

ECONOMIC CRISIS AND ECONOMIC DISPARITIES IN EUROPEAN UNION

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Abstract: *The impact of the economic and financial crisis is still being felt. It started as an acute crisis of the banking system, but then quickly affected the real economy, causing a substantial slump in business investment, household demand and output. The current economic crisis has affected almost all European countries but the countries of the European south and the former eastern socialist republics have suffered the most. The objective in this paper is to quantify economic disparities as expressed by several growth indicators, such as GDP per capita, employment/unemployment rates, labour productivity rates and use them to compare the economic performances before and after the crisis. EU took several measures to recover from the economic crisis. Nevertheless, its ability to adjust to widely diverse national and local contexts that have been impacted differently by the effects of the crisis, and to support the different patterns of economic growth that will result from it, is yet to be seen.*

Keywords: Economic disparities; Economic and financial crisis; GDP per capita; labor productivity; employment rate; unemployment

JEL Classification: R11

Introduction

European Union is a heterogeneous economy with outstanding economic and social differences between countries and regions and with unbalanced territorial allocation of economic activities resulting in different standard of living of their population. For a long time, competitiveness and cohesion had been determining the development of European Union. While direction to competitiveness determines EU position in a global world, the cohesion policy is evoked by the existence of disparities between countries, regions and social groups. One of the goals of cohesion policy is to identify the size, structure and level of disparities and undertake different measures to narrow them. Cohesion policy that has to ensure a convergence between rich and poor countries and regions within European Community is one of the main goals of European integration from its beginnings in the fifth decade of the twentieth century.

The crisis has had a major impact on countries and regions across the EU. Regional economic disparities which were narrowing have stopped doing so, while unemployment has risen rapidly in almost all EU countries. Nevertheless, the impact of the economic crisis is not the same in all the countries throughout the European Union. This is due to several endogenous and exogenous factors that led to recession, ones specific for the whole Union and ones specific for different countries and regions. The European official statistics confirm these statements.

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In the present article are analyzed the most recent data regarding the most important and relevant indicators in order to achieve the main goal of the paper: to assess the effects of the economic and financial crisis on the economic disparities between EU member states.

The methodology used in this article includes the analysis and presentation of the basic indicators that are used to express disparities in this area traditionally, such as: GDP, economic growth, labour productivity, demographical trends and other relevant indicators.

1. Literature review on disparities

The theoretical literature on disparities and regional development has expanded enormously in recent years. The reason for this increasing interest in regional disparities is twofold. From an applied perspective, it is an undoubtedly issue of political priority in European Union (EU) and in most of the development and integration schemes of the nation states, as the existence of considerable regional disparities is considered to be detrimental for the success of supra-national integration projects. From the academic perspective, the studies on regional disparities and, in particular, of regional convergence are an indirect way of testing the validity of different and competing theories of economic growth and international trade.

The etymology of the word disparity comes from the Latin *disparitas*, which means divided. Most of the dictionaries approach disparity as inequality or disproportion of different phenomena. According to the Free Dictionary, there are two meanings of disparity, and namely: „1. the condition or fact of being unequal, as in age, rank, or degree; 2. unlikeness; incongruity”¹. The same definition is given by other dictionaries, adding some directions of the difference (i.e. wages, income, economic performance etc.)

Other definitions are those given by OECD, according to which regional (spatial) disparities express the scope of difference of intensity manifestation of economic phenomena under investigation observed within regions of given country (OECD, 2002). According to OECD, „territorial disparity indicates the scope the intensity of given economic phenomena differs to between regions within given country” (OECD, 2003). In the context in which OECD distinguish between territorial and income disparities, it can be mentioned that the definitions provided by OECD are mainly limited in analyzing and measuring economic regional disparities met inside the countries.

Other studies focused on the analysis of disparities are those of Meliciani and Peracchi (2006) or Higgins B. and Savoie D.J. (2009). The main conclusions of all these studies are that disparities

¹ see <http://www.thefreedictionary.com/disparity>

have been registered decreasing trends until the late eighties - early nineties, but afterwards these trends appeared. Nevertheless, these disparities are lower (and have decreased at a higher rate) when observed with productivity than with per capita income.

Karin Vorauer (2007) approaches regional disparities as „deviations from any conceptual reference division of characters taken as relevant, in association with different spatial benchmark levels (region borders). Regional disparity means unbalanced spatial structures in some region or in different regions” (Vorauer, 2007). According to the author, the regional disparities are conditioned by several factors linked to the unequal economic and development potential in different regions.

