



ANALYSIS OF THE COMPETITIVENESS OF BULGARIA'S REGIONS AFTER THE EUROPEAN UNION ACCESSION

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ABSTRACT

The paper starts with clarification of the elusive yet very important and topical concept of competitiveness by presenting its major characteristics. The main factors determining regional competitiveness are outlined. A model to assess regional competitiveness is then suggested, which is based on integrative criteria and makes possible the depiction of a comprehensive picture of the economic, social and technological conditions in the Bulgarian regions in a comparative perspective. In accordance with the availability of regional data, its quality and the theoretical considerations about the importance of the various regional competitiveness factors, a composite index of regional competitiveness is calculated. The aim of the paper is to determine the competitiveness of the 28 Bulgarian NUTS 3 regions and how it has changed in the years of European Union membership. Determining the relative competitive positions of the Bulgarian regions allows an evaluation of their current socio-economic situation, their strengths and weaknesses, and consequently extending recommendations for improvement of the country's regional policy.

Keywords: competitiveness, regional development, regional policy, Bulgaria

INTRODUCTION

Competitiveness is a complex economic phenomenon with many existing definitions and methods of quantification on which there is no clear-cut consensus yet. The existence of many approaches, definitions and measures of competitiveness is partly due to the fact that the term comes to a greater degree from business circles and lacks clear theoretical underpinnings. At the same time the necessity of acquiring and maintaining high competitiveness has become an increasingly discussed issue both in economic literature and in policy deliberation and action. The growing importance of competitiveness can be explained by the ever deep economic integration and increased globalization, which require a constant increase in the capacity of each economic entity and subsystem of a national economy to compete.

The main contentious issue related to competitiveness stems from the level of analysis, i. e. whether the focus of research

should be on companies, sectors, regions or countries. The concept of competitiveness is well-defined on micro level and refers to the ability of a firm to survive and improve its market position in comparison with its competitors. The mechanical expansion of the concept of competitiveness from the well-defined firm level to more consolidated levels however leads to serious discussions. The best known critic of the proposition that the notion of competition and competitiveness can be transferred to country level is Paul Krugman. According to him "competitiveness is a meaningless word when applied to national economies", which can even become a wrong and dangerous obsession (1, p.44). While companies have to be competitive if they want to survive and withstand the competitive pressure of market forces, states cannot declare bankruptcy and cease operations. Moreover, the concept of national competitiveness contradicts the main conclusions from the classical trade theory about the wealth of nations which is linked to international specialization according to the comparative advantages. When countries trade with each other they do not compete in the way firms do. International trade is not a "zero sum game" and each participating country benefits.

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Nevertheless, the neoclassical trade model, on which the criticism to the concept of competitiveness is based, is not entirely relevant to modern conditions due to the adoption of a number of simplifying assumptions. Taking into account the presence in reality of a number of market imperfections that have a direct impact on competition, national competitiveness becomes a legitimate concern of decision-makers, particularly in developing and transition countries.

Next, while countries may not actually compete in global markets, locations clearly shape firm-level competitiveness (positively or negatively) through natural endowments, human capital, market access, institutions, and a host of other factors. Indeed, competitiveness is normally achieved by entrepreneurs exploiting sources of comparative advantage that are unique to a location. In an increasingly integrated economy where low transport and coordination costs allow firms substantial choice over where they locate, the notion of place-based competitiveness is important (2, p.3).

Competitiveness of regions does matter especially when they are a part of a highly competitive single market where free movement of goods, services and production factors is ensured. In this regard it is not accidentally that the European Union has allocated the largest chunk of its budget to its regional policy (almost 1/3 for the 2014-20 period) which is also an expression of solidarity between EU countries as it dedicates the bulk of its funding to the less developed regions. It helps these regions to fulfil their economic potential, in the light of one of the main aims of the EU - to promote economic, social and territorial cohesion, and solidarity among Member States.

In this context, **the objective of the paper** is to determine the competitiveness of the 28 Bulgarian NUTS 3 regions and how it has changed in the years of EU membership. Determining the relative competitive positions of the Bulgarian regions allows an evaluation of their current socio-economic situation, their strengths and weaknesses, and is crucial for the proper formulation and implementation of effective regional strategies for economic development.

