MEASURING REGIONAL COMPETITIVENESS. THE CASE OF ROMANIA

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Abstract:
The crisis has led to significant regional disparities, or at least to stopping the phenomenon of convergence observed before its outbreak. The poor performances of the five of the Romanian development regions put into question again the proper way to refer to this subject. This paper aims to critically analyse the measuring of regional competitiveness as it is revealed in literature and in the empirical studies. In order to achieve this goal, the paper brings forward some questions: What is regional competitiveness and how can someone measure the phenomenon? Is GDP per capita telling the whole story about regional competitiveness? What are the main factors explaining the differences in competitiveness for the Romanian regions? The methodology used is both qualitative and quantitative. It is based on critical analysis of the concept of "regional competitiveness" and of its estimation methods. Also, we will conduct a comparative analysis for estimation of regional competitiveness in Romania, using two different methods: regional competitiveness index developed by European Commission in 2011 and improved in 2013 (RCI 2013) and GDP per capita in 2013. The data are collected from Eurostat. We underline the fact that there is no complete measure of regional competitiveness which covers all the factors involved in describing regional competitiveness. Also, the paper aims to conclude that GDP per capita is not a sufficient tool to draw proper conclusion about regional competitiveness. Some qualitative and circumstantial factors are more appropriate to explain the differences in competitiveness results. The main conclusion is that a competitiveness index embraces more factors than purely economic aspects and it can be considered as a measure of regional competitiveness which goes beyond GDP. Through its value added, the paper may contribute to better understanding of the methods of measuring regional competitiveness and to avoid that the errors from theory could translate into practice.

Keywords: competitiveness; regions; regional competitiveness; regional competitiveness index; GDP.

JEL classification: R11; O18.

1. Introduction

The crisis has put a halt to the convergence process and in many cases has increased interregional disparities in income and employment. Before the crisis, there were still signs of the poor regions catching up to the richer ones. Since the crisis, that process seems to have stalled. Some studies (OECD, 2014) revealed

that disparities in regional GDP per capita have increased in half of the OECD countries. In the other countries, where the gap had decreased, this was typically due to worsening conditions in the leading regions rather than to improvements in the lagging regions. Inequality continues to be observed in other factors that determine well-being, such as health, air quality or safety.
Given these facts, the paper brings forward some questions: What are the factors that determine the competitiveness of a region and how can someone measure regional competitiveness? What is, first of all, regional competitiveness? Is GDP per capita telling the whole story about regional competitiveness? What are the main factors explaining the differences in competitiveness for the Romanian regions?
To address these questions, the paper will look at literature and empirical studies. The methodology is both qualitative and quantitative. It is based on critical analysis of the concept of "regional competitiveness" and of its estimation methods. Also, we will conduct a comparative analysis for estimation of regional competitiveness in Romania, using two different methods: regional competitiveness index developed by European Commission in 2011 and improved in 2013 (RCI 2013) and GDP per capita in 2013.
Romania has eight development regions, five of them being listed among the poorest 21 in the European Union in 2014. These results prove low levels of competitiveness and raise questions about the main causes of their poor performances.
The rest of this paper is organized as follows: In the next section we will underline that regional competitiveness in a vague concept and ambiguous too, which poses problems for researchers and policy makers in measuring process. The second part of the paper focuses on the critical analysis of the estimation methods of competitiveness at regional level, as they were developed in literature or empirical studies. The third section presents the comparative analysis for estimation of regional competitiveness in Romania, using different methods. A section of conclusions comes to point out the main findings and to draw up new directions of investigation the paper provides for future research. The main idea is that quantitative indicators as GDP do not tell the whole story about regional competitiveness, some qualitative and circumstantial factors being more appropriate to explain the differences in competitiveness results.

2. Defining regional competitiveness

The regional competitiveness refers to the common features characterizing all companies in one regions, including institutions, infrastructure, education, workforce skills, technology, innovation, in other words, to anything that can help a company operate in a business environment favourable for its development or, on the contrary, in a hostile one.
The interest of measuring regional competitiveness is due to the advantages that it may cause: provides evaluation of current local economic environment, identifies weaknesses of the local economy, encourages a longer term perspective on economic development process, lead to new marketing and promotional programs for the region.
Measuring regional competitiveness is not easy. On the contrary, it is a task even more difficult since the very concept of regional competitiveness suffers from not enough or misunderstanding. For example, D. Borozan (2008: 61) states that

regional competitiveness is seen in literature either as an aggregation of microeconomic competitiveness, or as a derivative of macroeconomic competitiveness. Anyway, the both perspectives do not provide a comprehensive picture of regional competitiveness. If regional policy is based on the findings of these perspectives, it may experience a failure seeking to improve regional competitiveness and thus contribute to sustainable regional growth and prosperity. This is due to the fact that each region has some unique specificities not being derived either from micro or macro-economy.

