REGIONAL ECONOMIC SUSTAINABLE DEVELOPMENT IN EU: TRENDS AND SELECTED ISSUES

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Abstract: *The intensification of globalization and the manifestation of knowledge society brings to the forefront increasingly the role of regions in the economic development, which are considered the active and causal elements of economic development. For the achievement of the desideratum of regional sustainable development, regions are trying to identify the optimum strategies from both sectors perspective, respectively public and private, them operating in interdependence and interrelation relationship for a "healthy" economy in a society. The research paper will try to emphasize the main trends and issue that defines the phenomenon of regional sustainable economic development in practice from the direction of the public sector, using the background offered by literature and the analysis of official statiscal data for empirical evidences.We estimate the analysis to offer us a new viewpoint on regional economic sustainable development with positive aspects, but also deficiencies that require solutions and policy options positioning regional strategies as an engine of development of the whole nation. Thus, we consider that the paper can be a useful viewpoint which allows researchers to include other sources of information for researching an in a much more complex approach.*

Keywords: regional economy; sustainable development; regional strategies

Introduction

By developing optimum strategies, the well-known "sustainability triangle" means creating a synergy between the three components, respectively economic, the social and the environmental. One of the key players in the regional economic sustainable development process is government with his levels (national, regional and local). In this context, authorities create the legal, fiscal, and regulatory environment that encourages job creation, competitiveness, economic growth, the improvement of quality of life. It also makes pivotal investments (named "public

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goods" by economists) that the private sector would not make. OECD (2015) see regional development as "a general effort to reduce regional disparities by supporting (employment and wealth-generating) economic activities in regions".

Regional Economic Sustainable Development is seen as a key part of the Europe 2020 vision ("The Europe 2020 Strategy"), where economy supposes as main objective "a more resource efficient, greener and more competitive economy" (the European Council, 2010) . "The Europe 2020 Strategy" was designed as the successor to the Lisbon Strategy and was adopted by the European Council on 17 June 2010. The five targets set in Europe 2020 Strategy are summarized as following: i) GDP invested in scientific research and experimental development (R&D), ii) a target of employment rates, iii) climate change and energy sustainability, iv) educational attainment, and v) fighting poverty and social exclusion. This targets are designed to boost economic performance through sustainable development and creating a friendly environment for small businesses to start-up.

Monitoring trends in regional sustainable economic development using theories, especially indicators (as monitoring tools) was conducted by a variety of institutions, from companies or civil society formations, groups of experts or research centers up to local, regional and national governments, intergovernmental organizations or international financial institutions. Differences, however notable, of the ways of construction, stage of development and effective utilization of consistent sets of indicators illustrate the complexity of the task of finding real compatibility between empirical and normative approaches that integrate the concept of sustainable economic development. In this context, GDP per capita will remain an important performance indicator nationally and regionally; but measuring progress towards regional economic sustainable development in EU requires new thinking, where will be combine benefits in GDP growth with other claims on resources, such as those related to the environment or to social inclusion.

As we shall see, however, the analysis will offer a new viewpoint on regional economic sustainable development with positive aspects, but also deficiencies that require solutions and policy options positioning regional strategies as an engine of development of the whole nation.

1. The subject of the research, methodology and state of knowledge

The scope of this study is to emphasize the main trends and issue that defines the phenomenon of regional sustainable economic development in practice from the direction of the public sector through public strategies nationally or at the level of the EU. The approach of the research paper will be first on the background offered by literature, and second will be combined the quantitative analysis, primarily based on processed data from the Eurostat's reports, OECD's reports, with the analysis and monitoring of the involved qualitative issues. In interpreting results and formulating public policy recommendations, the analysis has permanently related to the legal framework in work over the considered period of time (e.g. The Europe 2020 Strategy).