MATERIAL AND METHODS

1. Regional competitiveness – concept and characteristics

One of the most popular definitions of competitiveness at the macroeconomic level is provided by the World Economic Forum,

which defines it as "the set of institutions, policies and factors that determine the level of productivity of a country" (3, p.4). It is in line with the vision of M. Porter according to whom "the only meaningful concept of competitiveness at the national level is national productivity" (4, p.16). The ability to generate greater output from any given supply of inputs is the most relevant factor of sustainable economic growth.

Another level at which competitiveness can be analyzed is the regional level which stands between the macro and the firm level. Regions represent neither simple aggregation of firms, nor are they scaled-down versions of national economies. Meyer-Stamer (2008) defines regional competitiveness as the ability of a locality or region to generate high and rising incomes and improve livelihoods of the people living there (5, p.7). Unlike the definition of the World Economic Forum focused on productivity, this definition is based entirely on the benefits to people living in a certain region and suggests that there is a close link between competitiveness and social well-being.

In a similar vein, the European Commission (2011) defines regional competitiveness as **the ability to offer an attractive and sustainable environment for firms and residents to live and work**. Sustainable in this definition is not used in the purely ecological-environmental sense, but in the sense of a region's capacity to provide an attractive environment in both the short- and long-term. This means that a region which reduces taxes to such a degree that it can no longer maintain the quality of its public infrastructure and services does not provide a sustainable, attractive environment (6, p.4). These definitions of regional competitiveness cover issues which benefit both firms and residents, such as good institutions, and issues where their interests may conflict, such as wages. The authors thus strive to balance the most important aspects of an attractive environment by combining the goals of business success with personal prosperity.

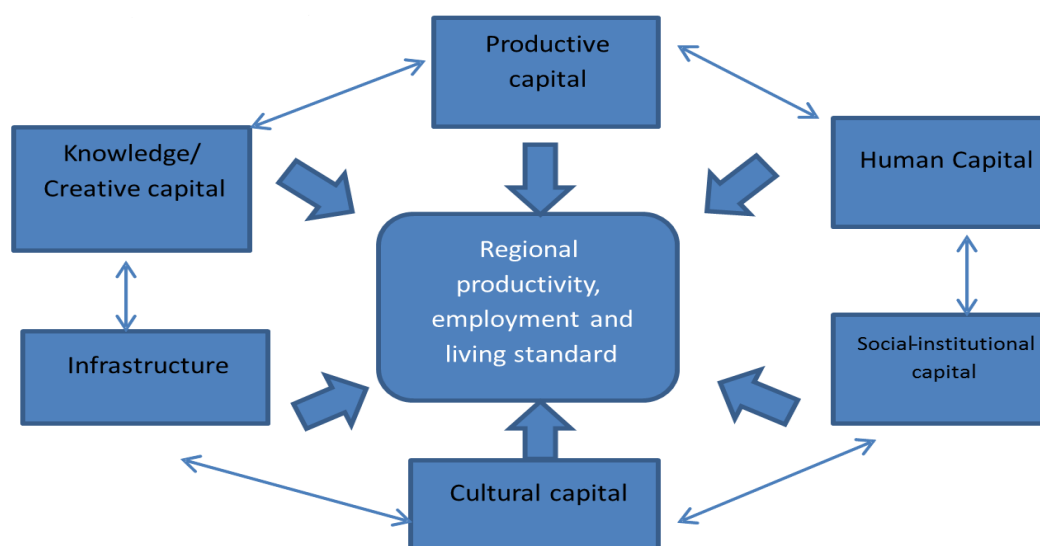
According to Cellini & Soci (2002) the regional level is possibly the most difficult and complex one at which to define competitiveness. They argue that regional competitiveness means much more than the potential ability to export or the surplus in trade balance, and that it reaches far beyond the production of goods to include a wide range of material and immaterial inputs and their mobility, from housing and infrastructure to communications and social networks (7, p.71).

Camagni (2002) acknowledges that regions do compete to attract firms (capital) and workers (labour), as well as to obtain a market share, but based on absolute advantage rather than comparative advantage. According to him, a region may be thought of as having absolute advantages when it possesses superior technological, social, infrastructural or institutional assets that are external to but which benefit individual firms such that no set of alternative factor prices would trigger a geographical shift of economic activity. These assets tend to give the region's firms, overall, a higher productivity than would otherwise be the case (8, p.2396).