The analysis of inequalities turned indeed important especially in the last two decades this thing being visible preponderantly in the increased number of empirical studies regarding convergence.

Numbers of papers study the regional disparities of the EU-12 or EU-15, but more recent studies pay, also, attention to the new members, and namely Central and Eastern European Countries. By and large these papers conclude that there is convergence between them; however there are sharp differences about whether these countries have converged, or not, with the rest of the EU (Matkowski and Próchniak, 2007). Heidenreich M. and Wunder Ch. (2007) conclude that economic inequalities are increasing in most of the European Union (EU) member states, while between-nation inequalities in the enlarged Europe are declining in the last years. The economic differences between East and West Europe are gradually diminishing and the EU is becoming a relatively homogeneous economic, legal, and political field, which promotes social and economic cohesion in Europe (Heidenreich and Wunder, 2007).

Some researchers consider that as the number of EU member countries was increasing, the disparities became more obvious, and appeared certain studies focussed even on the analysis of the regional disparities inside the countries (Kluxankova-orawska, 2007; Kuscherauer *et al.*, 2010; Antonescu, 2014 etc.).

Therefore, disparities are frequently used within comparative economic analyses regarding regional development theories, but this is not the objective of the present paper. In this article, the focus will be concentrated on the identification of factors determining the disparities, rather than theories explaining them, as well as the analysis of the economic disparities between the country in the context of the economic and financial crisis.

The specialty literature highlights the following determinant factors of disparities' trends, and namely:

- Tendencies to approach in different ways the disparities, as well as different understandings of convergence and divergence (see Barro, Sala-i-Martin, 1995; Sala-i-Martin, 1996 or Blazek and Uhler, 2006);

- What is the degree of socio-economic disparities between compared countries or regions? For example, the economic growth rate in the low developed countries provides us a different information compared to relative low economic growth rates in advanced economies;

- Territorial ranked level and comparable data. When the countries or regions are compared the same indicators should be used, otherwise it could bring non concluding remarks.

- Time and period character is the factor that could show us the convergence development tendencies. While comparing disparities, it is very important to use the same time periods, otherwise the measurement of disparities would not result in identification of solutions to narrow them.

- There are marked differences in spheres hardly quantifiable that have a high impact on countries and within them. Some authors refer to inequalities that could appear in the field of social notoriety and its role and impact on society performance (Blazek and Uhler, 2006).

Taking into consideration all the factors that could outcome in some disparities, Kutscherauer at al. (2010) classify all the disparities through two perspectives: vertical and horizontal. „*Vertical perspective*, representing geographical dimension is more generally specified as disparities at the European level, disparities at the national level and disparities at local level” (Kutscherauer at al., 2010).

From *horizontal perspective*, disparities could be social, economic and territorial. Social disparities refer to the quality of life, standard of living, old age, crime and other factors that tend to increase social inequalities. Economic disparities relate to the economic performance (economic structure, productivity, manpower etc.) of the countries or regions analyzed. And finally, territorial disparities are directly linked with the geographical or locational factors.

The main objective of this article is to identify the disparities of economic nature and to see how the financial crisis had influenced these disparities at the European level. Thus, from the vertical perspective are analyzed disparities at the community level, but from the horizontal perspectives, the focus would mainly concentrated on the economic disparities.

2. Assessment of impact of economic crisis on economic disparities in the European Union

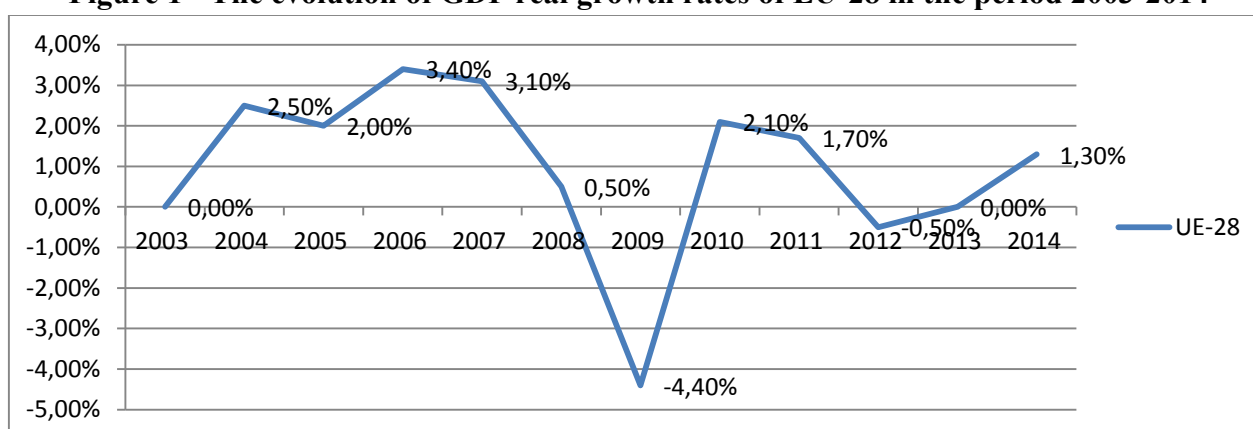
The quality of life in EU countries is affected by many factors which condition each other. While analyzing and measuring disparities it is very hard to identify the contribution of social or

