

CRISIS AND REGIONAL DISTRIBUTION IN THE EUROPEAN UNION.

CONSIDERATIONS OF ECONOMIC POLICY

INTRODUCTION

Regions, regionalization, regionalismⁱ are words that are to be found in most current debates. They are all based on the spatial levels of governance and the challenges of competitiveness in the global context, especially in the context of the European Union (EU), in the debates on convergence and cohesion.

The European Union, conceived as a process of regionalisation and, as such, territorially diverse, in addition to having to face the global challenges of economic development as a block must assume, in parallel, the difficult task of social, territorial and economic cohesion. For this reason, the analysis of regional inequalities has been at least from the beginning of the 1970s, when Ireland (a rural, poor and peripheral country) and the United Kingdom (characterised by declining industrial regions) joined the European Union, one of the major concerns of the processⁱⁱ.

For territorial analysis and, above all, for setting objectives and implementation of various regional policies, EUROSTAT (European Statistical Office), from the regionalism philosophy body, has developed a regional classification for Europe that provides a harmonised hierarchy of regions on three levels NUTS (Nomenclature of Territorial Units for Statistics) subdivides each Member State into a number of NUTS 1 regions, and of NUTS 2 regions and so on. If available, administrative structures are used for the different NUTS levelsⁱⁱⁱ.

Furthermore, the EU Regional Policy, based on the Principle of Concentration, defines its objectives as grouping regions according to their greater or lesser degree of development, primarily taking into account the different regions' per capita GDP threshold and their functioning of the economic structure.^{iv}.

In this context, it is clear that the effects of the economic crisis on the EU are different on the different regions or groups of regions and therefore, we can talk about the regional distribution of the economic crisis in the EU.

The study of the regional distribution of the economic crisis in the EU can be carried out from different perspectives (commercial, economic, social, etc.) and analysing a large number of variables (imports, exports, GDP, GDP per capita, balance of migration, spatial concentration of economic activity, etc.).

This ongoing research aims to conduct a study of the uneven impact of the crisis on different regions (NUTS II) of the European Union through the analysis of the variation in the level of spatial concentration of production and income per capita. This study puts special emphasis on the relationship between regional inequalities and the intensity of the impact of the crisis. The analysis will be covered between the years 2005 - 2010^o. On the bases of the results, it is intended to provide recommendations for economic policy and institutional reform by way of regional recipes to get out of the crisis.

On this basis, the aim of this paper is limited to the participation of the scientific community of this investigation as well as to advance the initial inquiries, proposals and results. To do this, it is structured in three parts: the first part seeks to place the academic debate on the state of affairs; the second part, seeks to provide an approximation to the empirical analysis by studying the uneven impact of the economic crisis on the territory of the EU. This is based on the examination of data on the dispersion of regional employment rates offered by EUROSTAT and in the absence of updated data for the period, an analysis of the dispersion of GDP and the regional GDP per capita carried out by the European Commission over the last published periodic reports. The third part, aims to provide the main conclusions of the study and some considerations of economic policy among which we highlight the proposal of Regional Potential Index.

THEORETICAL ANALYSIS

There is an extensive literature on the uneven development of the territories in which we can highlight a group of theories studying *regional inequalities and interregional relations*, among which are: the contributions of the current neoclassical with representatives as Solow (1956) and Swan (1956), in which the free play of market forces is the key to a progressive equalization of levels of development between different territories; *Theories of Centre and Periphery and the Unit*, in the 1960s, with representatives as Gunder (1966) and Amin (1976) and researchers from ECLAC, whereby the level of development of a country/region is the result of the place of a system of hierarchical nature and asymmetrical relations; *Circular Causation Theory Cumulative*, at the end of the 1950s, with representatives like Myrdal (1957), Kaldor (1957) or Hirschman (1958), among others, focus on the existence of economies of scale and technological externalities and their power of attraction of new resources that strengthen the expansion of the market in a region which has previously been an agglomeration circularly; *Theory of the Poles of Growth* in the mid-1950s and whose highest representative is Perroux (1955), but later also it were Boudeville (1958), referred to the processes of localization and accumulation of industries and relations established between them and their impact on development.

