

# European Regional Inequalities: The Other Face of Development

Celeste Perrucchini<sup>1</sup> & Hiroshi Ito<sup>2</sup>

<sup>1</sup> School of Management, Nagoya University of Commerce and Business, Nisshin, Japan

<sup>2</sup> School of Economics, Nagoya University of Commerce and Business, Nisshin, Japan

Correspondence: Hiroshi Ito, Nagoya University of Commerce and Business, Nisshin, Japan. Tel: 81-561-73-2111. E-mail: hito@nucba.ac.jp

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## Abstract

Empirical evidence suggests an overall convergence in terms of GDP and per capita income occurring among the European Union (EU) Member States. Nevertheless, economic inequalities have been increasing at the regional level within European Union countries. Through the review of relevant literature, this study analyzes the increasing inequalities from an economical point of view, focusing on Italy and the UK as examples. First, a general overlook of the empirical evidence of the GDP and per capita income at national and sub-national levels will be presented. Second, an explanation of the possible causes of the results will be proposed through the use of economical and sociological theories. The findings of this research might uncover the relative inefficacy of EU Cohesion policies and point towards the necessity for deeper and more thoughtful measures to continue the convergence of Member States while preserving internal equilibria. This paper ends with discussions for the future directions of the EU.

**Keywords:** European Union, regional inequality, levels of development

## 1. Introduction

### 1.1 Introduce the Problem

Since its establishment, the European Union has grown in size and in depth. The current system is the outcome of several enlargements (i. e. increase of number of member states), a progressive extension of areas of competence and an increase in supranational powers and organizations, all legitimized by the principle of conferral, i.e. the delegation of political power by the Member States (Kassim, 2015). The main aim of the European Union changed from being merely an economic integration to include socio-political integration and international cooperation, extending its area of influence to manage those policies, which would facilitate the economical project at the core of the institution (Nugent & Paterson, 2003).

One of the most crucial EU policies is Cohesion, which is a policy with the aim of improving the socioeconomic well being of regions in the EU. It is fundamental to assure a fair geographical distribution of economic activities and wealth in order to achieve financial stability and an effective implementation of policies throughout the whole Union. The process of homogenization or harmonization (i.e. the process of creating common standards across the internal market) is supported by the stringent accession requirements (i.e. stable institutions guaranteeing democracy, the rule of law, human rights and respect for and protection of minorities; a functioning market economy and the capacity to cope with competition and market forces in the EU) and it is followed by the active contribution of the Community with the Cohesion Fund (i.e. financial tools set up to implement the regional policy of the EU). Evidence suggests that economic inequalities among member countries have been constantly decreasing. While the EU Gini coefficient (i.e. a statistical measure of the degree of variation represented in a set of values, used especially in analyzing income inequality) in Table 1 presents a slight increase from 2004 to 2015, this is explained by the accession of countries such as Serbia with an originally high coefficient. The highest Gini coefficient levels belong to Eastern European countries, which have been decreasing over time. Considering this information, inequalities among European Union Member States have been decreasing even if the Gini coefficient of the European Union as a whole has slightly risen.

The figures at the national level are encouraging and seem to prove the efficacy of the Cohesion policy. However, on a closer look, it is possible to see a different situation at the regional level. What is defined as a region here? For the purposes of management of programs and monitoring statistics, the European Union designed the

Nomenclature of Territorial Units for Statistics (generally called NUTS from the French version *Nomenclature des Unités Territoriales Statistiques*) system, dividing each country in statistical units based on a three level classification, representing the different dimensions of governance. NUTS 1 represents major socio-economic regions (e.g. France, Italy, Poland), NUTS 2 represents basic regions for the application of regional policies (e.g., Germany), and NUTS 3 represents small regions for specific diagnoses (e.g. Belgium) (Eurostat, 2013). In this paper, we analyze the NUTS 2 regions.

