

*Pavol Korec*

*Comenius University Bratislava, Slovakia, Faculty of Natural Sciences  
korec@fns.uniba.sk*

## Lagging regions of Slovakia in the context of their competitiveness

**Abstract:** The regional structure research on national level in post-communist countries is even after twenty years being very topical. A number of facts contribute to this, as for example continuing deepening of regional disparities, or the effort to create an effective regional policy on various government levels. This paper notes lagging regions of Slovakia, while placing one main objective: to identify the lagging regions of Slovakia, based on the previous assessment of development of two main indicators, the unemployment rate and the economy performance. An increased interest in regional competitiveness studies within recent years has been conditional to many circumstances. In this paper we divide the discussions on chosen questions in theory and methodology of regional competitiveness studies, and an empiric analyze of competitiveness of Slovak regions, first of all lagging regions of Slovakia.

**Key words:** Lagging regions, Slovakia, competitiveness, functional urban regions (FURs), unemployment, economic aggregate (EA), basic regions

### Introduction

Among the scientists and experts across various research fields, a broadly accepted fact can be identified. And it is the understanding that regional disparities in Slovakia have emerged as one of the most obvious outcomes of the transformation period in 1989. Within a few years after 1998 (however mainly after the neo-liberal reforms implementation) Slovakia's regional differentiation has reached such extent, that it turn 'regional polarisation', 'regional disparities' and 'lagging regions' into very well known concepts and notions in scientific studies and literature. Not only were these notions ought to emphasize the large differences between the regions, but also point to the fact, that these differences bring along a chain of negative impacts that continuously place the lagging regions themselves into a helpless position. Stated in a simplified way, varying possibilities of region's ability to adapt to changing social and economic conditions are considered to be the main reason of regional disparities within space.

The topic concerning lagging regions in connection to regional structure of Slovakia, their identification process, evaluation, as well as possibilities to further promotion of the situation existent, has managed to catch the attention of publications and scientific studies among geographers', sociologists' and economists' research. This paper aims to target in three main goals. First of them is grounded in evaluation of two indicators' development – the unemployment rate and the economics performance. Based on an analysis of these two (as one of possible options), we attempt to present the pattern of lagging regions of Slovakia. Our second main goal is to yield a discussion on the concept of regional competitiveness in conditions of Central Europe and Eastern (Post-Communist) Europe countries.

## Lagging regions of Slovakia

### Methods and data

This study does not aim to evaluate the regional differentiation structure of Slovakia in a complex way, its primary goal is the lacking regions of Slovakia identification. Two issues are concerned crucial from the methodological point of view. The first question is the determination and the delineation of appropriate territorial units, which stand for the basis of regional research. The second question is the choice of appropriate regional development indicators (Bezák 2000, Hampl 2005, Hampl et al. 2007, Korec 2005, 2009, Korec et al. 2009, Matlovič, Matlovičová 2005 and others). It is important to note, that this selection is strongly limited by the availability of statistical data set on particular for hierarchical level, which would allow us to detect differentiation regional structure. An important part of this second question is the aggregated (respectively synthetic indicators of economic and complex social level of development) indicators construction within pursued territorial units.

In several earlier studies, we found that when deciding which kind of spatial units we can be used for the analysis, or which units will be seen as the evaluated set of objects we do not have a great selection. Due to the very good availability of statistical data the authors often choose districts in accordance with the applicable territorial and administrative arrangement of Slovakia. This is understandable, but the districts are not the most appropriate basic spatial units mainly for two reasons: they don't are intrinsically integrated (i) and they don't are comparable in terms of size (area and population) (ii). In the present study, we selected a basic spatial unit approximated functional urban regions (AFUR), whose identification is based on the work Bezák (2000). We will not at this point justify our choice. We did it before in several works, the reader is recommended studies Korec (2009a) and Korec et al. (2009). The system AFMR is little different from FUR system that identified Bezák (2000) due to the availability of statistical data. However, differences are negligible and in any case did not affect the results of the research. Used in this study AFUR system thus consists of 49 regions (Fig. 1), that has two territorial units less than the system identified by Bezák FUR (2000).

When selecting indicators to report on the level of social development of the regions, and subsequently the possibility of identification of backward regions, we started from accepting the views of several authors who have considered economic performance and unemployment rate as two key indicators (Baldwin, Martin 2003, Hampl 2005, Tvrdoň, Šuranová 2007, Affuso et al. 2011, Matlovič 2004, Matlovič, Matlovičová 2011 and others). We used data that publishes Institute of work, social affairs and family as relevant value for the unemployment rate (UNE). Please note that the unemployment rate utilized expresses the proportion of the number of available unemployed to the number of economically active and working with the data for the month of December of the reference year.

The indicators' selection process concerning the level of the economy of the region remains a complicated task. Regional GDP per capita is the most often used for this purpose. For example, this particular indicator has been chosen in the European Union's regional disparities assessment and subsequently within the process of the rules for regional aid convergence establishment. We consider regional GDP per capita one appropriate indicator of economic development of the region, even despite some critical comments. The fact that the practice provides statistical data on regional GDP only to the NUTS 3 level (ie in Slovakia after the county level in accordance with the applicable territorial and administrative arrangement of Slovakia, today large territorial self-governing units) is an obstacle for the purpose of our research. For districts, these data are not available.

The economic aggregate (EA) is considered a very suitable indicator of economic development or of the economic level reached by a region. The EA presents the number of jobs in a region and the average monthly wages of employees (in firms with 20 or more employees) in that region. Due to the availability of data, it is possible to calculate the EA for the region's economy as a whole, as well as the value of EA generated by different sectors of the economy. EA can be