The issue proposed for debate represents the subject of distinctive research in international literature of regional development, partially being also captured in the broader context of knowledge society, innovation and sustainable development issues (Amin and Thrift, 1994; Bathelt *et al.*, 2004; Cooke *et al.*, 1997; Iammarino, 2005, Lundvall, 1992; Scott, 1996; Storper, 1997). In general, three themes (Dawkins J., 2003) are discussed throughout the regional development literature: i) the theoretical predictions regarding the convergence (Heckscher, 1919; Ohlin, 1933; Samuelson, 1953, 1949, 1948; Solow, 1956; Swan, 1956) or divergence of per capita incomes across regions over time (Weber, 1929; Hoover, 1937; Isard, 1956); ii) the assumptions regarding the importance of internal and external scale economies to regional economic growth (Hoover, 1937); and iii) the role of space in shaping regional labor market outcomes (Hotelling, 1929; Devletoglou, 1965; Eaton and Lipsey, 1978).

The first theme is the approach of the neoclassical economics theory dominated by Interregional convergence hypothesis (Heckscher, 1919; Ohlin, 1933; Samuelson, 1953, 1949, 1948), through Heckscher-Ohlin-Samuelson (HOS) theorem which explain international factor price convergence using static equilibrium trade models. Heckscher (1919) and Ohlin (1933) demonstrate that a factor-abundant region will have a comparative advantage in the production of goods that require the intensive use of that factor. This region will be specialized in the production of that goods and then will export that abundant goods and import goods for which production factors are scarce. Samuelson (1953, 1949, 1948) extended the Heckscher-Ohlin theorem to demonstrate how free trade and/or the mobility of goods serves to equalize the relative and absolute prices of factors of production across those regions engaged in trade in the long run.

As a response to the convergence hypothesis included in neoclassical economics, some researchers (Weber, 1929; Hoover, 1937; Isard, 1956) developed Location Theory, which has focused primarily on developing formal mathematical models of the optimal location of industry given the costs of transporting raw materials and final products. This theory will support through the explicit models of transportation costs, the later theories of economic growth and development, particularly the new economic geography.

The second theme, try to complete traditional Weberian location theory, developing the typology of agglomeration economies and identifying that the benefits from agglomeration include: *large-scale economies* (as a result of traditional economies of scale); *localization economies* (as a result of the firms in the same industry being collocating in the same area); and *urbanization economies* (as a result of the colocation of firms in different industries).

The third theme, based on the role of space in shaping regional labor market outcomes (Hotelling, 1929; Devletoglou, 1965; Eaton and Lipsey, 1978) has as explanation the fact that spatial proximity gives firms market power, because nearby customers would be willing to pay more for goods that can be consumed without incurring substantial transportation costs.

Nowadays, economic sustainable development can be described as an "essentially contested concept" and it can be seen as a "battlefield of knowledge"

(Long, 1992), in which different participants try to produce the relevant strategies for its stimulation, to achieve the economic growth based on value-added. Foster and Sen (1997) considers that regional development refers to fund policies and internal or external actions taken to improve areas in need of economic development.

2. Towards an economic climate change scenario under the Europe 2020 strategy

European Union's regional development landscape is highly diverse, without a tendency of a perfect homogeneity in the foreseeable future. In the context of the permanently interest of regions to find and develop strategies for stimulating economic sustainable development and reducing discrepancies, these strategies are now driven by regions economic assets and their market opportunities.

At the heart of regional statistics is the nomenclature of territorial units for statistics classification (NUTS). An overview of the EU countries in accord with the nomenclature of territorial units for statistics classification is offered by the Table 1.

Table 1. Number of NUTS regions and statistical regions by country

GEO/Numbers of administrative-territorial units (ATU)	NUTS 1	NUTS 2	NUTS 3
EU-28	***98***	***272***	***1315***
Austria	3	9	35
Belgium	3	11	44
Bulgaria	2	6	28
Cyprus	1	1	1
Croatia	1	2	21
Czech Republic	1	8	14
Denmark	1	5	11
Germany	16	38	412
Estonia	1	1	5
Ireland	1	2	8
Finland	2	5	19
France	9	26	100
Greece	4	13	51
Hungary	3	7	20
Italy	5	21	110
Latvia	1	1	6
Lithuania	1	1	10
Luxembourg	1	1	1
Malta	1	1	2
Netherlands	4	12	40
Poland	6	16	66
Portugal	3	7	30
Romania	4	8	42
Slovenia	1	2	12