The current thoughts on the actual territorial aspects of development, we have *The New Economic Geography*, whose highest representatives are Krugman (1997), Fujita and Krugman (2004) and Venables (1996, 2003) who appear to be concerned about the spatial concentration of economic activity, in which the mobility of resources and the agglomeration act with centrifugal and centripetal forces, respectively forming the evolution of an economic spatial structure. For its part, the *Convergence Hypothesis*, which started in 2000, and whose main representatives are Barro (1997) and Sala-i-Martin (2000), argue that there is a negative relationship between the level of the initial income of an economy and its growth rate, which means that there is a trend towards convergence in the long-term level of development.

In addition, there are other groups of theoretical contributions such as those who try to explain the direct causes of regional disparities like Polèse (1998) and Williamson (1972). There are those who seek to explain the regional inequalities in function of territorial productive capacities, where we can find *Keynesian models "of economic base"*, with representatives like North (1995) or Friedmann and Alonso (1964), *Endogenous Growth Models* in the 1980s, whose highest representatives are Romer (1986) and Lucas (1989), the *New Physical Geography*, represented by authors such as Gallup et al. (1999) and the current local and endogenous development, of *a bottom-up process*, whose main representatives we can find in Albuquerque (2004), Vázquez Barquero (2005), in the Latin American Institute and the Caribbean Institute for Economic and Social Planning (ILPES), amongst others.

Furthermore, the literature on the analysis of vulnerability and the unequal effects of an economic or financial crisis on integration, such as the EU, is scarcer. The current global economic crisis has served as a warning sign for the European Governments to react. They have had to strive to seek remedies in the short and medium term (financial rescue instruments for some countries that are in excessive debt, European budgetary-semester coordination instruments - economic coordination instruments - or the reform of the Stability and Growth Pact)

But if it is necessary to point out a lesson learnt from the current crisis and of its impact on integration, it would be the need to proactively deepen the study of models for the prevention of crisis. This will, on the one hand, reduce vulnerability to such events, and on the other hand, define the most suitable shock absorbing mechanisms and the ideal way out of it in contexts of great territorial diversity, as done in those that characterise those processes, for example in the case of the EU.

The purpose of this "paper" is not to study such models, nor is it to even parameterise or estimate their functions, but to make an approximation to them by trying to emphasise the importance of the role that regions should play from their own economic and social potential to their own development, and the convergence and territorial cohesion in their integration such as

the EU. On the basis of this potential, equally the different effects and distinct recipes could also be analysed to find a way out of such adverse situations such as the current economic crisis.

AN EMPIRICAL APPROACH TO THE ANALYSIS. THE UNEQUAL IMPACT OF THE CRISIS ON EUROPEAN TERRITORIES.

It is recurrent to turn to, for the empirical analysis, the theoretical framework of the new economic geography and introduce the basic model of Krugman, where there are centripetal forces (responsible for the geographical concentration of economic activity) and centrifugal (responsible for the geographical spread of economic activity), the effects of an economic crisis as an exogenous factor.

In this way, we can proceed from the assumption that economic crises is acting as a disturbing exogenous factor that generates cumulative processes that lead to the formation of geographic agglomerations of economic activity^{vi} and territorial concentration of income (centripetal forces).

According to *the Fifth Report on Economic, Social and Territorial Cohesion* (European Commission 2010) the coefficient of variation, the Gini index or the S80/20 (relationship between 20% of the richest regions and 20% of the poorest regions), all these dispersion measures, applied to the variation of the income per capita in regions NUTS II of the EU, have suffered a reduction between the years 1996 and 2007. This shows a reduction in regional differences in those years, or what the same is, a reduction in the concentration of income; Even, one warns a minor territorial concentration of the GDP of the EU27 in the European's traditional core (London, Paris, Milan, Munich and Hamburg), though a major national concentration (especially in the regions of the national capitals), which creates a trend towards the formation of urban peripheral zones.