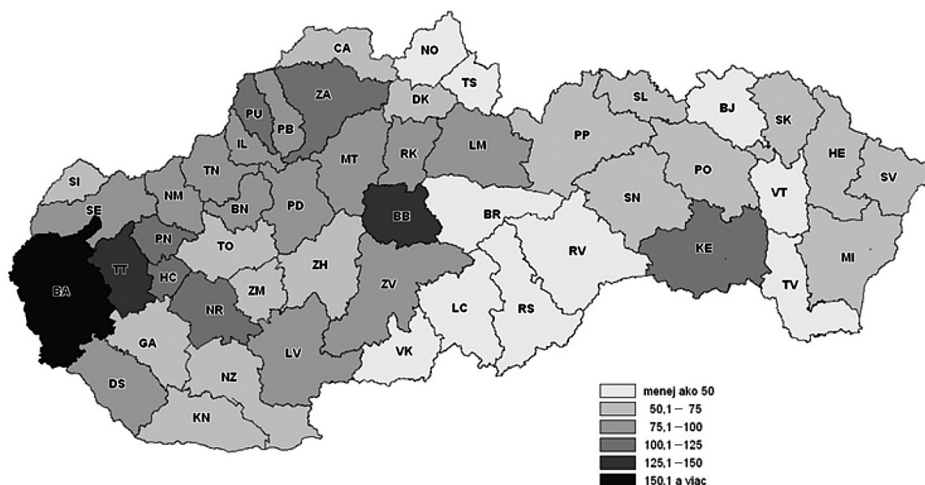


Fig. 1. Relative economic aggregate (social variant) in year 2009 (SR = 100)

Source: Data of Table 1.

attributed to a similar explanatory value as mentioned indicators of regional GDP (Hampl 2005, Korec 2009a). Use of EA in research on the level of regional economic development has also been substantiated in more details by Hampl 2005). According to his work, the EA bears not only the economic but also the complex societal character due to the social and cultural homogeneity of the transforming states of the Central Europe. Because of this, it is appropriate also for the synthetic evaluation of the development of the chosen territorial units. We utilized a social variant of this indicator to assess the level of economic development (regional EA/number of population of the region), which appeared more preferable than the geographic variant (regional EA/1 square km area of the region).

The reference value, utilized in interpreting the results of the empirical part is the average of the indicator used, for the level of Slovakia as a whole. This average captures the relative value of 100. This value is then extended to the comparison of the values of individual AFUR, the relative values expressed crossing AFUR upward, respectively bottom shows the percentage of AFUR level reached in the monitored indicator, unemployment rate, respectively regional EA per person. Crucial in the process of identifying lagging, (in risk) Slovak regions in terms of their own economic stagnation and possible social problems with the highest degree of threat are those AFUR, where unemployment exceeds the average value by 50%, or between 25–50% above the national average (therefore at intervals of 150.0 and 125.1 to 150.0 or more). For the second monitored indicator, regional EA per person, the most critical position have the AFUR, where the relative value of this indicator falls below 50%, or is in the range of 25–50% below the national average (thus in the range 50.0 and from 50.1 to 75.0 or less).

## Identification of lagging regions of Slovakia

Table 1 presents information, based on the lagging regions of Slovakia identification process. According to the methodology utilized (and explained above) we list 16 AFURs within the group of ‘lagging regions’. Table 2 shows these particular regions, allowing us to compare the development of the two indicators in each of the regions. The list of regions has been created in a ‘geographical way’, beginning with regions in the West, and moving on to those in the East of Slovakia.

Table 1. Comparison of the relative economic aggregate and relative unemployment in Slovakia in years 1997 and 2009 according of the approximated functional urban regions

ID	AFUR	Relative economic aggregate		Relative unemployment	
		year 1997	year 2009	year 1997	year 2009
BA	Bratislava	178.4	267.2	32.9	34.5
BB	Banská Bystrica	128.3	137.4	42.7	66.6
BJ	Bardejov	54.2	44.2	162.2	173.8
BN	Bánovce nad Bebravou	78.2	75.5	92.1	76.7
BR	Brezno	92.9	46.7	120.3	145.0
CA	Čadca	57.0	53.2	93.5	87.8

DK	Dolný Kubín	99.8	63.2	119.5	115.2
DS	Dunajská Streda	65.7	77.8	115.0	73.4
GA	Galanta	66.4	74.8	111.4	59.3
HC	Hlohovec	93.8	112.0	72.5	60.4
HE	Humenné	82.4	69.6	136.8	134.3
IL	Ilava	89.4	80.5	52.5	70.2
KE	Košice	136.5	115.5	96.6	99.9
KN	Komárno	76.7	63.8	131.8	118.9
LC	Lučenec	78.2	48.8	151.5	184.6
LM	Liptovský Mikuláš	106.8	95.5	59.1	87.5
LV	Levice	96.4	77.1	139.0	115.5
MI	Michalovce	89.8	54.0	177.6	148.0
MT	Martin	109.0	77.4	82.4	82.0
NM	Nové Mesto nad Váhom	98.7	99.2	60.8	76.0
NO	Námestovo	45.2	49.6	139.0	105.8
NR	Nitra	94.6	99.3	85.9	60.9
NZ	Nové Zámky	70.5	60.8	124.1	100.4
PB	Považská Bystrica	73.1	82.2	83.5	107.0
PD	Prievidza	107.1	81.5	69.5	88.1
PN	Piešťany	79.8	104.9	53.5	61.6
PO	Prešov	73.4	62.9	128.7	145.0
PP	Poprad	88.0	74.8	137.6	126.9
PU	Púchov	126.9	124.7	60.7	66.5
RK	Ružomberok	95.6	80.5	85.5	87.8
RS	Rímovská Sobota	71.0	44.1	203.4	262.9
RV	Rožňava	79.6	45.7	178.7	226.6
SE	Senica	103.1	75.1	82.7	102.0
SI	Skalica	79.8	71.7	71.8	91.2
SK	Svidník	56.6	52.6	154.9	160.4
SL	Stará Ľubovňa	56.4	53.3	105.2	102.0
SN	Spišská Nová Ves	70.9	60.9	150.4	137.8
SV	Snina	60.2	54.6	142.1	176.2
TN	Trenčín	109.0	96.6	33.6	56.3
TO	Topoľčany	75.1	68.1	102.7	93.7
TS	Tvrdošín	82.3	39.4	114.2	104.3
TT	Trnava	128.0	150.2	69.8	49.3
TV	Trebišov	70.1	47.5	174.0	199.3
VK	Veľký Krtíš	73.7	39.9	176.4	187.1
VT	Vranov nad Topľou	58.7	39.6	207.9	168.8
ZA	Žilina	100.9	106.2	76.4	74.2
ZH	Žiar nad Hronom	103.3	72.0	98.3	134.2
ZM	Zlaté Moravce	73.8	54.5	109.9	91.0
ZV	Zvolen	101.1	87.9	87.0	115.1
	Slovenská republika	100.0	100.0	100.0	100.0

Source: Regionálne porovnávania v Slovenskej republike. Štatistický úrad SR, 2010. Základné ukazovatele o trhu práce v SR. ÚPSVAR 1997, 2009.