economic factors separately. An economic factor could be co-generated and catalyzed by a social one and vice-versa. For example, an enterprise could not activate without manpower. The income of the company determines the level of wages and, thus, the level of living of the population in the region. The social climate of the population directly influences the level of consumption and the economic performance of the region analyzed. Thus, several indicators are used to measure social and economic inequalities at the same time.

GDP per head is probably the most important indicator for the welfare of the regions, first of all, because it is decisive for domestic economic well-being and, secondly, because it is highly correlated with other important aspects of well-being that affect to individuals of any community (labour, social or public well-being)

The EU entered a recession in the second quarter of 2008, which lasted five quarters. Since the recession, overall growth in terms of GDP has been sluggish. The EU's GDP contracted again in the last quarter of 2011 and the first two and the last quarter of 2012. The overall impact of the crisis on GDP in the period 2008-2012 led to sluggish decrease of its growth rate. Due to the global crisis, the growth rate of the EU-28's GDP appeased considerably in 2008 and the total GDP decreased substantially in 2009. In 2010, the EU-28 GDP registered a recovery, but this was slowed in 2011 and 2012. The recovery trend was re-launched in 2013 and consolidated the EU-28 GDP registered a recovery, but this was slowed in 2011 and 2012. The recovery trend was resumed in 2013 and consolidated in 2014 (Figure 1). In constant prices terms, the total GDP increased by 2% in 2010 and this was followed by a further gain of 1.6 % in 2011. Subsequently, GDP contracted 0.4 % in 2012 and was relatively stable (up 0.1 %) in 2013 (Eurostat, 2014a).

Figure 1 - The evolution of GDP real growth rates of EU-28 in the period 2003-2014



Source: Elaborated by the author according to Eurostat data (Code: tec00115)

In the analyzed period, the real GDP growth varied substantially among the EU member countries. In 2009, all the member states, except Poland, registered negative growth rates of GDP. However, in 2010, the plenty of rescue packages applied by the governments contributed to the recovery of economic growth rates in 22 Member States, a trend that was consolidated in 2011 when 25 of the EU Member States were registering positive real GDP growth rates. Nevertheless, the efforts of the countries to overcome the effects of the global crisis were not long-term oriented, that is why in 2012 this positive trend was reversed and, as a result, as only half of the EU-28 Member States reported economic expansion, while in 2013 this number rose to 17. In this context, it can be mentioned that the global financial and economic crisis decreased the economic performance of EU member states. This idea is supported also by Gaki *et al.* (2010).

Focusing on the Euro area (EA-18), it can be mentioned that the average growth rate decreased in 2013(0.8%), compared to 2003 (1,1%). The highest growth rate was registered in Slovakia and Lithuania (both 4.2 % per annum), followed by Poland (4.0 %), Latvia (3.7 %), Estonia (3.6 %), Romania (3.5 %) and Bulgaria (3.3 %) (Eurostat, 2014a). Negative growth rates, in the analyzed period, were registered in Greece, Italy and Portugal. The Cypriot economy contracted more strongly in 2013 (-5.4 %) than it had in 2012 (-2.4 %), while the reverse was true for Greece, where the 3.9 % contraction in 2013 was milder than the contractions in the two previous years (both around -7 %).