A similar view is shared by the European Commission (1999), according to which the concept of regional competitiveness must be based on the notion that despite the fact that there are both highly competitive and

uncompetitive firms in every region, there are common features within a region that affect the competitiveness of all firms located there (9, p.5).

The ultimate question is: what are these “common features” and what makes them specifically regional in nature? According to Kitson M., Martin, R., & P. Tyler (2004) one way of thinking about this question is in terms of “regional externalities”, or resources that reside outside of individual local firms but which are drawn on - directly or indirectly - by those firms and which influence their efficiency, innovativeness, flexibility and dynamism: in short, their productivity and competitive advantage (10, p.994). These authors systematise the main factors determining regional competitiveness as illustrated on **Figure 1**.



Source: (10 – 995)

Figure 1. Factors of regional competitiveness

The quality and skills of the labour force (human capital), the extent, depth and orientation of social networks and institutional forms (social/institutional capital), the range and quality of cultural facilities and assets (cultural capital), the presence of an innovative and creative class (knowledge/creative capital), and the scale and quality of public infrastructure (infrastructural capital) are all just as important as, and serve to support and underpin, in the form of regional externalities, an efficient productive base to the regional economy (productive capital). For example, the ability of regions to attract skilled, creative and innovative people; to provide high quality cultural facilities; and to encourage the development of social networks and

institutional arrangements that share a common commitment to regional prosperity, are all key regional “externalities” or “assets” that benefit local firms and businesses, and hence are major aspects of regional competitive advantage (10, p.995).

After having examined the notion of regional competitiveness we can deduce the following:

- Competitiveness of a region cannot be explained by productivity alone, which is only one aspect of regional competitive advantages. The ability to maintain a high level of employment among working-age population is just as important as high productivity per employee. For example, a region in which companies have increased

their productivity as they have carried out radical layoffs and closures of production lines cannot be considered to have improved long-term competitive advantages.

- Regional competitiveness is a general, comprehensive concept, where many aspects such as economic growth, productivity, income, technological development, investment, human capital, etc. are intertwined, i.e. all those factors on which the prosperity and development of businesses and residents in a region depend.
- Although there is no universally accepted definition of regional competitiveness, this concept is related to the attempt to assess the level of well-being and the ability of regions to compete to attract and retain mobile factors of production.
- Competitiveness is always a relative concept, which means that not every region in one country can improve the competitiveness of its companies or sectors compared to the other regions, but all they could simultaneously raise the productivity and the wages boosting the overall economic welfare without changing their relative competitive positions.

2. Model for evaluation of regional competitiveness in Bulgaria

As we have already discussed competitiveness is a complex category that cannot be evaluated with a single indicator. Therefore an integrated indicator to measure Bulgarian regions' competitiveness will be used that covers its most important aspects - economic, socio-demographic, and technological. The model for evaluation of regional competitiveness that is suggested aims to offer a comprehensive picture of the economic, social and technological conditions in the regions in comparative terms, based on regularly available statistical data at the level of NUTS-3 administrative regions. Such an analysis is needed as the different competitive positions of the regions require designing various policy options and strategies for economic development.

In line with the available regional data, its quality, the theoretical considerations about the importance of the various factors and following other similar studies (11; 12; 13) 12 specific indicators relevant to regional competitiveness are selected. These 12 indicators are grouped by assigning them different weights in 3 composite indices - economic, socio-demographic and technological. In turn, these indices are systematized in a composite index of regional competitiveness.

Table 1. Indicators contained in the composite index of regional competitiveness

Indicator	Source	Weight (in the respective index, %)
<i>Economic indicators</i>		
Gross domestic product (GDP) per capita (E_1)	Eurostat	20
Labour productivity (E_2)	NSI	30
Expenditure for acquisition of fixed tangible assets per person (E_3)	NSI	20
Average annual income per household member (E_4)	NSI	20
FDI stock per person (E_5)	BNB	10
<i>Socio-demographic indicators</i>		
Unemployment rate of the population aged 15+ (S_1)	NSI	40
Natural growth rate (S_2)	NSI	20
Net migration rate (S_3)	NSI	40
<i>Technological indicators</i>		
R&D expenditure as % of GVA (T_1)	NSI	30
Relative share of the population aged 25-64 with tertiary education (T_2)	NSI	30
Net enrolment rate of the population (V-VIII grades) (T_3)	NSI	20
Relative share of households with Internet access (T_4)	NSI	20

The values of the components of the three composite indices is calculated as follows:

$$I_c = \frac{V_i - V_i \text{ minimum}}{V_i \text{ maximum} - V_i \text{ minimum}} \quad (1),$$

where V_i - value of the indicator "i" for a given region; V_i minimum - the minimum value of the indicator "i" for the 28 studied regions; V_i maximum - the maximum value of the indicator "i" for the 28 regions under study. The index takes values from 0 to 1, as 1 indicates the best performance among all the regions, and 0 - the worst.