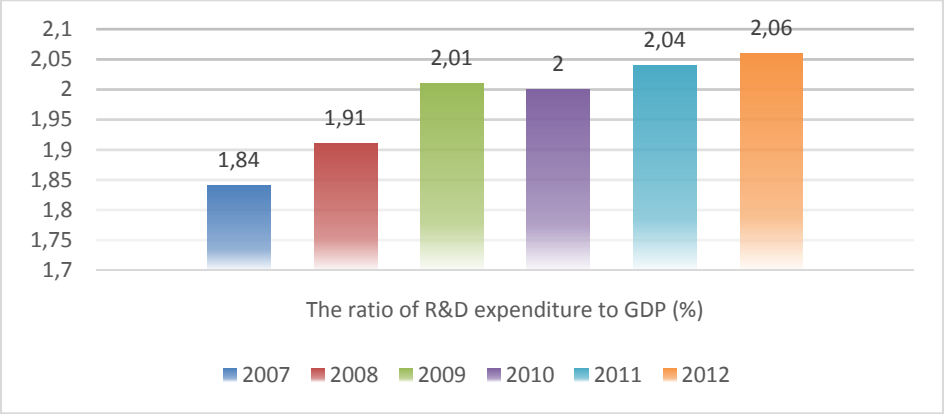
Slovakia	1	4	8
Spain	7	19	59
Sweden	3	8	21
United Kingdom	12	37	139

Source: Eurostat regional yearbook 2014

The Europe 2020 strategy wants to achieve five important targets by 2020. The first one is based on "Research and development" (R&D) by increasing combined public and private investment (in R&D) to 3 % of GDP.

Scientific research and experimental development (R&D) investments need to be taken into account in devising long-term strategies for regional sustainable development. Statistically, measuring the proportion of GDP invested in scientific research and experimental development (R&D) using the indicator gross domestic expenditure on R&D (GERD) (OECD Frascati Manual, 2002)), does not show the proportion of expenditure on R&D which contributes specifically to regional sustainable development, but measure the so-called R&D intensity. The indicators cover the resources devoted to research and development, patent families, technology balance of payments and international trade in R&D-intensive industries. The limitation of this indicator, in our opinion, is that expenditure does not reflect the potential of R&D in a given country, but only the effort conducted in a given year. Researchers as a percentage of population, labour force, or employment, are also necessary indicators. Scientists are improving their understanding on policy-relevant issues such as climate change, growth in resource consumption rates, demographic trends, and environmental degradation.

Figure 1. R&D Intensity in EU-28 countries, by NUTS 2 regions over the period 2007-2012

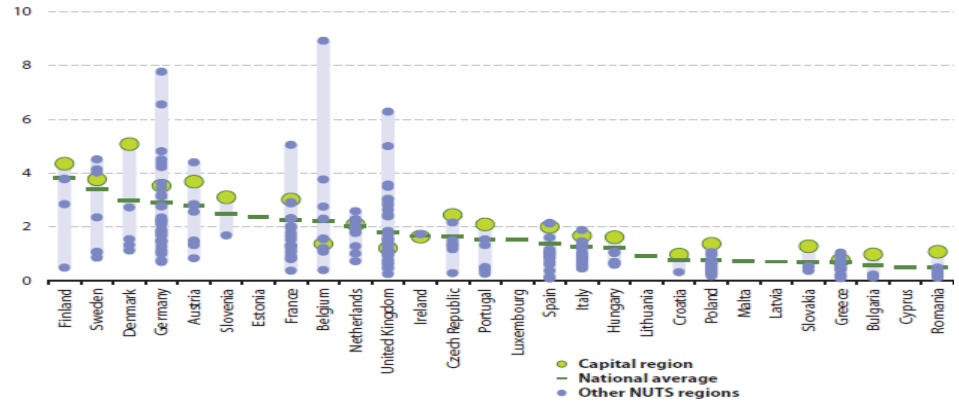


Source: computed by authors using data of Eurostat

The R&D intensity rose from 1.84% in 2007 to 1.91% in 2008 and reach 2.01% in 2009. The evident increases in 2008 and 2009 was a result of the contraction in economic activity during the financial and economic crisis rather than an expansion in the level of R&D expenditure. The R&D intensity registered

2.00% in 2010, 2.04% in 2011 and 2.06% in 2012. In order to achieve the 3.00% target that has been set for 2020, the EU‑28s R&D intensity would need to grow, on average, by 0.12% each year.