Table 1. Gini coefficient in the EU from 2004 to 2015

geo	time	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
EU (28 countries)	:	:	:	:	:	:	:	30.5	30.8	30.4	30.5	30.9	31
EU (27 countries)	:	:	30.6 (N)	30.3 (N)	30.6	30.9	30.5	30.5	30.8	30.4	30.5	31	31
Euro area (19 countries)	:	29.4	29.4	30	30.5	30.3	30.3	30.6	30.4	30.7	31	30.8	:
Euro area (18 countries)	30.7	29.3	29.3	30	30.5	30.3	30.3	30.6	30.4	30.7	30.9	30.7	:
Belgium	26.1	28	27.8	26.3	27.5	26.4	26.6	26.3	26.5	25.9	25.9	26.2	:
Bulgaria	:	:	31.2 (N)	35.3	35.9	33.4	33.2	35	33.6	35.4	35.4	37	:
Czech Republic	:	26 (N)	25.3	25.3	24.7	25.1	24.9	25.2	24.9	24.6	25.1	25	:
Denmark	23.9	23.9	23.7	25.2	25.1	26.9	26.9 (N)	26.6 (N)	26.5	26.8	27.7	27.4	:
Germany	:	26.1 (N)	26.8	30.4	30.2	29.1	29.3	29	28.3	29.7	30.7	30.1	:
Estonia	37.4 (N)	34.1	33.1	33.4	30.9	31.4	31.3	31.9	32.5	32.9	35.6 (N)	34.8	:
Ireland	31.5	31.9	31.9	31.3	29.9	28.8	30.7	29.8	29.9	30	30.8	:	:
Greece	33	33.2	34.3	34.3	33.4	33.1	32.9	33.5	34.3	34.4	34.5	34.2	:
Spain	31 (N)	32.2	31.9	31.9	32.4 (N)	32.9	33.5	34	34.2	33.7	34.7	34.6	:
France	28.2 (N)	27.7	27.3	26.6	29.8 (N)	29.9	29.8	30.8	30.5	30.1	29.2	29.2	:
Croatia	:	:	:	:	:	:	:	31.6	31.2	30.9	30.9	30.2	30.6
Italy	32.9 (N)	32.7	32.1	32	31.2	31.8	31.7	32.5	32.4	32.8	32.4	32.4	:
Cyprus	:	28.7 (N)	28.8	29.8	29 (N)	29.5	30.1	29.2	31	32.4	34.8	33.6	:
Latvia	:	36.2 (N)	38.9	35.4	37.5	37.5	35.9	35.1	35.7	35.2	35.5	35.4	:
Lithuania	:	36.3 (N)	35	33.8	34.5	35.9	37	33	32	34.6	35	37.9	:
Luxembourg	26.5	26.5	27.8	27.4	27.7	29.2	27.9	27.2	28	30.4	28.7	28.5	:
Hungary	:	27.6 (N)	33.3	25.6	25.2	24.7	24.1	26.9	27.2	28.3	28.6	28.2	:
Malta	:	27 (N)	27.1	26.3	28.1	27.4	28.6	27.2	27.1	27.9	27.7	28.1	:
Netherlands	:	26.9 (N)	26.4	27.6	27.6	27.2	25.5	25.8	25.4	25.1	26.2	26.4 (N)	:
Austria	25.8	26.3	25.3	26.2	27.7 (N)	27.5	28.3	27.4	27.6	27	27.6	27.2	:
Poland	:	35.6 (N)	33.3	32.2	32	31.4	31.1	31.1	30.9	30.7	30.8	30.6	:
Portugal	37.8 (N)	38.1	37.7	36.8	35.8	35.4	33.7	34.2	34.5	34.2	34.5	34	:
Romania	:	:	38.3 (N)	35.9	34.5	33.5	33.5	34	34.6	35	37.4	37.4	:
Slovenia	:	23.8 (N)	23.7	23.2	23.4	22.7	23.8	23.8	23.7	24.4	25	24.5	:
Slovakia	:	26.2 (N)	28.1	24.5	23.7	24.8	25.9	25.7	25.3	24.2	26.1	23.7	:
Finland	25.5 (N)	26	25.9	26.2	26.3	25.9	25.4	25.8	25.9	25.4	25.6	25.2	:
Sweden	23 (N)	23.4	24	23.4	24	24.8	24.1	24.4	24.8	24.9	25.4	25.2	:
United Kingdom	:	34.6 (N)	32.5	32.6	33.9	32.4	32.9	33	31.3 (N)	30.2	31.6	32.4	:
Iceland	24.1	25.1	26.3	28	27.3	29.6	25.7	23.6	24	24	22.7	23.6	:
Norway	25.2	28.2	29.2	23.7	25.1	24.1	23.6	22.9	22.5	22.7	23.5	23.9	:
Switzerland	:	:	:	30.4	31.1	30.7	29.6	29.7	28.8	28.5	29.5 (N)	:	:
Montenegro	:	:	:	:	:	:	:	:	:	:	:	:	:
Former Yugoslav Republic of Macedonia, the	:	:	:	:	:	:	:	:	:	38.8	37	35.2	:
Albania	:	:	:	:	:	:	:	:	:	:	:	:	:
Serbia	:	:	:	:	:	:	:	:	:	:	38	38.6	38.2
Turkey	:	:	44.9	43.2	43	44.2	43.5	43.3	42.8	42.1	:	:	:

Source: Eurostat (2016).