Other authors (Budd and Hirmis, 2004) mentioned that the essential problem is that territorially based actors and agencies seek to position and maintain the utility of their regions and sub-regions by reference to a set of measures and indicators that are conceptually suspect and often empirically weak.

There are interests in defining regional competitiveness for more than two decades. There are many definitions of regional competitiveness, but all converge on the same concept, whose content is not very accurate set*: competitiveness.* According to Eurostat (2014), competitiveness is the ability of an economic industry, enterprise, region or supranational assembly to generate, in a sustainable manner and in conditions of competition, a relatively high level of income and factors occupancy. At the same time, competitiveness can be a mean of sustained growth in the living standards of a nation and of maintaining the level of unemployment as low as possible.

At the beginning of the pursuits in this direction, the concept *regional competitiveness* was defined as the ability of an economy to attract and maintain firms with stable or rising market shares in an activity while maintaining or increasing standards of living for those who participate in it (Storper, 1997). Moreover, competitive regions and cities are places where both companies and people want to locate and invest in (Kitson, Martin and Tyler, 2004).

We can start the analysis of this concept from the studies of M. Porter (1998), which described the impact on the competitiveness of regional industrial clusters in three ways: increasing the productivity of companies in the region, facilitating innovation and creating new companies. Later, based on the theories of Porter, a group of researchers (Delgado et al., 2010b) developed a systematic empirical approach to identify the *role of regional clusters* - groups of industries closely related and complementary, operating in a particular region - in *regional economic performance.* The study findings were that: industries participating in powerful cluster record higher rates of employment, wages, locations and patents; new regional industries arise where there is a strong cluster; the presence of strong clusters in a region increases the opportunities in other industries and clusters. Another paper (Delgado et al., 2010a) studied *the role of regional clusters on regional entrepreneurship* and has concluded that the presence of economic complementary activities creates externalities that increase incentives and reduce barriers to the opening of new businesses and contributes to the survival of newly created companies. Labour force qualification, infrastructure and the efficiency of public institutions are common features that affect the competitiveness of all existing businesses in a particular region.

According to OECD (2014), a competitive region is one that can attract and maintain successful firms and maintain or increase standards of living for the region's inhabitants. Skilled labour and investment gravitate away from "uncompetitive" regions towards more competitive ones. The extension of the

competitiveness concept to the regional level is not too old and it's having a big influence on the direction of regional development policy. Lately, there's a revival of interest in a new form of regional policy. In the past, regional policy attempted to make regions more competitive by attracting in internationally competitive companies, but with limited success. The new approach is now mainly focused on making domestic firms more competitive. This led to an emphasis on regional assets as the source of company competitiveness, not only infrastructure but also other factors, called "soft" factors.
The emphasis on firm's performance as a way to increase regional competitiveness is the core of a recent study (Bekes and Ottaviano, 2015). The authors argue that as firms compete measuring regional competitiveness should be also based on comparing firm performance across regions. This can be accomplished by analysing their ability to access and penetrate world markets.

2. Measuring regional competitiveness

For measuring regional competitiveness there may be used either ex post indicators, such as regional GDP, GDP/capita, the annual rate of GDP growth, labour productivity, employment rate, the share of the region in the foreign market, the structure of foreign trade, or ex ante indicators, which actually refers to the sources of competitive advantages of the region than to the performance itself.
Because GDP has a central role in many studies trying to measure competitiveness, it is important to point out here some of its limits. GPD per capita can measure only material wealth, failing to provide an insight into the living standards of individuals, into the quality of their time spent outside work. GDP does not measure the household activities, the education of children in families or volunteering. It is a purely quantitative indicator, including also activities that are not in a direct and lasting relationship with individual well-being (eg, intensive exploitation of natural resources, the generation of negative externalities (pollution) or costs associated with activities related to crime, natural disasters, and accidents). Moreover, an increase in GDP per capita in nominal terms can hide a decline in personal income. It is also worth mentioning that informal activities, having significant shares in the poorest countries are not included in GDP, even if they have an important impact on that region welfare. GDP per capita provides only partial information related to competitiveness. Maintaining a constant output reported to fewer employees or to a less numerous active population or to a less numerous total population enables (from mathematical point of view) an increase in GDP per capita, meaning higher regional competitiveness (Danon, 2014). (We refer here to decomposed GDP per capita formula conducted by Ronald Martin in 2003 - GDP/Population = GDP/Total Employed * Total Employed/Active Population * Active Population/ Population).
Recently, some European researchers (Annoni and Dijkstra, 2013) developed the regional competitiveness index (RCI) that extends the traditional analysis of competitiveness as a purely economic measure to incorporate social elements too. The definition of competitiveness moves beyond the perspective of businesses to integrate the perspectives of residents or consumers. The RCI builds on the current debate that prosperity should not be measured only by GDP but also by a sum of criteria such as health or human capital developments (Stiglitz et al., 2009). The definition of regional competitiveness underpinning the RCI, which integrates the perspective of both firms and residents, is the following: '*the ability to offer an*