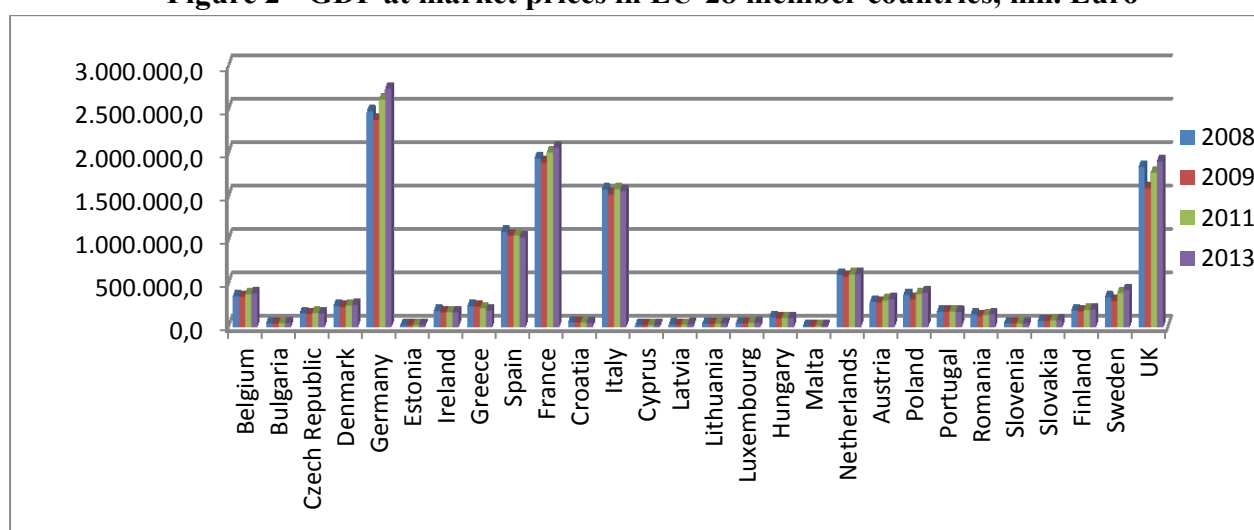
From the total EU-28's GDP in 2013, the contribution of the five largest economies (Germany, France, the UK, Italy and Spain) accounted for 71.0 %, while the contribution of all EA-18 members was 73.4 %. Nevertheless, the comparisons among countries must be made accurately, as the nominal GDP is influenced by the notably exchange rate fluctuations for those EU Member States which have not adopted the euro. (Figure 2)

Initially, the powerful industrialized countries and their banking system were among those mostly affected. Many countries in the European Union felt, at this stage, relatively safe and unaffected. Nevertheless, the economic and financial crisis hardly hit all EU member states, in 2009 all of them registering decrease in their GDP. Even if in 2011 most of the countries registered performances of GDP higher than its pre-crisis levels, 11 countries faced barriers in recovering its economic growth.

Summarizing, it can be said that economic all the EU member countries managed to recover from the crisis, even if some of them could not yet achieve the pre-crisis growth rates. However, disparities in growth may not be harmful in the short run, as long as growth across the EU is still robust.

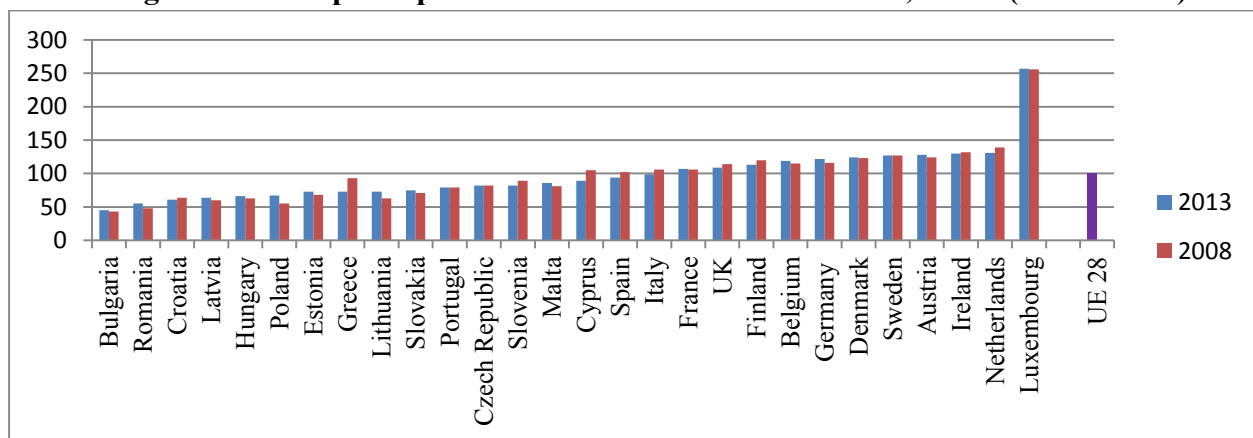
In order to assess the level of living, it is more appropriate to use GDP per capita in purchasing power standards (PPS) that mean taking into account the differences in price levels across countries. According to Eurostat (2014a), "the average GDP per capita within the EU-28 in 2012 was PPS 25 500, slightly above the peak (PPS 25 000) reached in 2007 and 2008 prior to the effects of the financial and economic crisis being felt. The relative position of individual countries can be expressed through a comparison with this average, with the EU-28 value set to equal 100" (Eurostat, 2014a) (Figure 3).