In cases when high values of the indicator have negative economic meaning (e.g. unemployment rate) the following formula is used:

$$I_c = 1 - \frac{V_i - V_i \text{ minimum}}{V_i \text{ maximum} - V_i \text{ minimum}} \quad (2)$$

Taking into account the weight of each indicator as a component of the composite indices, their calculation is as follows:

$$\text{Economic Index (EI)} = (20 * E_1 + 30 * E_2 + 20 * E_3 + 20 * E_4 + 10 * E_5) / 100 \quad (3)$$

$$\text{Socio-demographic index (SI)} = (40 * S_1 + 20 * S_2 + 40 * S_3) / 100 \quad (4)$$

$$\text{Technological index (TI)} = (30 * T_1 + 20 * T_2 + 30 * T_3 + 20 * T_4) / 100 \quad (5)$$

Finally, the value of the regional competitiveness index, RCI, is obtained with the help of a weighted average of the 3 indices (the economic, socio-demographic and technological ones), that is:

$$\text{Regional Competitiveness Index (RCI)} = (40 * EI + 30 * SI + 30 * TI) / 100 \quad (6)$$

RESULTS

1. Competitiveness of the Bulgarian regions in the years of EU membership

Data from **Table 2** show that in 2007 the most competitive Bulgarian region is Sofia-city. The capital is the absolute leader in the economic index, which has a maximum possible value of 1, being ahead of the second-placed region Varna by nearly a double margin. The situation is similar with the technological index. Sofia-city is overtaken by Burgas and Varna only in terms of the socio-demographic index.

Table 2. Ranking of the 28 NUTS 3 regions in Bulgaria according to the regional competitiveness index (RCI) in 2007

RANKS	region	Indices			
		Economic	Socio-demographic	Technological	RCI
1	Sofia-city	1.00	0.86	0.95	0.94
2	Varna	0.52	0.88	0.48	0.61
3	Burgas	0.47	0.93	0.29	0.55
4	Plovdiv	0.34	0.78	0.37	0.48
5	Stara Zagora	0.45	0.60	0.31	0.45
6	Sofia-region	0.41	0.65	0.31	0.45
7	Blagoevgrad	0.22	0.76	0.34	0.42
8	Gabrovo	0.23	0.67	0.31	0.39
9	Pernik	0.29	0.63	0.27	0.38
10	Ruse	0.36	0.48	0.31	0.38
11	Vratsa	0.41	0.37	0.33	0.37
12	Lovech	0.23	0.48	0.42	0.36
13	Veliko Tarnovo	0.16	0.61	0.35	0.35
14	Pleven	0.20	0.51	0.32	0.33
15	Shumen	0.24	0.43	0.34	0.33
16	Kardzhali	0.13	0.66	0.21	0.31
17	Pazardzhik	0.17	0.59	0.18	0.30
18	Haskovo	0.16	0.49	0.25	0.29
19	Yambol	0.18	0.40	0.27	0.28
20	Kyustendil	0.11	0.58	0.18	0.27
21	Dobrich	0.16	0.44	0.26	0.27
22	Smolyan	0.24	0.32	0.27	0.27
23	Sliven	0.19	0.45	0.09	0.24
24	Montana	0.14	0.31	0.22	0.21
25	Vidin	0.11	0.27	0.26	0.20
26	Targovishte	0.04	0.38	0.22	0.20
27	Silistra	0.09	0.28	0.17	0.17
28	Razgrad	0.12	0.14	0.18	0.14

Source: own calculations based on Eurostat, NSI and BNB data

The last five positions in the ranking of regional competitiveness in 2007 were occupied by the regions of Razgrad, Silistra, Targovishte, Vidin and Montana. The difference in the values of the RCI between these regions and the capital was between 4.5 and 6.7 times.