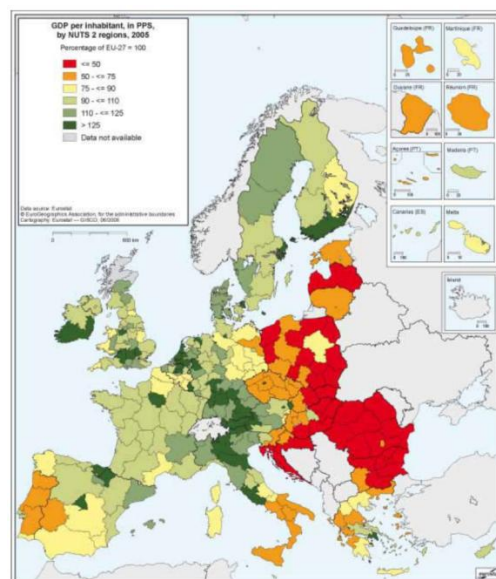


Figure 1. GDP per Inhabitant (PPS) by NUTS 2 regions, 2005, as percentage of EU average  
Source: Eurostat, 2000.

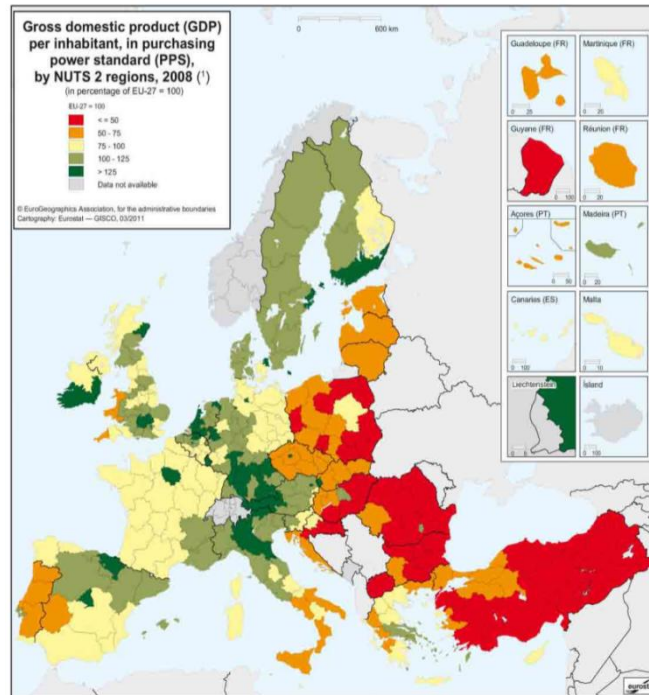


Figure 2. GDP per Inhabitant (PPS) by NUTS 2 regions, 2008, as percentage of EU average

Source: Eurostat, 2000.