Table 2. Types of lagging regions of Slovakia

Type		year 1997	year 2009	year 1997	year 2009
I	Veľký Krtíš	73.7	39.9	176.4	187.1
I	Lučenec	78.2	48.8	151.5	184.6
I	Rimavská Sobota	71.0	44.1	203.4	262.9
I	Rožňava	79.6	45.7	178.7	226.6
I	Bardejov	54.2	44.2	162.2	173.8
I	Vranov nad Topľou	58.7	39.6	207.9	168.8
I	Trebišov	70.1	47.5	174.0	199.3
II	Brezno	92.9	46.7	120.3	145.0
II	Svidník	56.6	52.6	154.9	160.4
II	Snina	60.2	54.6	142.1	176.2
III	Žiar nad Hronom	103.3	72.0	98.3	134.2
III	Poprad	88.0	74.8	137.6	126.9
III	Spišská Nová Ves	70.9	60.9	150.4	137.8
III	Prešov	73.4	62.9	128.7	145.0
III	Humenné	82.4	69.6	136.8	134.3
III	Michalovce	89.8	54.0	177.6	148.0

Source: Table 1.

Except for five AFURs (Vranov nad Topľou, Poprad, Spišská Nová Ves, Humenné a Michalovce), all of the 16 lagging AFURs show that the level of 'relative EA' (between 1997 and 2009) as well as the value of 'relative UNE' have both gone worse. A couple of earlier studies (Korec, Ondoš 2006, Korec 2009b) have emphasized that the after 1989 industrial companies collapse, together with the decay of agricultural companies in these regions are of a key importance of their actual lagging. Concerning Table 2, it is important to note a certain level of 'statistical determination' of presented results. AFURs Brezno, Svidník and Snina appear to be the closest to 'most vulnerable' – the first type of lagging. On the other hand, values of AFUR Poprad suggest, that this region is likely to leave this group of lagging regions.

Fig. 1 presents the spatial differentiation of the EA indicator in 2009. The representation on Fig. 2 is constructed according to the list of regions in Table 2 and it demonstrates the spatial deployment of all the types of lagging regions. At this particular point, it is important to note the two following facts. First of them is the verification stating, that the lagging regions of Slovakia are explicitly characteristic for the Southern part of Central Slovakia and the Eastern Slovakia. Four of the lagging regions within Type I (AFURs Veľký Krtíš, Lučenec, Rimavská Sobota a Rožňava) continuously complete the South of the central part of the country and three of the lagging regions within Type I (AFURs Trebišov, Vranov nad Topľou a Bardejov) territorially tie to one another, forming a belt that continues from the Hungarian border (South) onto the Polish bor-



der (North). Five of these regions are neighbouring Hungaria on the South. The group Type II counts three other lagging regions (AFURs Brezno, Svidník a Snina). In terms of indicators, these regions are the closest to regions within Type I. These facts point to the fact, that there are two main concentrations of extremely stagnant regions identifiable across Slovakia – the southern part of Central Slovakia and the ‘North-to-South belt’ at the Eastern Slovakia. Five of the regions within Type III (AFURs Poprad, Spišská Nová Ves, Prešov, Humenné a Michalovce) seem to fill the rest of the open space in between the regions of Type I and Type II.

The second key fact emerging as one of the findings is a relatively clear confirmation of results, presented by a number of earlier research studies (Korec, Ondoš 2006, Korec 2009a). In first of these studies, a different methodology has been utilized three main lagging regions of Slovakia: the South of central part of the country (AFURs Veľký Krtíš, Lučenec, Rimavská Sobota and Rožňava), the North-Eastern Slovakia (AFURs Poprad, Stará Ľubovňa, Spišská Nová Ves, Poprad a Bardejov) and the Eastern Slovakia (AFURs Svidník, Humenné, Snina, Vranov nad Topľou, Michalovce a Trebišov). Here, please note, that this particular study based the empiric research on the 2004’s dataset, and to an extend certifies our assumption – that the spatial pattern of Slovakia’s regional structure has been stabilized in earlier years already (Korec 2005, 2009a, Korec, Ondoš 2004, 2006 and others). The study of Korec (2009a), in which data from 2007