Figure 2 - GDP at market prices in EU-28 member countries, mil. Euro



Source: Elaborated by the author according to Eurostat data (code nama_gdp_c)

According to Eurostat (Eurostat, 2014a), Luxembourg recorded the highest relative value among EU Member States, where GDP per capita in PPS was more than 2.6 times the EU-27 average in 2013. This high value is partly explained by the multitude of cross-border workers from Belgium, France and Germany. On the other extreme, in 2013, Bulgaria registered the lowest GDP per capita in PPS, followed by the Romania and Croatia (the last three countries joining the EU). (Figure 3)

Figure 3 - GDP per capita in EU-28 member states in PPS, Index (EU28 = 100)

Source: Elaborated by the author according to the Eurostat data (Code: tec00114)

Even if the PPS data should, in fact, be used for comparisons among countries in a single year, rather than over time, the message of these data, despite some barriers imposed by the global crisis, is that the member states that joined the EU in 2004, 2007 and 2013 moved closer to the EU average standard of living, and thus, some convergence occurred.

According to the Eurostat, in 2013 compared to 2008, some countries, such as: Luxembourg, Germany, Sweden and Austria moved further ahead of the EU-28 average, while other member states, such as UK, Italy, Ireland and France, moved closer to the EU-28 average (Eurostat, 2014a). From the countries situated below the EU -27 average in 2008, Lithuania, Poland, Romania, Latvia, Slovakia, Estonia and Bulgaria registered the highest growth rates towards the EU-28 average by 2013, whereas Greece and Portugal registered in 2013 even lower performance in comparison with 2008.

The analysis of the GDP per capita in EU member countries before (2008) and after (2013) the economic and financial crisis, shed the light over the fact that some of the countries were considerably affected by the crisis, and registered in 2013 a GDP (PPS, Index EU-28=100) lower than in comparison with 2008 (i.e. Greece, Cyprus, Ireland, Spain, Italy etc.). Thus, it can be stated that economic crisis widened the economic and social disparities among member states.

It is also noticeable that production structures around Europe, even within countries, are extremely heterogeneous, and for this reason productivity gaps must be seen cautiously in order to distinguish differentials in productivity from differentials in economic structures.

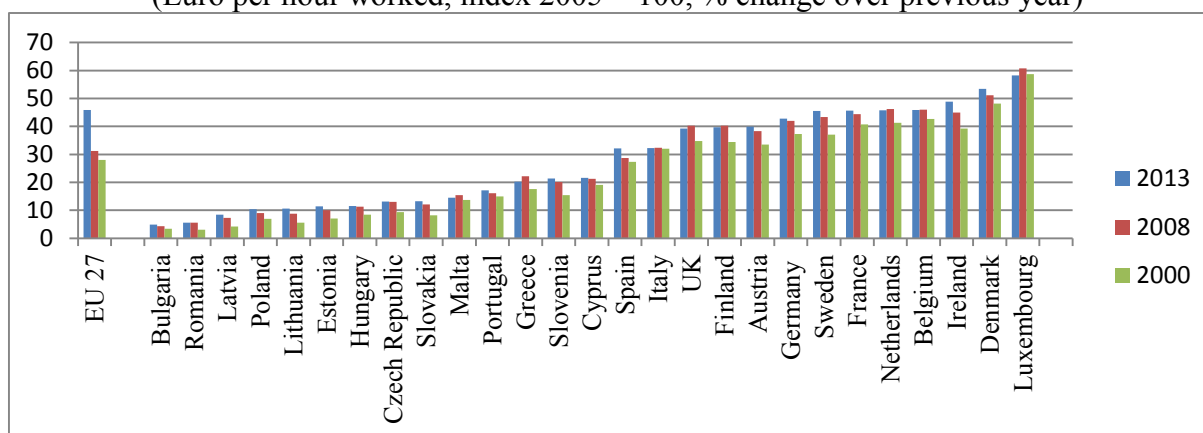
An analysis of labor productivity per employee during the period of 10 years from 2003 to 2013 show increases (in current prices) for all activities, ranging from 17.4% for commercial distribution services, transportation and accommodation and food services to 35.9% in industry; information and communication services (4.4%) and business services (8.0%) occupy lower positions in the ranking.