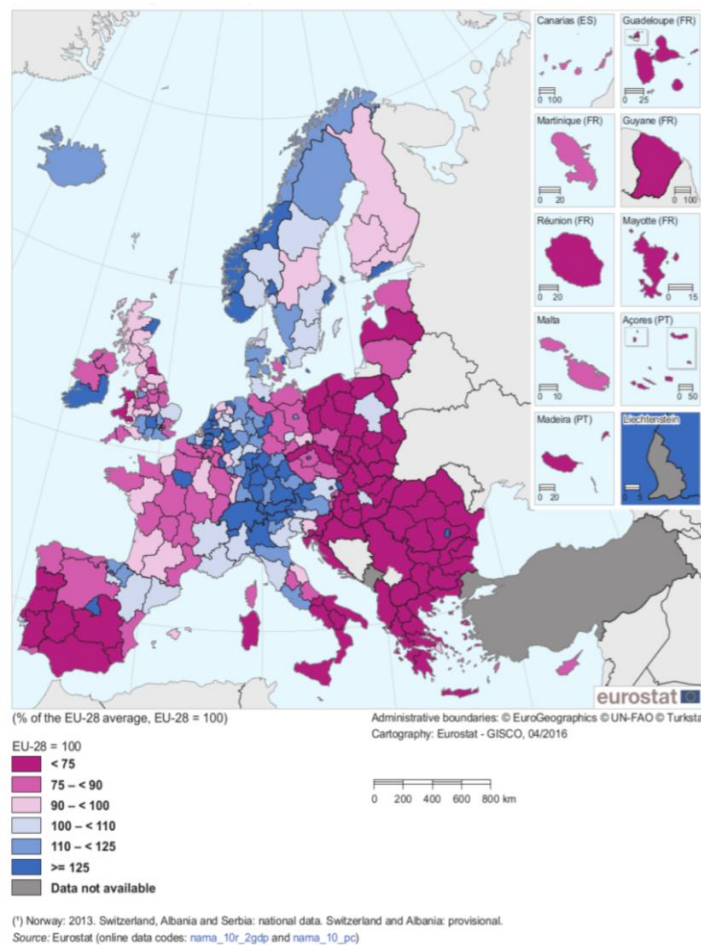


Figure 3. GDP per Inhabitant (PPS) by NUTS 2 regions, 2014, as percentage of EU average

Source: Eurostat, 2011.

Table 2. Richest and Poorest regions over time

	Poorest Region	Avg %	Richest Region	Avg%	Ratio
2005	North-East Romania	24	Inner London	305	12.7
2008	North-East Romania	32	Inner London	345	10.7
2014	Severozapaden Bulgaria	30	Inner London	539	17.9

Note. Comparison of GDP per capita in PPS, as percentage of EU average. Ratio computed as (Richest GDP/Poorest GDP).

Source: Eurostat, 2005; 2008; 2015.

Figures 1, 2 and 3 show the distribution of GDP per capita across NUTS 2 regions respectively in 2005, 2008 and 2014. Despite the increase in relatively poor regions because of the accession of Eastern European countries, the trend in the other countries seems to be a concentration of wealth in determined geographical areas. The cases of Italy and the United Kingdom are the most evident. In Italy, there is a clear division between northern and southern regions, with a strong convergence in the region of Lombardy. In the UK, the concentration of the wealth is predominant in the southern regions surrounding the English capital. The case of UK is particularly relevant as Inner London is the richest of all NUTS 2 regions. In Table 2, the poorest and richest regions for the years 2005, 2008 and 2014 are listed, together with the ratio between their GDP value as percentage of the EU average. The wealth gap is slightly closed by the improvement in the lowest value from 24% to 30%; nonetheless, the highest boundary passes from 305% to a striking 539%, utterly outweighing the opposite phenomenon. Accordingly, the ratios between the two extremes passes from 12.7 to 17.9. As one of the limitations of this study, it is important to note that the EU average GDP values were different years analyzed. If the EU average stayed the same or dropped, even though the percentage came close to the average in certain countries, the wealth of individuals may not have actually risen. In other words, the same percentage of the EU average (e.g. 50%) may not indicate the same amount of overall wealth in 2005, 2008, and 2014.

## 2. Literature review

In order to explain these differences in wealth distribution and economic activity concentrations, a number of theories and approaches have been used. The ones used in this research are the neo-classical approach and the new economic geography approach (Altomonte, 2015).

### 2.1 Neo-Classical Economics

The most accredited neo-classical theories involved in this explanation find the cause of regional inequalities in the process of economic integration. The continuous activities of tariff lowering and international trade intensification have been main aims of the European Union since the creation of its “ancestors”: the European Coal and Steel Community (ECSC) and the European Economic Community (EEC), respectively in 1951 and 1957. These processes (e.g. tariff lower, international trade intensification and the creation of the EU ancestors) had an impact on the labor specialization of countries and in particular of regions, leading to an unequal distribution of economic activities, wealth and growth. The theories analyzing the effects of specialization are: 1) the theory of international trade, which focus on the comparative advantage (i.e. Ricardian and Heckscher-Ohlin-Samuelson models), and 2) the growth theory, focusing on marginal productivity and technological progress (i.e. Solow model).