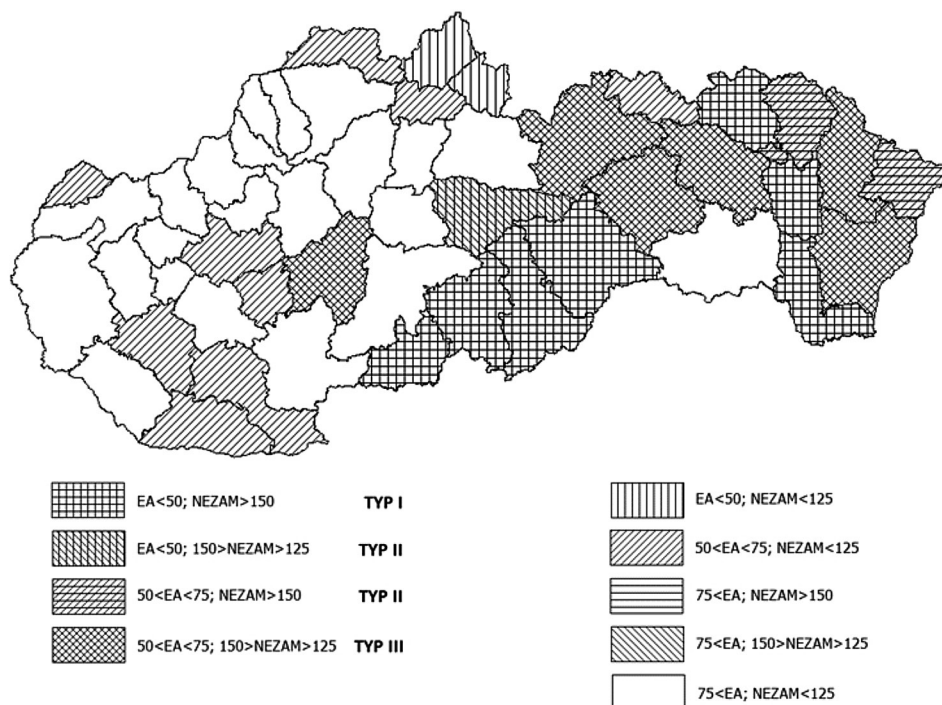


Fig. 2. Identification of lagging regions of Slovakia in year 2009

year were utilized, and seven main characteristics respected (the social-economic aggregate value in 2007, the common historical development of a territory, the primary potential – resulting from the location and natural conditions, the quality of transport links, the demographic structure and human capital potential. Specific regional economic structures and current development possibilities of the regions) has defined 12 basic development units – regions of Slovakia (Fig. 3). Besides four ‘open’ regions and five regions of partial adaptation, in a rather clear way, three lagging regions emerged from this specification as well: Southern part of the Central Slovakia (AFURs Veľký Krtíš, Lučenec, Rimavská Sobota and Rožňava), North-East Slovakia (AFURs Poprad, Stará Ľubovňa, Spišská Nová Ves, Poprad and Bardejov) and Eastern Slovakia (AFURs Svidník, Humenné, Snina, Vranov nad Topľou, Michalovce and Trebišov).

Specific AFURs significantly show their individuality and due to their relatively small area expanse as well as the low population size, their characteristics tend to undergo changes quite easily. That is one of the reasons why these units are not appropriate for regional policy tools’ application. For this reason, we consider important to delimitate the lagging regions of Slovakia on a higher level of territorial hierarchy (as larger regional units). However, according to the results of earlier research papers (Table 1 and Table 2, Fig. 2) we are still able to consider these regions (continuously identified as lagging) a reality of Slovakia’s regional structure.

## Regional Competitiveness

### Theoretical-metodological problems of regional competitiveness

The primary discussion on the regional competitiveness has been previously done in one of the studies published (Korec et al. 2011). Our purpose at this point is to point out specific phenomena concerning this topic, in connection to regional competitiveness of Slovak regions research. We consider an understanding of regional competitiveness according to European Commission (European Commission 1999) to be a good starting point. According to the definition, regional competitiveness is: the ability of regions to produce goods and services that can succeed in competition on international market and at the same time sustain a high level of income of the region’s population. More generally “Regional competitiveness lies within the ability of a region to continuously produce goods, generate a relatively high income and retain an adequate level of employment, while this region is exposed to outer national, and global competition”. The Polish ‘school of geography’ offers a good definition as well (Gaczek, Rykiel 2000, Markowski 2005, Ratajczak 2007, Czyz 2010 and others). Stating that regional competitiveness is: “the region’s ability to adapt to changing economic, social, and environmental challenges and tasks, as well as the ability to generate new conditions (possibilities) for development that allow the region to maintain or enhance its position within national or international system”.



There is a number of foundational phenomena, conditioning the current raised level of awareness and attention that takes place within regional competitiveness academic research. On one hand the influence of global economic crisis which evokes a strong interest in regional possibilities' identification, in order to lead the region to perform efficiently not only nationally, but in global competition (i). On the other hand the mechanisms towards a continuous EU-cohesion policy and aspiration to regional convergence (which conditions efforts on resource identification to raise the level of their competitiveness) (ii). The institutional theories of regional development place the emphasize on knowledge economy, innovation, creativity, institutions and other various factors of regional development (iii). The last, but not the least is a truly pressing need for the regional disparities' interconnectedness exploration and their deeper understanding (iv).

A number of authors, for example Huggins (2003), Kitson (2004), Enyedi (2009), Hajko et al. (2011) and others suggest, that the academic research sphere puts more and more emphasize to the question of regional competitiveness on one hand, and on the other at the moment we are still lacking a common theoretical approach towards the concept of regional (cities or localities) competitiveness. According to Enyedi (2009), the current discussions on regional competitiveness takes place within a rather simplified dimension. He emphasizes the importance of understanding the two following facts: a) the regions themselves are not competing units, it is rather the companies and institutions in their borders, that do compete, b) there are unsuccessful firms within prosperous regions and successful companies in stagnation regions, c) the title 'competitive region' directly notes that it possesses a number of local factors, favourable for the success of firms and institutions, d) the competitiveness is not a solely economic notion, but it has a strong social and cultural dimension (Enyedi 2009).

The concept of competitive region expresses in fact a state or situation, within which this particular region has a number of local factors to utilize and that these are a key for successful functioning of firms and institutions. Virtually, all authors dealing with these questions would directly or indirectly add, that the competitiveness has to be sustainable and not accessed through special short-term modification of certain regional conditions (Porter 1992, 1999, Martin 2004, Gardiner a kol. 2004, Šikula 2006, Viturka 2007, Wokoun 2009 and others).

Krugman (1994, 1996) has repeatedly placed a critique upon the usage of 'competitiveness' as a notion, stating that its frequent use has come too far and has created a dangerous obsession around this concept on national and regional level. He has questioned the meaning of this notion, exploring weather it can speak of more than just productivity rate, because the rising level of living standard within particular states and regions is often highly determined by a rising productivity. A number of authors react with moving the attention towards the importance of assessing the level of regional competitiveness with other different indicators (not only through productivity). They suggest, that regions compete one another for example in the tourism attractiveness, the suitable environment for cultural events, or other various 'qualities' (Turok 2003, Enyedi 2009, Gorzelak 2009, Affuso et al. 2011, Cudny et al. 2012 and others).

Following the raising influence of institutional theories of regional development (The theory of learning regions, Regional innovation systems (RIS), The Triple Helix, The theory of production zones, and others) the research of regional competitiveness has moved mainly towards innovation, new technologies, investments, research and development basis, creative industries and so on (Etzkowicz 2002, Wokoun 2009, Blažek Uhlíř 2011 and others). However, some authors such as Martin et al. (2004) alert, that it is first crucial to understand the nature of competitiveness between the regions, above all in terms of its sustainability. According to these authors, regions do compete in three main fields: they fight on the level of attracting foreign investments as private or public capital (i), they put efforts to gain and maintain prosperous firms within their borders, as well as dynamic entrepreneurs and creative work force (ii), they aim in development, new technologies use and development, in connection to knowledge and innovation-based activities (iii). In global measures, one could easily agree with this approach, because these assumptions of future development of new technologies and innovation, learning process, firm functioning, institutional influence, or other 'soft' cultural characteristics of regions (traditions, the entrepreneurial culture, work etiquette and others) have truly become immanent attributes of successful regions. However, we find a deeper discussion concerning new technologies, innovation and creativity important to be involved when speaking of Central or Eastern European post-communist countries.