Five years after Bulgaria's full EU membership a decrease in the relative competitiveness of

the capital was observed. In 2012 (the latest available regional data) Sofia-city recorded lower values compared to 2007 on the economic, technological and accordingly the regional competitiveness index, while managing to improve its result on the socio-demographic indicators. The difference between the capital and the least competitive region has been reduced from 6.7 to 4.7 times.

Table 3. Ranking of the 28 NUTS 3 regions in Bulgaria according to the regional competitiveness index (RCI) in 2012

RANKS	region	Indices			
		Economic	Socio-demographic	Technological	RCI
1	Sofia-city	0.82	0.98	0.88	0.89
2	Stara Zagora	0.33	0.82	0.43	0.51
3	Plovdiv	0.26	0.74	0.44	0.46
4	Burgas	0.35	0.70	0.35	0.45
5	Sofia-region	0.32	0.69	0.30	0.43
6	Varna	0.27	0.61	0.42	0.42
7	Ruse	0.34	0.57	0.34	0.41
8	Vratsa	0.42	0.45	0.35	0.41
9	Blagoevgrad	0.21	0.58	0.39	0.38
10	Yambol	0.29	0.45	0.37	0.36
11	Pleven	0.25	0.50	0.33	0.35
12	Dobrich	0.19	0.50	0.38	0.34
13	Gabrovo	0.17	0.60	0.30	0.34
14	Shumen	0.23	0.38	0.36	0.32
15	Kardzhali	0.05	0.69	0.27	0.31
16	Haskovo	0.15	0.50	0.32	0.31
17	Veliko Tarnovo	0.14	0.50	0.32	0.30
18	Targovishte	0.17	0.49	0.28	0.30
19	Pernik	0.17	0.56	0.20	0.30
20	Silistra	0.12	0.47	0.33	0.29
21	Lovech	0.06	0.46	0.36	0.27
22	Pazardzhik	0.12	0.45	0.25	0.26
23	Montana	0.15	0.40	0.22	0.25
24	Razgrad	0.10	0.30	0.37	0.24
25	Sliven	0.20	0.42	0.10	0.24
26	Smolyan	0.12	0.22	0.32	0.21
27	Kyustendil	0.04	0.38	0.25	0.21
28	Vidin	0.11	0.29	0.19	0.19

Source: own calculations based on Eurostat, NSI and BNB data

Among the regions that have improved their competitiveness ranking the most during the analyzed period are: Yambol (from 19th place in 2007 to 10th place in 2012), Dobrich (from 21st to 12th place) and Targovishte (from 26th to 18th place). Huge progress has been carried out by the centrally situated region of Stara Zagora, which has managed to outperform regions with a greater concentration of urban population such as Varna, Burgas and Plovdiv and already ranks on the second position after Sofia-city. The regions that have deteriorated their position in the ranking of regional competitiveness the most are: Pernik (from 9th place in 2007 to 19th place in 2012), Lovech

(from 12th to 21st place) and Kyustendil (from 20th to 27th place). A striking feature is the strong deterioration of the competitive position of Varna, which occupied the second place in 2007 and has slumped to the sixth place in 2012.

The most competitive Bulgarian regions (in the last year for which data is available) with a score of the composite index above average (>0.35) get in the top ten ranks. These are Sofia-city, Stara Zagora, Plovdiv, Burgas, Sofia-region, Varna, Ruse, Vratsa, Blagoevgrad and Yambol. At the other extreme are Vidin, Kyustendil, Smolyan,

Sliven and Razgrad whose regional competitiveness index values are under 0.25. Determining the relative competitiveness of the Bulgarian regions allows an assessment of their current socio-economic situation, their strengths and weaknesses, and thus the areas to which priority measures of regional industrial policy should be focused. As the main policy objective of increasing competitiveness is to achieve sustainable economic growth and hence a higher standard of living, it is important to evaluate the performance of Bulgarian regions on this indicator not only in comparison with each other but also with the average European level.

Data from **Table 4** show that in the years of European integration the only Bulgarian region that has managed to achieve catching up with the EU economic development is the capital city. In 2002 Sofia-city had a GDP per capita in PPS equivalent to 61% of the EU average level. In five years it has increased by 30 percentage points to 91% in 2007. In 2011 Sofia-city has already outstripped the EU-28 average level by 6%. A positive trend of rapid economic growth has been experienced by the closest region to the capital city Sofia-region, which however was able to reach only ½ of the average European GDP per capita, ranking second among Bulgarian regions.