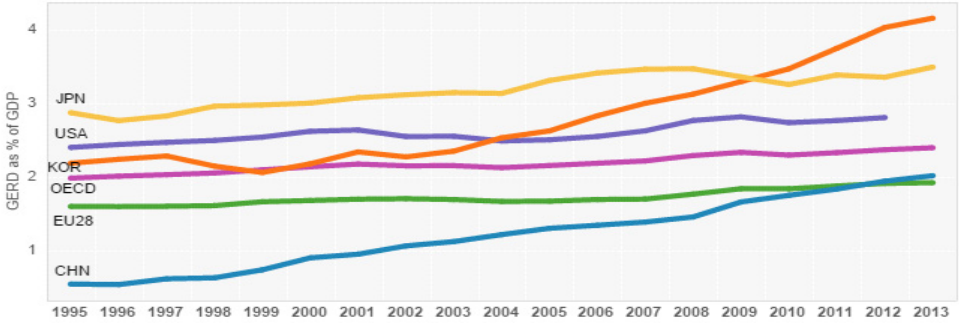
Figure 2. Regional disparities in R&D intensity, by NUTS 2 regions, in 2011



Source: Eurostat regional yearbook 2014

The R&D intensity was more than 3.00% in 2011 in Finland and Sweden. In Denmark, the R&D intensity was 2.98%; the lowest intensity being in Bulgaria, Cyprus, and Romania (less than 1%). Capital regions recorded the highest level of R&D intensity in 11 of the 22 EU Member States for which data were available (Eurostat).

Figure 3. The R&D Intensity in EU-28 countries compared with other economies



Source: OECD estimates based on OECD Main Science and Technology Indicators Database, 2015/1., on http://www.oecd.org/sti/msti.htm

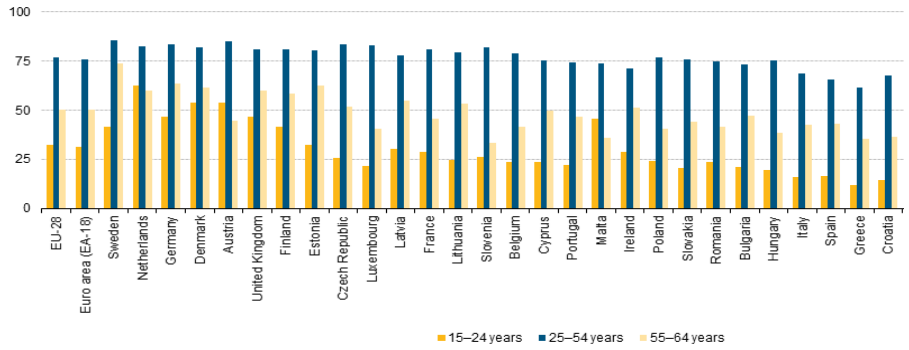
Comparative with other economies, R&D budgets in EU area appear a small increase over the period 1995-2013, but always to the level under OECD countries, USA, Japan or Korea. Chine has registered a strong increase in R&D intensity, more rapidly than OECD countries, but under the level of EU countries.

The second one is oriented on “Employment” by increasing the employment rate of the population aged 20–64 to at least 75%. Depending on the economy of each member state of EU, there are individual agreement as targets range from

employment rates of 80% or more in Denmark and Sweden. In Ireland, Greece, Italy, Malta and Romania the targets are down to 70 % or less.

The EU‑28's economically active population (also called the labour force) was composed of 242.2 million persons aged 15–74 in 2012, among which 216.9 million were employed (89.55%) and 25.3 million were unemployed (in search of work and available to work). In 2013, the EU-28 employment rate for persons aged 15 to 64, as measured by the EU's labour force survey (EU LFS), stood at 64,1 %. The highest regional employment rates in the EU‑28 were predominantly recorded in north-western and central Europe, employment rates in 2013 reached highs in the range of 72% to 74% in Austria, Denmark, Germany and the Netherlands, peaking at 74.4 % in Sweden. The lowest regional employment rates in 2013 were generally found in Croatia (49.2 %) and Greece (49.3 %).