The Ricardian model was developed in 1817 by the English political economist David Ricardo (Ricardo, 1911). It studies and explains the behavior of agents engaging in trade based on the notion of comparative advantage, i.e. the relative efficiency of one agent in the production of one good or service compared to of the other agents. Based on the assumption of initial unequal endowments and same technology, the model demonstrates that agents always benefit from engaging in free trade and that they will specialize in the production of the goods in which they have a comparative advantage. In the end, all agents will only produce a limited range of goods, exporting such products and importing the rest of their commodities from the other agents, leading to a process of extreme specialization. The Krugman specialization index gives an empirical confirmation of the results just described: Table 3 suggests an increase in the value of each country’s index, consequently accompanied by an increase in the EU average value from 0.432 in 1970 to 0.471 in 1997.

This index measures the degree of specialization of economical activities by comparing the differences in the industry structures of determined countries. The variable assumes values from 0, which is total uniformity of industries, to 2, complete difference. As predicted by the Ricardian model, trade intensification across the European Union and increased national specialization are strictly linked in a positive relationship confirmed by the data in Table 3. Nonetheless, the model is too simplistic and ignores important factors such as technology, long-term consequences and multiple factors of production. Furthermore, if it were completely true, the values

observed in the table would all be much closer to 2.

Table 3. Krugman specialization index (Production data, 4 year averages)

	70/73	80/83	88/91	94/97	94/97 - 80/83	94/97 - PROJ
Austria	0.314	<b>0.275</b>	0.281	0.348	0.073	0.057
Belgium	<b>0.327</b>	0.353	0.380	0.451	0.099	0.088
Denmark	0.562	<b>0.553</b>	0.585	0.586	0.033	0.026
Spain	0.441	<b>0.289</b>	0.333	0.338	0.049	0.043
Finland	0.598	<b>0.510</b>	0.528	0.592	0.083	0.034
France	0.204	<b>0.188</b>	0.207	0.201	0.013	0.019
G. Britain	0.231	<b>0.190</b>	0.221	0.206	0.017	0.016
Germany	0.319	<b>0.309</b>	0.354	0.370	0.061	0.055
Greece	<b>0.531</b>	0.580	0.661	0.703	0.123	0.105
Ireland	0.701	<b>0.623</b>	0.659	0.779	0.156	0.197
Italy	<b>0.351</b>	0.353	0.357	0.442	0.089	0.119
Netherlands	<b>0.508</b>	0.567	0.547	0.517	-0.050	-0.046
Portugal	0.536	<b>0.478</b>	0.588	0.566	0.088	0.088
Sweden	0.424	<b>0.393</b>	0.402	0.497	0.103	0.110
Average	0.432	<b>0.404</b>	0.436	0.471		
Weighted ave.	0.326	<b>0.302</b>	0.330	0.354		

Source: Midelfart-Knarvik et al., 2000.

The Ricardian model was further developed with the Heckscher-Ohlin-Samuelson model. First developed in 1933 by Eli Heckscher and Bertil Ohlin, the model of international trade built upon the Ricardian predecessor saw many contributions in the following decades, which expanded its predictive power significantly (Heckscher et al., 1991). The main theorem states that an agent will produce and export the goods or services which require the production factors that the country is abundant in, while importing goods and services not produced. For example, if China is abundant in cheap unskilled labor and manufacturing t-shirts requires such a factor, then China will produce and export t-shirts; consequently, the Asian country will import skill-intensive goods, such as hardware and spaceships, from skill-abundant country, such as the US. The outcome of the model is again specialization, but not the absolute one theorized by the Ricardian model. The result is more in line with the empirical evidence provided by the Krugman specialization index. However, assumptions in the model like capital immobility or homogeneous technological endowment still cause some critical limitations which cannot be ignored. Furthermore, the model accounts for differences in economic activities but does not address the problem of income distribution.

The Solow model provides an analysis of income dispersion, filling the gap of the previous theories. Developed by Robert Solow and Trevor Swan in 1956, this model states that technological progress is the engine of economic growth in the long run (Solow, 2000). On the one hand, the poorest countries benefit from the implementation of already developed technologies and a consequent high growth, leading to the reduction of the wealth gap with respect to the richest countries ( $\beta$ -convergence). On the other hand, the richest countries that share the same technologies and standards, tend towards the same growth level ( $\sigma$ -convergence).