Table 4. GDP at current market prices in purchasing power standard per inhabitant in percentage of the EU average by Bulgarian NUTS 3 regions

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EU-28	100	100	100	100	100	100	100	100	100	100
Bulgaria	32	34	35	37	38	40	44	44	44	47
Sofia-city	61	64	67	72	81	91	100	104	107	106
Sofia-region	28	30	33	36	40	38	34	47	40	52
Varna	34	36	38	39	43	45	49	47	45	47
St. Zagora	34	38	38	40	38	37	42	45	46	46
Burgas	29	32	34	39	39	38	41	39	38	42
Vratsa	35	35	34	35	32	31	35	34	37	38
Plovdiv	26	28	29	31	31	32	33	36	36	38
Gabrovo	32	32	32	33	33	36	35	36	35	37
Ruse	27	28	29	30	30	32	35	34	31	35
Dobrich	24	26	26	27	25	24	28	26	30	31
V. Tarnovo	28	27	27	27	27	26	27	28	29	30
Blagoevgrad	23	26	28	28	26	28	30	29	28	30
Pazardzhik	20	22	23	24	29	28	29	26	29	30
Smolyan	25	26	27	27	27	28	33	30	31	30
Lovech	27	28	28	28	27	31	30	28	27	29
Razgrad	27	26	25	26	25	25	26	24	26	29
Shumen	23	25	24	26	25	25	28	26	26	28
Targovishte	23	22	23	24	25	26	26	25	26	28
Pernik	26	25	29	28	27	30	49	26	27	28
Yambol	22	23	23	22	22	22	24	25	26	27
Pleven	25	25	24	26	25	25	25	25	24	26
Haskovo	23	25	25	25	24	25	27	25	24	26
Montana	23	23	23	24	23	23	26	24	23	25
Kyustendil	28	32	29	27	26	27	26	24	27	25
Vidin	24	24	24	24	22	23	24	24	22	23
Silistra	24	23	23	24	22	22	24	22	21	23
Sliven	23	23	24	24	22	21	23	22	22	23
Kardzhali	20	24	25	26	24	24	26	25	24	23

Source: Eurostat

Besides Sofia-city and Sofia-region, other regions that sustained relatively rapid rate of economic growth, shortening the gap with the EU-28 in the period 2002-2011 by more than 10 percentage points are Varna, Burgas, Stara Zagora and Plovdiv. These are the regions whose regional centers are among the cities with the largest populations. At the same time Pleven (region with a regional center the 7th largest city in Bulgaria) registered only 1 percentage point improvement and Sliven (the 8th largest city) for 10 years failed to reduce the wealth gap with the EU at all. Kyustendil, Vidin and Silistra have even worsened their socio-economic situation compared to the beginning of the period.

CONCLUSIONS

The main conclusion that may be drawn is that all regions in Bulgaria should continue efforts (own and on a national level) to increase their competitiveness and thus reduce the economic gap with the regions in the EU-28. Meanwhile, the national regional policy must take into account the vast disparities in the competitiveness of the individual regions within the country.

In the years of European integration the only Bulgarian region that has managed to achieve catching up economic development with the EU-28 is Sofia-city. A great part of Bulgaria's population, investments, research and human capital is concentrated in the capital city which determines its highest competitiveness. Relatively good results have been achieved by regions with regional centers with high population concentration and modern infrastructure (existence of international airports, ports, highways, etc.) such as Plovdiv, Varna, Burgas and Stara Zagora. These results confirm that regional development is a self-perpetuating process – economic success attracts resources and leads to accumulation of other factors of competitiveness which further accelerate economic growth and development. Therefore regional policy should be much more aggressive in regions like Kyustendil, Sliven, Vidin, Silistra, etc., which seem to have fallen into a "vicious circle" and market forces alone will hardly break it. Many of these regional centers have lost their status of growth and development poles and should be stimulated to restore their role.

Despite its imperfection (i.e. failure to cover a number of decisive factors for competitiveness, etc.) the suggested composite index of regional competitiveness can serve as an important

reference in the formulation of regional strategies for economic development. Their primary objective should be to increase the competitiveness of regions on national and international scale as the only possible way to ensure the long-term well-being of their citizens.

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