In particular, labor productivity per employee in Lithuania increased from 49% to 74% of the EU-27 between 2002 and 2012; also, Latvia, Romania, Slovakia, Estonia and Poland have made substantial progress in terms of proximity to the EU-27 average. Instead, the UK, Italy, Belgium and Greece have declined considerably in terms of labor productivity per person in relation to the EU-27 average.

The global economic and financial crisis stopped in the constant growth of labor productivity registered in the period of 2000 and 2007. In spite of the fact that productivity recovered in 2010 and continued to grow in the coming years, the perspectives on the long run will be determined by the manifestations of the labor market.

Although productivity levels increased in all member states in the last decade, there is still considerable variation in terms of productivity in different EU countries. In 2013, Luxembourg, Denmark and Ireland have the most efficient workers, producing 58.2, 52.7 and 50.4 euros per hour, respectively. On the other hand, labor productivity in the 11 Member States was less than 20 euros per hour. (Figure 4)

Figure 4. Labor productivity in EU member state in 2000, 2008 and 2013
(Euro per hour worked, index 2005 = 100, % change over previous year)



Source: Elaborated by the author according to Eurostat data (Code: tsdec310)

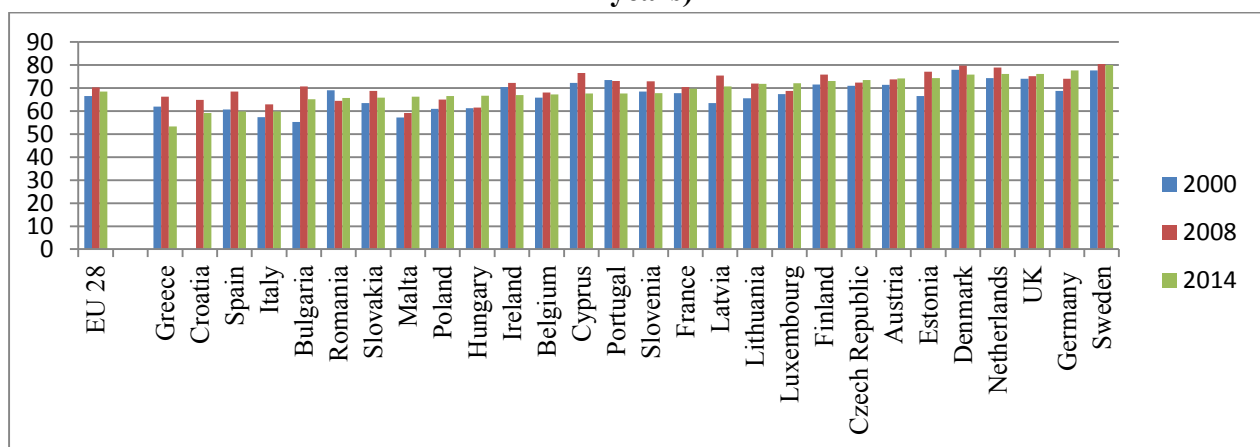
The analysis of the Figure 3 and 4 highlight the fact that there is a strong interrelation between the level of GDP and level of productivity. However it is worth to be mentioned that countries with the lower productivity level register the higher productivity growth rates after the crisis. Nevertheless, in order to prove the correlation between the two indicators, the employment needs to be analyzed.

Even though the employment rate in EU augmented from 66.6% in 2000, 70.3% in 2008, the financial crisis changed the trend and by 2014 the employment rate has remained around 68.5%. The EU removed from achieving the 75% target of the Europe 2020 strategy. According to Guichard S.

and Rusticelli E. (2010) the regional disparities in employment in the EU decreased by 2.1 percentage points. Progress has been canceled by the economic crisis, which gradually brought back regional disparities in employment in 2000 (13.3% in 2012).

There is a substantial difference in employment rates across the EU. In 2014, Sweden, the Netherlands, UK, Germany and Denmark have exceeded the employment target of the EU average of 75% (Figure 5). Nevertheless, other countries were more than 15 percentage points behind the EU average target.