attractive and sustainable environment for firms and residents to live and work' (Dijkstra et al., 2011: 4).

The RCI is designed to improve the understanding of territorial competitiveness at the regional level for the reason that different regions have different strengths and weaknesses. Understanding differences in regional competitiveness may help provide an insight into social and economic conditions and offers policymakers a way to better decide policy initiatives in specific regions.

The RCI is a weighted composite measure of multiple dimensions. Each dimension, that cannot be directly observed, is indirectly quantified by a set of indicators, statistically assessed and aggregated. These different eleven dimensions are aggregated into three sub-indices of competiveness and an overall composite index, as it is shown in the Box 1.

Box 1. Regional competitiveness index (RCI) – typology of sub-indices and dimensions

Regional competitiveness index (RCI)
I. Basic sub-index
i) Institutions ii) Macroeconomic stability iii) Infrastructure iv) Health v) Basic education
II. Efficiency sub-index
vi) Higher education vii) Labour market efficiency viii) Market size
II. Innovation sub-index
ix) Technological readiness x) Business sophistication xi) Innovation

Source: Annoni and Dijkstra, 2013

The RCI therefore quantifies in a single index what may otherwise be difficult to measure: the level of competitiveness of an individual region. RCI offers the first comprehensive picture of the situation for all NUTS 2 regions in the EU‑28.

3. Regional competitiveness in Romania. A comparative analysis

In Romania, in 2013, no region had an RCI above the EU‑28 average. Furthermore, the gaps in competitiveness between Romanian capital region and the second most competitive region is quite wide, as it is shown in Table 1. Basic competitiveness, the level of efficiency competitiveness and the innovation score was below the EU‑28 average in each and every region of Romania. The level of innovative capability influences the ways in which technology is diffused within a region. The indicators within the innovation dimension include, among others, patent applications, knowledge workers, scientific publications, human resources in science and technology and (the strength of) high-tech clusters (Annoni and Dijkstra, 2013). The capital region Bucharest – Ilfov had quite high scores, but were surrounded by regions with much poorer results.

Table 1: Regional disparities in the competitiveness index, by NUTS 2 regions, 2013, Romania

	RCI 2013	Basic competitiveness sub-index	Efficiency sub-index	Innovation sub-index
Min EU-28	0	0	-1.33	0
Mid EU-28	-0.31	-1.36	0.00	-0.16
Max EU-28	-1.17	-0.24	0.11	-1.58
National average	-1.23	-1.51	-0.99	-1.47
Capital region	-0.31	-1.36	0.11	-0.16
Other NUTS regions: North-West Centre North-East South-East South-Muntenia South-West Oltenia West	 -1.23 -1.36 -1.32 -1.48 -1.34 -1.36 -1.25	 -1.48 -1.48 -1.55 -1.60 -1.50 -1.48 -1.60	 -0.97 -1.21 -1.03 -1.33 -1.11 -1.20 -0.99	 -1.49 -1.60 -1.74 -1.70 -1.71 -1.62 -1.38

Source: Eurostat

According to RCI 2013, EU-28 regions are at different stages of economic development: each EU region was assigned to one of five stages of economic development (defined on the basis of GDP per capita, expressed in relation to the EU average; stages 1–5 reflect rising levels of GDP per capita).