Blažek, Uhlíř (2011) note, that three basic theoretical approaches are accepted among the field of regional development and competitiveness research: 1) Theories of production zones, clusters, learning regions, triple helix and regional innovation systems, 2) Theories of global production networks, resp. global value chains (GPN, resp. GVC) and 3) The new economic geography (NEG). According to this publication, when considering the regional development strategies, these theoretic strands emphasize as crucial mostly: a) the importance of city's/region's position within the settlement hierarchy (metropolitan and non-metropolitan regions; vertical geographic location); b) the role of geographical location within the global scale, as well as the scale of states; and c) human capital (as resources of innovation potential, broadly understood as 'culture').

A key implication of the vertical location, according to authors, is the spatial pattern of labour distribution among big corporations: headquarters and development centres – in metropolitan regions; centres of manufactory – in stagnation regions. Such 'genetic structure' replies the regional structure with direct implications to the structure/quality of local labour market, level of wages and many more multiplications. The reasons for differences between regions do not emerge only from the differing economy structure, but principally lies within the functional labour distribution among certain economy sectors. This fact is important to be noted while discussing the competitiveness of Slovakian regions (the region of Bratislava – developed Western regions and metropolitan regions – the lagging regions of the East and outlands/countryside), as well as the national and international context of competitiveness.

## Competitiveness of Central-European Regions

Most of the regional competitiveness theoretical concepts consider the knowledge-based economy, innovation and creativity the key factors of the regional economy competitiveness. With respect to this fact, we dare to reclaim, that the concerning concepts (that emphasize the importance of knowledge-based economy) have been empirically tested within the most developed regions of Western European countries or within North America. These regions were already characteristic with a solid knowledge base – the top universities and research centres. However, when speaking of the regional competitiveness research in semi-peripheral countries, we consider important to include other factors into the analysis itself. Countries that have undergone serious structural economic changes, or are exposed to very specific regional development conditions (such as the “V4” member states) would represent a suitable example in this sense. Even though the Central Europe and the “V4” countries are far from being a homogenous spatial formation, in their relationship to endogenous factors and forces that support local competitiveness, we have to admit they are characterized by some attributes, which allow them to differ from economically more developed – West European countries.

In accordance with many authors (Enyedi 2009, Czyz 2010, Korec et al. 2012, Ženka et al. 2013 and others) and in context of the regional competitiveness discussion within the conditions of post-communist countries within Central and Eastern Europe, it is necessary to highlight the following attributes of these countries (“V4”, Slovakia): a) a historically conditioned “West-to-East gradient” influencing the possibilities for successful development and emerging as an outcome of the regions’ location – closer or further from the Western Europe border; b) low population density in these countries as well as subtle economy outturn in their regions (a ‘subtle economy’ in case of Slovakia very sensitive to social changes or other stimuli); c) the administrative division of these countries on the level of NUTS 2, NUTS 3 as well as NUTS 4 appears rather inappropriate, not being respectful to the real geographical organization of space; in case of Slovakia, the administrative structuring on the level of NUTS 3 does bring significant complications implying the effectiveness of regional policy; d) most of the key non-metropolis regions of the “V4” countries are oriented towards export, and therefore dependant on direct foreign investments, while the knowledge-based sector is lacking in development, and the competitiveness stands on industry mainly; e) “the capitalism” of the “V4” countries has shown its unique character in a number of senses, being marked as ‘the dependent market economy’ by many authors (meaning: low production costs – manifested as a relatively cheap and qualified labour force, state budget grants (aids) for foreign investors, good geographical location, a relative stability in the context of political issues), it shows this is an economy that depends on foreign investors and a ‘pro-investment policy set up’ of the country; f) the Central and Eastern European countries are considered to be situated in between the production (industrial) and the innovation stage, while comparing the Slovakian regions to the regions within the other countries, we find that they are more dependent on industrial production.

In Slovakia, as well as in the rest of the countries in Central and Eastern Europe, there is an obvious lack of the “fifth sector”, which has a high potential to kick-start the economy and deliver new opportunities for sustainable development. We employ the traditional economy sectors: agriculture and forestry (i), the manufacturing sector (industry and building) (ii), which both are on the decline in context of the number of employees, as well as the production outputs. Followed up by a relatively vast-understood sector of services – basic and commercial (iii), which are still in the stage of developing; and naturally, the public (state) sector (iv) – not producing market values, and often criticised for being over-sized and non-effective. We do miss the real ‘fifth sector’ activity through institutions (universities of a high quality, academic-research and development centres, the firms’ research and development, and so on.), which could enhance and restart the sustainability of our economy through a solid knowledge base, creating values through innovation.

The national and regional economies based on the manufacturing sector and benefiting from low labor costs or subsidized power resources are probably not viable. For instance, when the workforce in Visegrad countries will get more expensive, which is probably just a question of time, and diminishing state resources will no longer covering subsidized energy for multinational companies, who provide large number of manufacturing jobs, major problems may begin. The Visegrad countries and Slovakia in particular, obviously benefit from automotive industry, and other manufacturing sectors locating plants using global state-of-art technologies. Imported technology partly improves the position of these economies in terms of competitiveness, but still the state of economics in the Visegrad countries needs to be described as ‘at the edge’. Knowledge-intensive economy and the ability to create commercial innovation should in long-term perspective be considered crucially important for reaching a sustainable competitiveness of their regions.

To conclude this brief discussion of the concept of regional competitiveness in post-socialist Central and Eastern Europe, few remarks need to summarize the statement. The production-oriented companies, the branches of multinational companies dependent on the actions and decisions of the global headquarters are the key-stones of the most regional economies. Multinational companies have in the same time no motivation in development of local research and development, or cooperation with universities. The production-oriented sector is not achieving the desired results from strategic applied innovation. Public regional policies focusing creation of linkages between the academic and the business environment are generally inefficient, in particular within non-metropolitan regions. In spite of the current dependency on multinational companies in the Central and Eastern Europe it seems necessary especially in long-term perspective, to reduce this dependency and prefer development of autochthonous research and development and universities in selected metropolitan centers only.