Figure 4. Employment rates by age group in 2013



Source: computed by authors using data of Eurostat

Employment rates in the EU-28 are generally lower among women and older workers, respectively the employment rate for men stood at 69.4% and 58.8% for women in 2013.

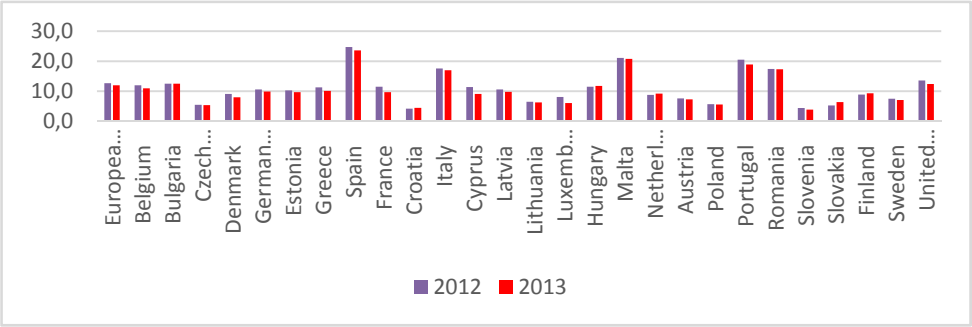
The third target regards "Climate change and energy sustainability" linked to the sustainable use of natural resources and the maintenance of ecosystems by reducing greenhouse gas emissions by at least 20% compared to 1990 levels, increasing the share of renewable energy in final energy consumption to 20%, and moving towards a 20% increase in energy efficiency. By Decision No 1386/2013/EU[1] of the Council and European Parliament was adopted The 7th Environment Action Programme (7th EAP) to 2020 – "Living well, within the limits of our planet" which provides a vision for EU environment policy through to 2020 and beyond. To contribute to the sustainable growth objectives and targets of Europe 2020, three priorities were identified: i) a low carbon economy, ii) ecosystem services and biodiversity, and iii) eco-innovation.

[1] Decision No 1386/2013/EU of the Council and European Parliament was adopted The 7th Environment Action Programme (7th EAP) to 2020 – "Living well, within the limits of our planet"

The fourth target is "Education" by reducing the share of early school leavers under 10% and increasing the share of the younger generation having a tertiary degree to at least 40%.

In 2013, the proportion of early leavers from education and training (group aged 18–24) in the EU‑28 was 12%, where 14.4% were male early leavers and 10.9% were female. 35 regions of NUTS 2 registered 20% or more of early leavers from education and training. 26 regions were located across southern Europe, being concentrated in Spain and Portugal, Italy (4 regions, including the islands of Sardegna and Sicilia), Greece (region of Anatoliki Makedonia, Thraki), and Malta (1 region). In 9 regions more than one fifth of the population aged 18–24 was classified as an early leaver, being concentrated in the United Kingdom (4 regions - Cornwall and Isles of Scilly, and the Highlands and Islands (of Scotland)), Bulgaria (2 regions) and Romania (2 regions).

Figure 5. Early leavers (group aged 18–24) from education and training in 2013 by NUTS 2 regions