Likewise, the statistical information of Eurostat Regional Yearbook 2010 reflects, equally, the continuity of the gravity of the disparities during the new programmed period 2007-2013, in the moment of the year 2007. In this respect, the GDP per capita from Inner London's region manages to be in this year almost fourteen times major than the GDP per capita of the region of the North-east of Romania (see Table 1).

Table 1

According to this report, in 2007, the GDP per-capita from 72 regions of the 275 analyzed and classified^{vii} is lower than 75% of the community average (standardized in units of purchasing power parity and fixed on 100% for the year base 2004), where lives the 25% of the population. Of the above mentioned regions, the three-quarters belongs to the new members states, to Croatia and to the former Yugoslavian Republic of Macedonia and a quarter of the same ones to the countries of the EU15.

Logically, this tendency towards regional convergence will be amended with the crisis in a conflicting current. In the absence of data of this variable, in order to verify this, we have made an approximation through the dispersal data of the regional employment rate (see Table 2).

According to this report, the economic crisis primarily hit regions mainly specialised in the manufacturing sector, although the largest unemployment increases occurred in regions with a high dependence on construction. The regions specialised in tourism and those who register a high percentage of employment in the public sector have not yet significantly been affected, and regions specialising in financial services and business, have suffered an average impact in terms of GDP and employment.

The analysis of regional data available on the dispersion of the unemployment rates (measured in the coefficient of variation) in the years immediately prior to the crisis and subsequent to it, demonstrate how the uneven impact of it on various regions, has led to a new process of regional

concentration of occupation, which will be reflected in the concentration of production and in the regional per capita income, therefore, an increase of regional disparities^{viii}.

In table 2, we observe two opposite processes in the period 2005-2007 and 2008-2010. In the first period a reduction of the concentration of employment rates (the coefficient of variation for the EU-27 from 11.9 to 11.1) occurs, which means a greater dispersion of economic activity. This trend shows signs of change from that year, the year the crisis began, resulting in an increased concentration of employment rates (the coefficient of variation for the EU-27 went from 11.3 to 11.9). This outcome for the EU-27 is a reflection of the increase of internal disparities that is taking place in the different Member States as a result of the crisis, in this case, due to the unequal effect of the crisis on the regional labour market depending on their specialty. This same effect can be extrapolated to increase the inter-regional disparities.

Table 2

CONCLUSIONS AND CONSIDERATIONS OF ECONOMIC POLICY

Neoclassical theories do depend on the level of economic and social development of a geographical area's own level of economic growth, which, under conditions of free competition, results in the well-being for all members of society as well as helping with the development to geographically converge.

Meanwhile, the New Economic Geography and the running local and endogenous development have highlighted the importance of the regions' role in their own development through their own economic and social potential and the configuration of mechanisms for territorial cooperation promoting permanent situations of territorial balanced development.

In any case, the geographical reality in the world, and specifically in the EU, shows that there are large differences in the development of different regions.

For that reason, by returning back to the Keynesian recipes in times of crisis, the implementation of policies to promote environmental sustainability, economic competitiveness, innovation (both

institutional and instrumental), multilevel governance (participation and spatial planning), learning, knowledge and information as well as their measurements, the strengthening of cultural values, regional networks and development planning all become necessary ... that is to say, all of the components that make up territorial cohesion (centrifugal force) that extend the symmetrical configurations' stability, and therefore, territorial balance (territorial cohesion and territorial development assembly model). In this sense, regional integration policies should promote regional cooperation to counter the definition of centre-periphery development schemes which are generators of spatial disparities. The program SPON 2013 (European Commission 2010) develops an important paper in this line

In this sense, and especially in order to implement measures of economic policies, in general, specifically, in adverse situations as in the current crisis, an index of regional economic potential could be defined to measure the regional economic strength based on a number of variables and indicators (demographic, labour market, production structure, etc.). This would reveal the level of availability and use of a number of resources or assets, which provide a greater level of comfort to its inhabitants. This same index can, in turn, disclose adequate periodic information to continue the correcting certain imbalances and, in turn, design the regionalised recipes to combat adverse situations such as the current economic crisis.