Table 2: GDP per capita compared with the regional competitiveness index (RCI), by NUTS 2 regions and by stage of competitiveness, 2011 and 2013, Romania

		GDP per capita, 2011 (EU-28 = 100)					
	RCI, 2013 (EU-28 = 0)	**Stage 5**	**Stage 4**	**Stage 3**	**Stage 2**	**Stage 1**	**Stage of competitiveness**
North-West	-1.23					42	1
Centre	-1.36					45	1
North-East	-1.32					29	1
South-East	-1.48					39	1
South-Muntenia	-1.34					40	1
Bucharest-Ilfov	-0.31		122				4
South-West Oltenia	-1.36					37	1
West	-1.25				54		2

Source: Eurostat

Table 2 compares the calculated RCI values obtained for each NUTS 2 region with GDP per capita (covering the 2011 reference year). The authors (Annoni and Dijkstra, 2013) concluded that there is a close relationship between the two measures and confirms that competitiveness, even when defined using a much wider range of indicators (as in the RCI), tends to be closely related to the size of GDP per capita.
However, the comparative analysis of Romanian NUTS 2 regions rankings by RCI 2013 and by GDP per capita, shown in Table 3, reveals in some cases a small gap between the two rankings, leading to some insights that should not be ignored.

Table 3: Comparative analysis of NUTS 2 regions rankings by RCI 2013 and by GDP per capita, Romania

Region	Ranking according to RCI 2013	Ranking according to GDP/capita, 2013
North-West	2	5
Centre	6/7	3
North-East	4	8
South-East	8	4
South-Muntenia	5	6
Bucharest-Ilfov	1	1
South-West Oltenia	6/7	7
West	3	2

Source: Authors determinations using Eurostat data

Examining the Tabel 3, we conclude that: Bucharest-Ilfov keeps the first positions in both rankings; South-West Oltenia, South-Muntenia and West do not change the position significantly; the major change of position in a ranking relative to the other is observed for North-West, Centre, North-East and South-East regions.
It is interesting to point out the factors that should explain such a reversal of ranks.
North-West region ranks the second position on RCI, but only the fifth on GDP per capita. The region has a good score on efficiency sub-index (Table 1), that means higher education, training and lifelong learning, labour market efficiency and market size, but low levels of labour productivity. The large share of people employed in agriculture and the defining feature of most agricultural activities as being outside the market, so immeasurable in GDP can explain the difference between this region productivity and the size of GDP per capita.
North-East region is situated on the last position according to the GDP/capita, but on the fourth according to the RCI. This can be explained by the good score on efficiency sub-index, meaning that a good quality of the higher education and the lower labour costs are very attractive for IT outsourcing activities.
In the South-East region, most of the growth is based on commerce (benefiting from port area), tourist services and construction. In 2013, construction contributed to the GDP growth of the region with more than twice the average of the EU-28. But this region records poor results on RCI, achieving the lowest score on basic sub-index (meaning institutions, health and basic educations) and also on efficiency (higher Education, labour market efficiency).

The Centre region has a relative good position at national level according to the GDP per capita, but has poor results on competitiveness sub-indexes. The central and western regions of Romania are those who have received the biggest public investment in infrastructure, becoming more attractive to private investors. North-East region owes partly its poor performance in terms of GDP to poor government allocations for road infrastructure development, being quite inaccessible and isolated on the map of commercial poles.

It is worth mentioning here that Romania has one of the largest shadow economies in Europe, estimated at more than 28% from GDP (Schneider, 2015). This means that the real individual incomes are larger than the official GDP sums up. In the same time, a large part of the poorest rural population in Romania works abroad, often sending informally money to their families left at home.

Summing up, the differences between GDP per capita and RCI rankings for Romanian development regions could be explained based on GDP measure limits and on arbitrary allocations of public funds. Even if the second factor is a very important one, we would limit our insights here on the first. It is about the fact that Romania still have a large part of its population working in agriculture, in fact in subsistence farming for the household own use, which means many activities outside the market and, of course, outside the GDP. At the same time, Romania is on the European podium for its shadow activity, which means important incomes that are not declared and included in GDP.

Conclusions

The paper has revealed the fact that the concept of “regional competitiveness” is as vague and misunderstood as the “competitiveness” term is. Also, regional competitiveness could not be reduced to GDP per capita, given its limits to measure the incomes from activities outside the market and the incomes from underground activities. The differences on competitiveness should be more properly discussed based on qualitative and circumstantial factors. Competitiveness goes more and deeper beyond GDP. The critical analysis of different ways of measuring regional competitiveness has underlined there is no complete measure of regional competitiveness which covers all the factors involved in describing regional competitiveness.

The study of competitiveness should be oriented rather on analyzing firms’ performances because they are the major economic actors and the main generators of economic wealth. The competition between companies generates competitive advantages and discussing competitiveness on a regional-territorial basis risks to move attention from the mechanisms of entrepreneurial discovery and from the intimate mechanisms of the market to redistributionist policies that will march more to what is seen, slighting what is not seen. This final insight can inspire future empirical research in this field.

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