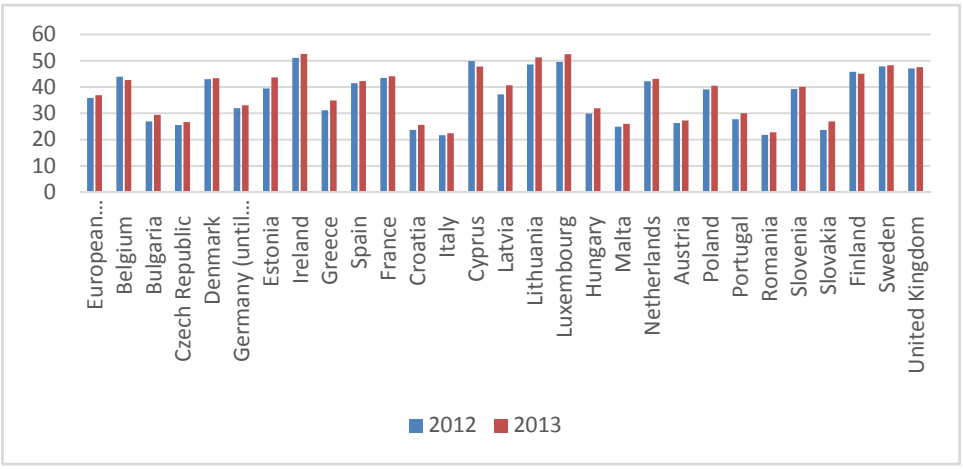


Source: computed by authors using data of Eurostat

The share of 30–34 year-olds population with a tertiary education (the target group of the Europe 2020 strategy), respectively a university degree or similar qualification, was 36.9% in 2013. 21 regions of NUTS 2 in the EU had more than 50% of the population aged 30–34 attaining a tertiary level of education in 2012, being concentrated in the United Kingdom (9 regions, mostly located in the south of England (around London) and in eastern Scotland).

The fifth is "Fighting poverty and social exclusion" by lifting at least 20 million people out of the risk of poverty and social exclusion. More than one third of the EU's budget is focused on cohesion policy, investing a total of EUR 351 billion on Europe's regions over the period 2014-2020, which aims to remove economic, social and territorial disparities across the EU with impact on growth and jobs, for example, by helping restructure declining industrial areas or diversify rural areas.

Figure 6. Population aged 30-34 with tertiary education by NUTS 2 regions



Source: computed by authors using data of Eurostat

3. Focus on regional economic development

Economic development is usually expressed in terms of gross domestic product (GDP), which in the regional context may be used to measure macroeconomic activity and growth summarizing the economic position of the region, providing the basis for comparisons between regions (Eurostat, 2014). From the policy perspective, GDP can be used as determinant indicator for eligibility of regions to receive support from the EU's structural funds (are taking into account three-year averages of GDP), or determining the extent to which each EU Member State should contribute to the EU's budget. GDP per inhabitant is frequently regarded as a proxy indicator for overall living standards.

Table 2. Gross domestic product (GDP) at current market prices by NUTS 2 regions (Euro per inhabitant)

GEO/TIME	2007	2008	2009	2010	2011
EU-28	24.900	25.000	23.400	24.400	25.100
Belgium	31.600	32.400	31.600	32.700	33.600
Bulgaria	4.000	4.600	4.600	4.800	5.200
Czech Republic	12.800	14.800	13.600	14.300	14.800
Denmark	41.700	42.800	40.500	42.600	43.200
Danmark	40.000	41.000	39.300	41.200	41.500
Germany	29.500	30.100	29.000	30.500	31.900
Estonia	12.000	12.100	10.400	10.700	12.100
Ireland	43.100	40.100	35.800	34.700	35.500
Greece	19.900	20.800	20.500	19.600	18.500
Spain	23.500	23.900	22.800	22.700	22.700
France	29.600	30.100	29.300	29.900	30.700
Croatia	9.800	10.700	10.100	10.100	10.400
Italy	26.200	26.300	25.200	25.700	26.000