The concept of regional competitiveness in Slovakia, in our opinion also in other Central and Eastern European countries, should respect following points: a) impact of critical endogenous regional factors, b) current stage of economic

transition, c) effects of globalization, d) ambitions of local companies to expand on the global markets and to improve their position in global production networks and d) opportunity of developing own research and development in response to current stocks of human capital, level of institutions, and infrastructure.

## **Lagging regions of Slovakia in the context of their competitiveness**

This study is based on proxy indicators, which possess the ability to demonstrate the needed level of real components, understood as crucial and determining when speaking of regional competitiveness (the economy performance, the effect of labour force use, and to a certain extent the economy's sector structure). However, still many factor of a high importance (such as the regional culture in its broad context; Lorimer 2005, Zarycki 2007, 2010, Novotný 2011, Štefančík 2012, Korec et al. 2012 and others) are not possible to undergo a statistic analysis and their influence can therefore be evaluated only indirectly. The regional competitiveness is represented through the following three mutually dependent economic indicators on a particular regional level. These factors are compatible with definitions of competitiveness itself, mentioned above: the economic aggregate (EA) of a region per capita, in its social variant (i); the work productivity, counted as a ratio of EA and economically active population (ii); and the level of employment rate (iii).

The spatial differentiation of EA values has been assessed before. Hence, at this point is only presented by Fig. 2. However, we aim to focus the attention towards the other two indicators' analyse. The work productivity is perceived by many authors as an important indicator of the regional competitiveness. The economy growth can be reached through a low productivity rate (in this context through many workers on many lower-paid and lower-qualified positions), and therefore its monitoring is of a high importance. The spatial differentiation of work productivity in Slovak regions in 2009 shows a similar pattern as the differentiation of the EA. The relative values of this indicator range from 32,4% (AFUR Snina), to 245,6% (AFUR Bratislava); selecting out AFUR Bratislava – to 140,0% (AFUR Trnava) (Table 3). Comparing the values of the work productivity and EA per capita we find that across a few AFURs, the values of relative productivity are significantly lower than the EA per capita (AFURs Snina, Bardejov, Svidník, Čadca, Hlohovec, Dunajská Streda, Galanta, Skalica, Senica a others). On the other hand, we find AFURs, where the relative work productivity reaches higher than the EA per capita (AFURs Košice, Žilina, Trenčín, Prešov and others). In this context, the results correspond to the facts, mentioned above; within the first group of selected AFURs, the economy performance is enhanced by high numbers of workers, while the second group is characteristic with lower number of workers.

The unemployment rate is also considered to be an important regional-competitiveness indicator, mainly because in directly points to a level of effectiveness,

which the locally available labour force is employed with. The average unemployment rate in Slovakia, dated in 2009 reached 58,9%, while individual AFURs were represented with values reaching from 43,2% (AFUR Rimavská Sobota) to 70,7% (AFUR Bratislava). That points, in fact to a rather high variability. The relative values were captured between 73,3% (AFUR Rimavská Sobota) and 119,9% (AFUR Bratislava; Table 3). In comparison, this indicator in essence shows clearly, that its variability has not reached the level of variability of the two indicators mentioned above. Changes in values, reflecting the unemployment rate in 2007,

Table 3. Relative values of economic aggregate (1), work productivity (2) a employment rate (3) in year 2009 according AFURs (SR = 100).

AFUR	1	2	3	AFUR	1	2	3
BA Bratislava	267.2	245.6	119.9	PN Piešťany	104.9	79.3	115.9
BB Banská Bystrica	137.4	135.4	107.9	PO Prešov	62.9	72.5	87.4
BV Bardejov	44.2	33.9	87.0	PP Poprad	74.8	83.4	94.9
BN Bánovce nad Bebr.	75.5	71.9	102.3	PU Púchov	124.7	100.9	107.7
BR Brezno	46.7	51.3	90.8	RK Ružomberok	80.5	78.4	101.3
CA Čadca	53.2	44.3	95.7	RS Rim. Sobota	44.1	47.9	73.3
DK Dolný Kubín	63.2	73.7	92.5	RV Rožňava	45.7	49.4	82.8
DS Dunajská Streda	77.8	51.6	103.8	SE Senica	75.1	65.4	105.2
GA Galanta	74.8	62.1	106.8	SI Skalica	71.7	53.9	109.3
HC Hlohovec	112.0	85.3	114.2	SK Svidník	52.6	37.1	89.4
HN Humenné	69.6	61.0	94.1	SL Stará Ľubovňa	53.3	48.7	93.7
IL Ilava	80.5	70.1	106.1	SN Spišská N. Ves	60.9	62.4	85.5
KE Košice	115.5	128.1	96.7	SV Snina	54.6	32.4	85.4
KN Komárno	63.8	61.8	96.2	TN Trenčín	96.6	106.4	110.3
LC Lučenec	48.8	53.5	84.1	TO Topoľčany	68.1	61.7	103.4
LM Liptovský Mikuláš	95.5	87.1	109.7	TS Tvrdošín	39.4	45.3	91.3
LV Levice	77.1	78.2	99.3	TT Trnava	149.8	140.0	114.9
MI Michalovce	54.0	65.1	84.9	TV Trebišov	47.5	50.7	76.9
MT Martin	77.4	76.9	103.9	VK Veľký Krtíš	39.9	41.9	78.3
NM Nové Mesto n.Váh.	99.2	113.0	107.1	VT Vranov nad T.	39.6	42.9	84.8
NO Námestovo	49.6	41.3	84.1	ZI Žilina	106.2	116.6	100.7
NR Nitra	100.2	99.9	110.0	ZH Žiar n. Hronom	72.0	69.1	93.5
NZ Nové Zámky	60.8	55.4	101.1	ZM Zlaté Moravce	54.5	65.5	98.5
PB Považská Bystrica	82.2	71.0	96.3	ZV Zvolen	87.9	94.1	97.7
PD Prievidza	81.5	84.3	101.3	Slovenská republika	100.0	100.0	100.0

Source: Regionálne porovnávania v Slovenskej republike. Štatistický úrad SR, 2010. Základné ukazovatele o trhu práce v SR. ÚPSVAR 2010.