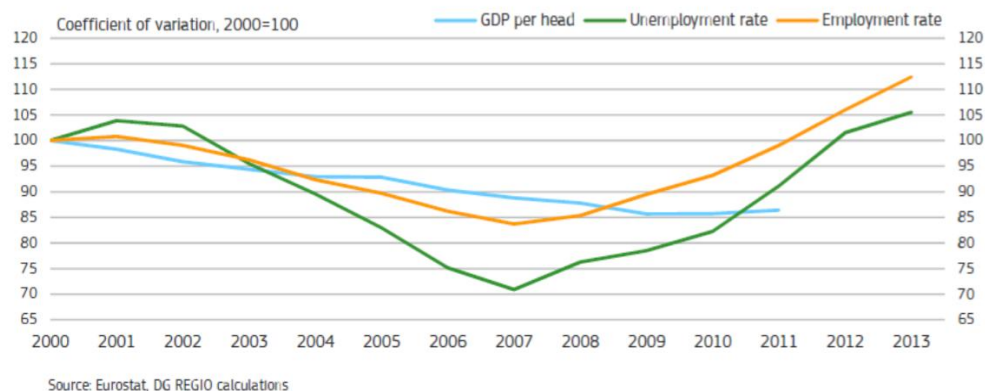


Figure 4. Coefficient of variation of GDP per head, employment rate (15-64), unemployment rate, EU-27 NUTS 2 regions, 2000-2013 ( $\sigma$ -convergence)

Source: Almonte, 2015.

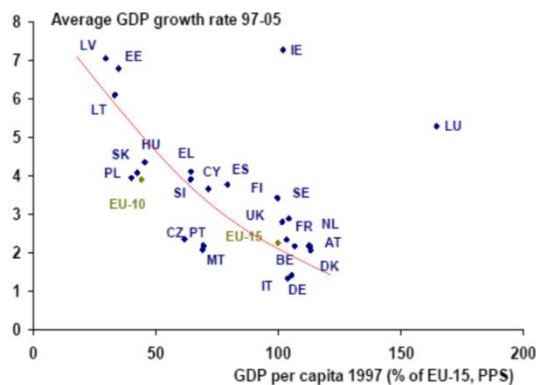


Figure 5. Real convergence and initial per capita income ( $\beta$ -convergence)

Source: Almonte, 2015.

As shown in Figures 4 and 5, there are signs of both  $\beta$ -convergence and  $\sigma$ -convergence between the Member States of the European Union across time. However, an analysis conducted at regional level shows the opposite result: from Figure 6 we can see an increase spatially in income inequality in the case of UK. In Figure 7, the results for regional  $\beta$ -convergence are unclear, not showing a definite trend. Comparing the regional economic growth in Figure 8, we can see that not all the poor regions have been growing faster than the richest ones. Therefore, the model has proved to be appropriate at the macroscopic national scale, but inappropriate at the microscopic regional one.

### 2.2 New Economic Geography

The new economic geography approach helps analyze differences in economic activity and wealth allocation between national and regional levels (Yeung & Kelly, 2007). It suggests that regional integration causes a concentration of economic activity spatially, according to two opposite forces: agglomeration force, which encourages geographical concentration and dispersion force, which encourages geographical dispersion. On the one hand, the agglomeration forces are based on demand-linked and cost-linked circular causality: the former implies an increase in the size of an already large market given its power to attract production (production shifting) and expenditure (expenditure shifting), with its lower shipping costs and expertise concentration; the latter fosters an enlargement of the market with production and cost shifting, given its lower costs of intermediate goods. These two interrelated processes lead to pure core-periphery patterns across space. On the other hand, dispersion forces are mainly based on the concept of competition: a larger market implies more competitors and lower returns; sometimes a monopoly in smaller markets compensates the higher costs of production and shipping.

The two forces oppose each other and the balance reached determines the observed allocation in space. These equilibria vary from case to case and this might give an explanation to the different circumstances observed in countries and regions. The empirical evidence seen above would suggest that, at the regional level, agglomeration forces prevail, leading to a core-periphery pattern tendency, while at national level the opposite is true. Unfortunately, the model doesn't account for the reasons of such imbalance and a deeper interpretation is left to the reader.