Figure 5 - Employment rate in the EU 28 in 2000, 2008 and 2014 (% of age group 20-64 years)



Source: Elaborated by the author according to Eurostat data (Source: Elaborated by the author according to Eurostat data (Code: tsdec310))

The lower end of the spectrum was dominated by countries in Southern and Eastern Europe: Greece, Croatia, Spain and Italy that have the lowest average employment rates of 53.3%, 59.2% and 59.9% respectively. These low rates are likely to reflect differences in economic development, demographic trends, labor market structure and economic policies and the asymmetric impact of economic shocks.

Concluding, it can be said that economic crisis had a direct impact on the labour market in general, and on employments rate in particular. Even if the employment rate increased in the period of 2008 - 2013, better tendencies were registered in the case of the three soft forms of unemployment. As Eurostat reports, „ the proportion of underemployed part-time workers in the labour force has grown slightly from 3.1 % in 2008Q1 to 4.0 % in 2014Q3. The percentage of persons available but not seeking work followed the same trend, reaching 4.1 % in 2014Q3. People seeking work but not immediately available has remained close to 1 % over the whole time span, showing no noticeable change since the start of the economic crisis” (Eurostat, 2014b) .

Several factors led to this situation, but two of them were more obvious:

- The three soft forms of unemployment have softer requirements than unemployment itself, because they are referring to the groups of persons who do not simultaneously fulfill all the criteria of the International Labour Organisation unemployment definition. These requirement aspects make these indicators more stable and less volatile;

- Psychological and dynamic factor. Most of the persons in underemployment and those available for work, but not seeking they believe no work is available. Also, it is referring to the dynamic groups with high rotation (for example students seeking a job for summer or those seeking a job before the end of their studies).

The crisis then led to sharp increases in unemployment. Unemployment in the EU rose from an average of 7.1% of the population in 2008 to 9.7% in 2010 and 10.5% in 2013. Estonia, Ireland, Latvia and Lithuania experienced the largest increases in unemployment between 2007 and 2010, from relatively low levels of around 5% in 2007 to around or over 15% in 2010. Currently, the unemployment is falling in all the Baltic countries.

Both the decline in GDP and the loss of employment vary greatly between the countries, ranging from a decline of less than 5% in both GDP and employment in Cyprus to about 40% GDP decline and 21% employment loss in Latvia (de Beer, 2012). In countries such as Portugal, Greece and Spain, unemployment has also risen to very high levels as a result of the crisis and continues to grow, reaching 16%, 24% and 25% respectively in 2012. Long-term unemployment levels have quadrupled in many of these countries, while youth unemployment has reached rates of over 50% in Greece and Spain. The statistical analysis highlight the fact that there is a direct relation between the GDP growth rates and unemployment. More than this, the economic and financial crisis made this relation more obvious.

Conclusions

Observing in detail the current heterogeneity in GDP per head in the EU countries shed the light over the fact that some part of the gap is due to productivity differentials, but an important part is connected with the differentials in the employment and employment rates, the persistence of old production structures and over-employment in the primary sector activities. The latter may make us conscious, once again, that in order to increment employment is necessary to reach a lasting and vigorous rate of growth of income per head.

Also, the economic crisis affected mostly developed countries with an increased involvement on the international financial markets and almost all southern European countries, suggesting that countries with pronounced vulnerabilities and a higher degree of financial integration tended to be affected more severely. The effects of the crisis on the Baltic States were particularly strong. Latvia experienced a drop of GDP of 13.1% and an increase in unemployment, up to over 12% in 2009. Previous high-growth economies, such as Estonia and Lithuania, are also expected to suffer with a projected drop in GDP respectively of 10.3% and 11%, and their unemployment rates exceeded 10% in 2009. Hungary's 6.3% GDP fall and close to 10% unemployment rate is also substantial.

Labour market regulation plays a crucial role in analyzing the heterogeneous effects of the crisis on countries. As suggested by de Beer (2012), in countries where it is relatively easy for employers to reduce the workforce, by laying off either permanent workers (such as in Denmark) or temporary workers (as in Spain), the crisis results in a strong increase in unemployment and has created a sharp dividing line between those who lose their job and those who remain employed and hardly suffer from the crisis at all. On the other hand, where employers are not able to adjust their workforce quickly and therefore have to resort to internal flexibility, by either reducing the number of working hours (as in Germany and Slovakia) or cutting real wages (as in the UK), the consequences of the crisis are more evenly spread among the workforce.

