58 % of households, and sewer cleaning machines by only 18,6 % of households, which is the lowest rate in Bulgaria (2006).

The importance of certain frequently mentioned factors has not been proved in the analysis. One of them is the sector structure. A dominant share of the primary sector is obvious in the least developed regions (most of Romania and Bulgaria); at the same time, a relatively high share of this sector has been recorded in some of the most developed regions, as in North East Scotland (the UK), Aland (Finland), North Yorkshire (the UK), or Ile-de-France (France), where it is closely connected to related services or industrial branches. A large share of industry is evident in some RCI high ranking regions, as North East Scotland (the UK), Tirol (Austria), Zeeland (the Netherlands), Västsverige (Sweden), Småland med öarna (Sweden), and others. In these regions, industrial production is far less exposed to global economic fluctuations and is never robustly depressed; this has a clear effect on regional competitiveness. On the contrary, in economically underdeveloped regions, the massive existence of industry eventually leads to essential economic and social problems in case the industry declines. This concerns most regions in Romania and Bulgaria, also e. g. Zachodniopomorskie (Poland), Kujawsko-Pomorskie (Poland), or Mittelfranken (Germany).

In conclusion, it should be added that, although regional competitiveness factors have been identified, a region's long-term success is possible only if an appropriate combination of various factors is made. For this reason, for example Inner London may be considered as the EU's most competitive region, but it is heavily dependent on the quaternary sector. By contrast, other EU regions that maintain a good combination of competitiveness factors will very likely be more stable in other aspects of regional and local development (e. g. North East Scotland, combining the economic importance of oil and gas production with a high share of the service sector and satisfactory expenditures on R&D).

Several factors contributing to regional competitiveness have been identified; in the same way, factors associated with "little success/failure" may be recognized. According to RCI, the new EU member states' regions scored the worst (with the exception of metropolitan regions, where the situation is usually markedly better). These states underwent the process of transformation from centrally planned economies to market economies in the 1990s; only in the last decade did they start to gradually converge economically to the average in Western countries. Some other issues are worth mentioning: the impact of peripheral location, often also the distance from developed countries or regions (eastern regions in Poland and Slovakia, regions in Romania and Bulgaria); problems with unadoptable social groups (usually with low education, low qualifications, and limited access to job opportunities); low volumes of foreign direct investment (per person); environmental problems – unresolved burdens from the past

years – and insufficient environmental protection at present (related to people's low awareness of ecological aspects), which is not necessarily true only about the secondary sector (e. g. the issue of tourism sustainability in some regions).

Conclusion

Regional competitiveness is defined (according to Porter, 1992) as the ability of a given region to provide services and assets in a better or cheaper way than services and assets provided in another region. Therefore, at present, in each region it is necessary to identify the most competitive branches which may play a role in the region's development potential. Basically, in the long term, regional competitiveness may be achieved through constant innovation and business environment improvement. Regional wellbeing or welfare is based on raising productivity and on innovation, i. e. on the knowledge economy. The region's competitiveness then reflects in its inhabitants' living standard.

The factors influencing regional and local competitiveness are variable in time; this in turn shows a relationship to the degree of being familiar with socio-economic processes on the one hand, and is subjected to changes brought about by the development of structures and by their mutual impacts on the other.

Undoubtedly, regional and local competitiveness is crucial to the development of communities, towns and regions. Regions, towns and communities compete when creating and supporting economic subjects on the one hand, and when preparing suitable conditions for regional and local growth on the other, for example by infrastructure support, qualified workforce etc. Regional competitiveness may be defined as “the ability (realised opportunity) of a region (community in a given territory) to outperform others in competition with other communities, while maintaining social cohesion and ecological sustainability“.

In this article, regional competitiveness factors were identified and divided into universal and specific ones. In highly competitive regions, important economic centres are usually located. Regularly, these are metropolitan regions (London, Paris, Prague), characterised by developed services, and the presence of decision making centres related to the public and private sectors. If a region like this is not a metropolitan one, it mostly contains a city that is its economic centre, service centre, including services linked with research, development and innovation. Competitive regions (their centres) have a benefit of good transport accessibility. They are usually well-connected to trans-European and national transport networks; the centres are

often major hubs of air, railway, road, or water transport. One of the basic prerequisites for regional competitiveness is the location and concentration of research, development and innovation institutions, often related to tertiary education institutions. In general, a good educational structure with a high proportion of people with tertiary (university) or higher secondary education is another attribute of a competitive region. Additionally, the institutional framework determines the region's growth. Specific regional competitiveness factors include, for example, tourism potential, natural resources, or technical infrastructure.

Individual factors identified here may guarantee no more than short-term competitiveness; long-term success may be achieved only in case various factors are combined favourably.

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