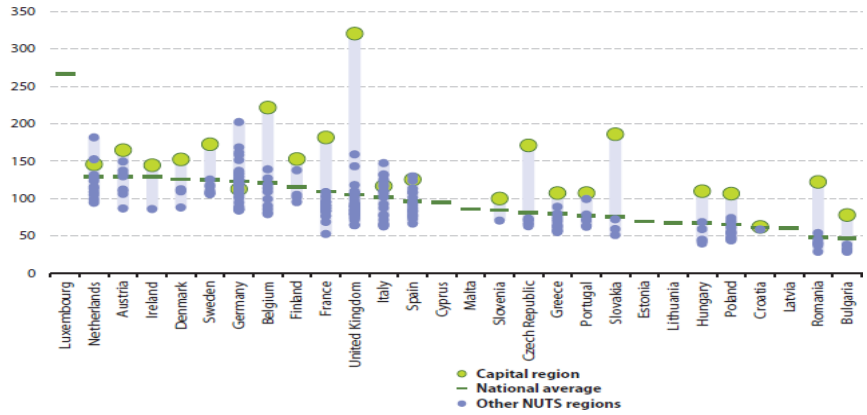
Cyprus	20.700	21.800	20.900	21.000	21.100
Latvia	9.600	10.500	8.600	8.600	9.800
Lithuania	8.900	10.100	8.400	8.900	10.200
Luxembourg	78.000	76.400	71.400	77.400	80.300
Hungary	9.900	10.500	9.100	9.600	9.900
Malta	13.700	14.600	14.400	15.400	16.000
Netherlands	34.900	36.200	34.700	35.300	35.900
Austria	33.000	34.000	33.100	34.100	35.700
Poland	8.200	9.500	8.100	9.200	9.600
Portugal	16.000	16.200	15.900	16.300	16.100
Romania	5.800	6.500	5.500	5.800	6.200
Slovenia	17.100	18.400	17.300	17.300	17.600
Slovakia	10.200	11.900	11.600	12.100	12.800
Finland	34.000	34.900	32.300	33.300	35.000
Sweden	36.900	36.100	31.500	37.300	40.800
United Kingdom	34.200	29.900	25.700	27.800	28.200

Source: computed by authors using data of Eurostat

Among the NUTS 2 regions in 2011, GDP per inhabitant in PPS terms ranged from a high of 321 % of the EU‑28 average in Inner London down to 29 % in the Nord-Est region of Romania. Many of the regions with relatively high average GDP per inhabitant were capital regions or regions that neighboured capital regions. Among the 10 NUTS 2 regions that recorded the highest levels of GDP per inhabitant there were seven capital regions (Inner London, Luxembourg with a single NUTS 2 region, and the capital regions of Belgium, Slovakia, France, Sweden and the Czech Republic).

These regions are characterized as: headquarters of large enterprises and financial services (often clustered in capital regions), largely urban areas (Hamburg and Oberbayern (which includes the city of Munich) in Germany), university cities (Groningen), large sea ports, off-shore gas fields, etc.

Figure 7. Regional disparities in gross domestic product (GDP) per inhabitant, in purchasing power standard (PPS), by NUTS 2 regions, 2011



Source: Eurostat regional yearbook 2014

In general, capital regions have the highest average GDP per inhabitant, as capital regions of the Czech Republic, Greece, Ireland, Hungary, Poland, Portugal, Romania, Slovenia and Slovakia recorded a GDP per inhabitant above the EU‑28 average in 2011. There are also capital regions that recorded a level of GDP per inhabitant below its national average (Berlin in Germany).

Final remarks

A first important issue that the analysis conducted within this study, is that the NUTS 2 regions in the Central and Eastern European countries are due to a rigorous implementation of regional strategies to achieve the desiderata of The Europe 2020 Strategy. In this respect, it is recommended that the countries concerned to develop "hard strategies constrains", and not "soft strategies constraints". Their attention is even higher by identifying and implementing a more rigorous sustainable regional economic development strategies, the more financial co-support of EU funding are higher for these regions.

The second important issue is that the results of the analysis emphasized the necessity of a relationship between regional governments and public or private agents providing regional public services, agents that must be treated as regional development drivers, especially in Central and Eastern European Countries (EEC). For public policy-makers, the economic regional sustainable development should be translated for EEC into creating a more stimulating framework for public-private partnerships, a relaxation of national legal framework for EU funds, a more stimulating framework for entrepreneurships. Not only there aren't arguments to prove that stimulating initiatives or supporting healthy regional development projects initiated by public or private agents, but the practice of some EU member states even supports this approach.

In our opinion the three shifts will be important for regional economic sustainable development through regional policies, as following: i) Make regional economic sustainable development the goal of regional development policy and align national development programs accordingly; ii) Design new efforts to help regions seize innovations and grow entrepreneurs; and III) Create an effective delivery system for national development programs to regions.

The overall conclusion of this study indicates that regional economic sustainable development has as practical result the creation of new businesses and expansion of existing businesses, in a way that expands the total number of jobs and results in a rising average wage, in a rise of the standard of living.

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