2008 and 2009 have proven relatively dynamic development, as a result of the global economic crisis. However, their spatial differentiation has not changed and remained stable across Slovakia for a longer period of time. Two types of ‘clubs’ are obvious in this context; the Western one, displaying values of relative unemployment rate with values in many cases reaching over 100%, and the Eastern club with values mostly reaching under 90%.

The twelve basic regions of Slovakia were grouped, according to a logic analysis of the three evaluated indicators’ values (Table 3), into four levels, as representations of their development stage, that are showing the reached level of regional competitiveness (Fig. 3). AFUR Bratislava presents the highest level – the stage of knowledge-based (knowledge intensive) economy (Cat. A, Fig. 3). The capital-city region has been a ‘prominent pole’ of the Slovakian economy. This fact has in fact been supported by all the studies and analyses performed that concerned the topic of regional structure of Slovakia (Buček 2003, Gajdoš 2005, Rajčáková, Švecová 2009 and others). The Bratislava region has become a territory, possessing a truly developed knowledge-based, innovations-generating economy. The R&D sector is strongly represented, transnational companies’ headquarters are present and a high level of entrepreneurial activities take place as well. Trnava region, the Central Považie region and Košice region present the second development level – marked as a ‘investment acceptance stage’ (Cat. B, Fig. 3). These particular regions not only present areas possessing a high potential of investments attraction, but above all they express the ability to effectively utilize them.

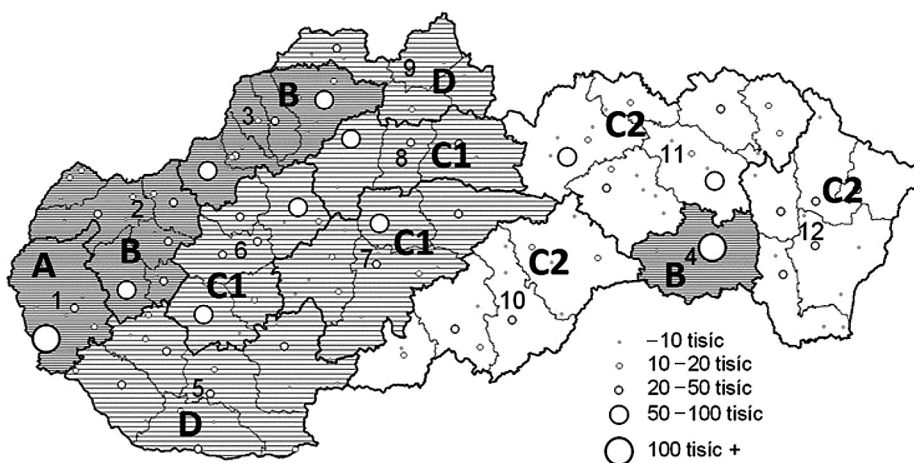


Fig. 3. Stages of regional development of basic regions of Slovakia

Source: Korec 2009a, elaborated by author

Legend: A Stage of knowledge-based economy (1 – Bratislava); B Stage of investment acceptance (2 – Trnava, 3 – Central Považie, 4 – Košice); A+B regions integrated to global networks; C1 Stage with signs of catching up (6 – Ponitrie, 7 – Pohronie, 8 – Upper Považie); C2 Neo-Fordist stage (10 – Southern part of Central Slovakia, 11 – North-Eastern Slovakia, 12 – Eastern Slovakia); D Regions yet not specifically profiled, but with potential for cross-border activities (5 – Podunajsko, 9 – Northern Slovakia)

Conveniently, these regions tend not to create innovation, but they rather function as new industrial enterprise location. Industries then employ 'high technologies' developed by the local R&D corporations. In further development these regions however will continue to contribute mainly to the local R&D strengthening. Three key and Slovak economy leading corporations are localized within this type (Peugeot-Citroen, Kia and US Steel). Regional economies within the level A1 and B1 are more or less successfully integrated in global networks across various fields of enterprise.

Regions, within the level C1 present 'the stage of catching up', in the sense of their current dynamic economy-development, in fact 'catching up' the parameters and values of regions in level B. Especially, the basic regions of Nitra and Central Pohronie are not homogenous; the metropolitan regions show signs of developed central areas that polarize other AFURs of these basic regions. The Upper Považie region, composed of AFURs Martin, Ružomberok and Liptovský Mikuláš on the other hand, appears to remain a rather homogenous region (Table 3, Fig. 3). The basic regions of Juh stredného Slovenska, Severovýchodné Slovensko a Východné Slovensko form a group within the fourth stage of development, according to Enyedi 2009) marked as 'the stage of neo-fordism' (Cat. C2, Fig. 3). These regions are characteristic with certain signs (they are mostly countryside territories without big cities, they stand at the very beginning phase of the economy restructuring, the foreign investments absent), allowing us to identify them as, and place them into the last development stage. All these three basic regions named are specific with their inner homogeneity, concerning principally the region 'juhu stredného Slovenska'. The two remaining regions – Podunajsko and 'severné Slovensko' – could be considered as not yet precisely 'profiled', standing in between the groups C1 and C2 and possessing a strong potential for cross-border activities (Cat. D, Fig. 3).

To sum up, at this point we consider posting two short remarks appropriate. First of them is to state, that the twelve basic regions introduced in fact represent a relatively independent, internally integrated territorial units within a context of many various phenomena (such as the type and level of their economy and development potential). These regions are in particular convenient for regional policy mechanisms application. The second of them there is warning that this research should be considered as a contribution to starting discussion on the competitiveness of regions of Slovakia.

## Conclusions

Since 1989, many studies published have attempted to contribute to the topic of regional structure and its development, as well as the regional lagging and different regional competitiveness level, through applied research. Virtually, with one accord, many authors do consider three endogenous regional factors critical in this sense: the settlement hierarchy factor, the factor of macro-location attractiveness and the factor of regional economic specialization. The importance of

metropolis and big cities for successful regional development is highly respected in global and national level as well.

We find important to remember that the macro-location attractiveness, resp. unattractiveness is crucial to be understood as an outcome, emerging from historically-conditioned development. A long-term process has formed these regional attributes as consequences that now appear as specific strength or advantages, resp. disadvantage of a region. The influence of an inappropriate economy specialization of Slovak regions before 1989, as well as the influence of current sector-structural changes in regional economies has been explored and commented in detail by many authors as well. Moreover, studies, conducted by a number of authors (Korec 2005, Ira et al. 2005, Gajdoš 2005, Hampl et al. 2007, Klamár 2011 and others) have proven the importance of influence by other factors, such as the effect of 'other countries depressed regions' neighbouring, the effect of 'great transport infrastructure' or the factor of 'demographic structure and human capital potential' and others.