Understanding the economic potential as "the capacity for growth and development that has a geographic space as a result of a combination of factors, geographical, historical, economic, institutional and social", we can define an index of regional potential (IRP) for the regions NUT II of the EU that collects information on these four factors: population (percentage of population EU, annual rate of growth population, annual rate of net migration), work activity (structure primary sector and industrial sector, unemployment rate, activity rate, production (annual growth, percentage of agricultural and fishing product, percentage of industrial product, percentage national total) and income (income per capita household, income per capita).

It would be a question of making a synthetic indicator based on information provided by a system of regional indicators (demographic regional indicator, indicator of labor regional activity, indicator of regional production and indicator of regional income) by a weighting system that standardises the different components and establishes limits of commensurability between the indicators.

$$\text{INDEX OF REGIONAL POTENTIAL: } IRP = \left(\frac{\sum_i (w_i x_i)^\alpha}{\sum_i w_i} \right)^{1/\alpha} ; \alpha > 0$$

In this expression, widely used as average, w_i are the relative weights for each indicator x_i . α is the term that allows to adjust the levels of compensation between the high and low levels of the indicators. If α is one, then we have the arithmetic mean. If α tends to zero, then we will have little compensation between the high and low values (the low value is the one that decides the value of the index) and finally, if α tends to infinity, the result allows the full compensation between values. This possibility is really useful when establishing minimum thresholds for certain indicators in which way, even when in the rest of indicators the positions are advantageous, the synthetic indicator will point lower due to the essential character of the before mentioned indicator (Minimax criterion).

The index of regional potential, besides being a general useful economic policy tool, along with being a means to forecast a crisis can provide us with regional measures to mitigate potential crises and define, without excessive delay that may lead otherwise to irreversible situations, appropriate recipes to combat these situations in an optimal way.

ⁱ See Tassilo Herrshel and Pontus Tallberg (Eds) (2011): *The Role of Regions Sweden*, 2011

ⁱⁱ The Preamble of the Treaty of Rome states that "... the EC Member States are concerned to ensure their harmonious development by reducing the differences existing between the various regions and the backwardness of the least favoured ..."

ⁱⁱⁱ The definition of the territorial units is based on the existing administrative units on the members' states. An administrative unit designates a geographical zone with an administrative authority that has to be able to make decisions of an administrative or of a political character inside the juridical and institutional frame of the Member state. The level NUTS to which an administrative unit belongs chooses from demographic thresholds (NUTS 1: between 3 and 7 million; NUTS 2: between 800,000 and 3 million; NUTS 3: between 150,000 and 800,000)

^{iv} In the current programming period of 2007-2013, the territorial objectives of EU regional policy are: Convergence (regions with a GDP per capita below 75% of the EU average); Competitiveness and Employment (regions not covered by the Convergence objective, with problems of competitiveness in its production structure); European Territorial Cooperation (horizontal objectives, with the aim of promoting cooperation across borders)

^v Depending on the availability of data.

^{vi} An interesting review of the empirical literature on economic geography can be seen in Overman, Redding and Venables (2003) specifically refer to the spatial distribution of economic activity in the EU, in Combes and Overman (2004).

^{vii} The study has been realized for the regions of the EU27 and those of Croatia and former Yugoslavian Republic of Macedonia.

^{viii} The growth of GDP per capita can be broken-down into variations in the productivity of work, employment rates employment and the percentage of population working age. Each of these components explain to a greater or lesser extent the changes in GDP growth per capita.

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