However, the redistributive effects of the crisis are not only dependent on the level of unemployment and their analysis therefore needs to also take account of policy responses to the changes in the labour market and to the distributional effects of the crisis, which provide an even more heterogeneous picture of the changes. The several efforts of the EU to strengthen the convergence were banned by the economic crisis, which means that countries need to reform their growth strategies and restructure their production processes.

Cohesion policy has made a significant contribution to spreading growth and prosperity across the European Union, while reducing economic, social and territorial disparities. Undoubtedly, without cohesion policy, disparities would be greater. The impact of the crisis on economic cohesion cannot be analyzed solely through a national dimension and needs to be complemented by a regional perspective. As highlighted in the 8th progress report on economic, social and territorial cohesion, the crisis has hit the EU territories in a period of progressive regional convergence. These differences have to be explained both in terms of the economic background of each NUTS 2 region (and therefore their resilience against the crisis shock) and in terms of their ability to smooth the downturn, but these will represent the task of future research.

References:

- Antonescu, D. (2014), "Theoretical approaches of regional development", MPRA Paper No. 60287, available at: <http://mpra.ub.uni-muenchen.de/60287/>
- Barro, R. and Sala-i-Martin, X. (1995), *Economic Growth*, McGraw Hill, New York, ISBN 0070036977.
- Blazek, J., Uhlir, D. and Blatek, J. (2006), *Regional development theory*. In Sborník zezávěrečného semináře k metodám regionálního rozvoje, VŠB-Technická univerzita, Ostrava, pp. 18-23, ISBN 80-248-1265-7.
- de Beer, P. (2012), "The impact of the crisis on earnings and income distribution in the EU", EYUI. Working Paper 2012.01.
- Eurostat (2014a), National accounts and GDP. Statistics explained, available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/National_accounts_and_GDP
- Eurostat (2014b). Underemployment and potential additional labour force statistics, available at: http://ec.europa.eu/eurostat/statisticsexplained/index.php/Underemployment_and_potential_additional_labour_force_statistics
- Gaki, E., Angelis, V., Dimaki, K. and Koufodontis, N. (2010), "Economic Crisis and Regional Disparities", ERSA conference papers from European Regional Science Association, Vienna, available at: <http://econpapers.repec.org/paper/wiwwiwsa/ersa12p1158.htm>
- Guichard, S. and Rusticelli, E., (2010), "Assessing the Impact of the Financial Crisis on Structural Unemployment in OECD Countries", 7th ECB/CEPR Labour Market Workshop "Unemployment Developments After the Crisis", Frankfurt am Main, European Central Bank, 16-17 December 2010.
- Heidenreich, M. and Wunder, C. (2008), "Patterns of Regional Inequality in the Enlarged Europe", *European Sociological Review*, Vol. 24, No. 1, pp. 19-36.
- Kluvánková-oravská T. (2007), "Structural funds the challenge for sustainable development and regional disparity in the Slovak Republic", Vol. 17, Issue, pp. 61-73.
- Kutscherauer A., Fachinelli, H., Hučka, M., Skokan, K., Sucháček, J., Tománek, P. and Tuleja, P. (2010) "Regional disparities: Disparities in country regional development - concept, theory, identification and assessment", Ostrava, available at: http://alkut.cz/edice_cd/cd11_regdis_mono_angl/pdf/Regional%20disparities.pdf

- Matkowski, Z. and Próchniak, M. (2007c), “Convergence between the CEE-8 and EU-15”, in: Rosati, D. (ed) *New Europe. Report on Transformation*, XVII Economic Forum, Krynica-Zdrój, Poland, 5-8 September 2007, Eastern Institute, Warsaw, pp. 102-106.
- Meliciani V. and Peracchi F. (2006), “Convergence in per-capita GDP across European regions: a reappraisal”, *Empirical Economics*, Vol. 31, pp. 549–568.
- OECD (2002), *Geographic Concentration and Territorial Disparity in OECD Countries*, OECD Publications Service, Paris.
- OECD (2003), *Geographic Concentration and Territorial Disparity in OECD Countries*, OECD Publications Service, Paris.
- Sala-i-Martin, X. (1996), “The classical approach to convergence analysis”, *The Economic Journal*, Vol. 106, pp. 1019-1036.
- Vorauer, K. (1997), *Europäische Regionalpolitik Regionale Disparitäten. Theoretische Fundierung, empirische Befunde und politische Entwürfe*, Münchener Geographische Hefte, Passau.