All of the three basic regions identified and described as lagging in the sections above, indeed always tend to report values that place them into the negative-end zone concerning these factors. In fact, this type of the regional structure development has been obvious since the period of the last third of the 19th century. The 40-year long communist epoch has partially ceased this development. However, after 1989 under the influence of many various processes taking place (the restitution of a formerly deformed regional structure, the post-industrial stage of societal development, globalization, and others) the process of lagging regions' emergence in Slovakia has accelerated again. All these three processes mentioned, in their nature promote a differentiated regional development as well as the regional disparities' increase. The approach, pointing to the fact that EU regional policy, as well as the national policy applied to reduce these trends have been more than failing, is being largely accepted in this context. Considering the remaining issues and economic problems on a global scale (European, as well as Slovakian), the probability of enhancing the effectiveness of the regional policy mechanisms is less than probable.

It is not Slovakia solely, but the three remaining V4 member countries that are typical for three layers of regional competitiveness formation. First of the stages is represented by the capital city regions and it reaches the standard of EU-developed regions, while their competitiveness is grounded in knowledge-economy. The second level is composed by regions of Czech Republic, Western Slovakia, North-West part of Hungary and Polish metropolitan regions, while their competitiveness lies within the export industry, utilizing high-tech manufactories and partially commercial services. The third layer is formed by remaining regions of Poland, Slovakia and Hungary, located mainly in the Eastern parts of these countries. An absence of competitiveness is obvious, marked as a 'neo-fordist stage of economy', while the sector restructuralization is in its very beginning phase. The three lagging basic regions of Slovakia the Southern part of Central Slovakia (AFURs Veľký Krtíš, Lučenec, Rimavská Sobota a Rožňava), North-East Slovakia (AFURs Poprad, Stará Ľubovňa, Spišská Nová Ves, Poprad a Bardejov)

and the Eastern Slovakia (AFURs Svidník, Humenné, Snina, Vranov nad Topľou, Michalovce a Trebišov) can be definitely placed / included into the last level of regional competitiveness.

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## Summary

In direct or indirect way findings of many previous studies, evaluating Slovakia's regional structure development and its current pattern have been confirmed. Considering the list of these findings, we definitely suggest to include a statement, saying that one of main characteristics of socio-economic development of Slovakia after the year 1989 is a high level of regional differentiation, which ultimately reflects in the ability of underdeveloped regions to "implant". On the basis of two indicators we have identified three lagging basic regions in the regional structure of Slovakia: Southern part of Central Slovakia, North-Eastern Slovakia and Eastern Slovakia. Another broadly accepted fact is a finding, that however the regional development is being influenced by a number of factors and processes, the intensity of which within their synergies we hardly can evaluate, there is a certain limited group of factors leading to current pattern of Slovakia's regional structure (settlement hierarchy, geographic macro position, economic efficiency, transport infrastructure, globalization an ineffective regional policy on individual levels).

One of other confirmed facts is a claiming, that the current pattern of Slovakia's regional structure has arisen in earlier historical times, also including the appearance of lagging regions, and shows a certain level of stability in time (we can say, its bases have actually been laid in the period of modern industry formation in Slovakia, during the second half of 19<sup>th</sup> century). Many authors outline the fact, that the socio-economic lagging of regions in Slovakia can very easily be acknowledged by relevant social and economic indicators (unemployment rate, economic efficiency, branch structure of economy, condition of infrastructure, the average wage, selected demographical structures, level of innovations, etc.).

We identify the potential of regions (level FUR's) for competitiveness by three economic indicators of a region (linking one another), that are compatible with definitions of competitiveness as a such: the economic aggregate (EA) in region counted per capita (as its social variant) (i), the labour productivity represented by a share of regional EA on the economically active population (ii), and the employment rate (iii). In conclusion of the presented paper we attempt to subdivide 12 basic regions of Slovakia to individual states of development, corresponding to their competitiveness level within Slovakia. We managed to define four stages: A – Stage of knowledge-based economy (the basic region of Bratislava); B – Stage of investment acceptance (basic regions Trnava, Central Považie, Košice), stages A+B represent regions integrated to global networks; C1 – stage with signs of catching up (basic regions Ponitrie, Pohronie, Horné Považie), C2 – neo-Fordist stage (basic regions Southern part of Central Slovakia, North-Eastern Slovakia, Eastern Slovakia) and D – regions yet not specifically profiled, but with potential



for cross-border activities (basic regions Podunajsko, Northern Slovakia). Three lagging basic regions of Slovakia, Southern part of Central Slovakia (AFURs Veľký Krtíš, Lučenec, Rimavská Sobota and Rožňava), North-Eastern Slovakia (AFURs Poprad, Spišská Nová Ves, Stará Ľubovňa, Prešov and Bardejov) and Eastern Slovakia (AFURs Svidník, Humenné, Snina, Vranov nad Topľou, Michalovce and Trebišov) can be clearly attributed to the worse level of regional competitiveness of Slovak regions.

## **Słabiej rozwinięte regiony Słowacji w kontekście ich konkurencyjności**

**Abstrakt:** Problematyka badań zróżnicowania regionalnych struktur na poziomie krajowym w krajach postkomunistycznych jest nawet po dwudziestu latach bardzo aktualna. Uzasadnia to wiele faktów. Jednym z głównych jest postępujący proces dywergencji rozwojowej. Innym podejmowane próby opracowania i wdrożenia do zastosowań praktycznych skutecznej polityki regionalnej ograniczających skalę tych różnic. Celem artykułu jest przeprowadzenie dyskusji na temat wybranych zagadnień teorii i metodologii regionalnych badań dotyczących konkurencyjności oraz prezentacja empirycznych wyników analizy poziomu konkurencyjności regionów Słowacji, z szczególnym uwzględnieniem słabiej rozwiniętych regionów tego kraju.

**Słowa kluczowe:** regiony słabiej rozwinięte, Słowacja, konkurencyjność, funkcjonalne obszary miejskie, bezrobocie, agregaty gospodarcze, podstawowe regiony.