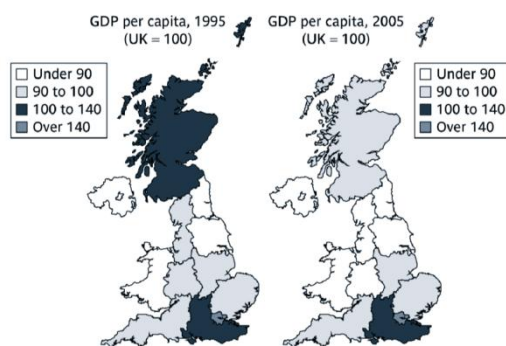


Figure 6. UK regional GDP per capita comparison (Almonte, 2015)

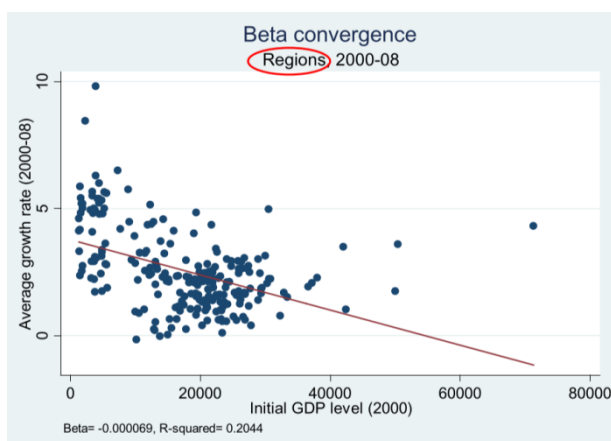
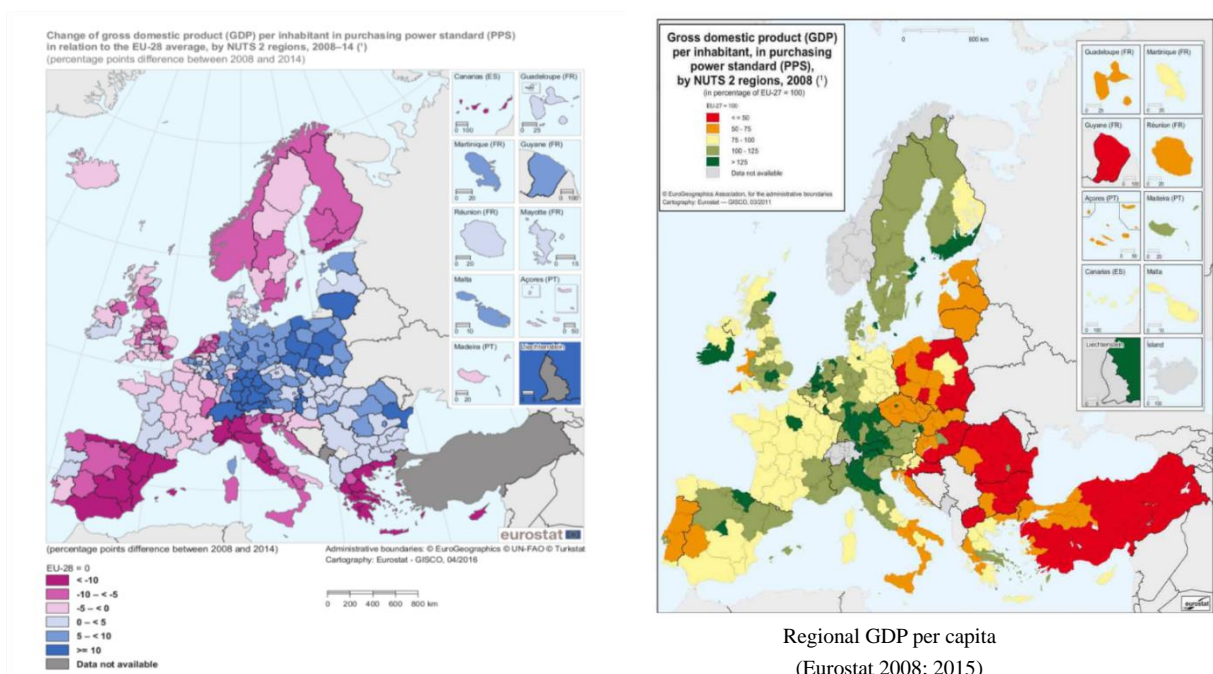


Figure 7.  $\beta$ -convergence across NAT 2 regions (Almonte, 2015)

### 3. Discussion

The theories analyzed in this study provide a foundation for the empirical explanation of the inequality phenomenon happening at the regional level in the European Union. The neo-classical economic theories focus on the specialization processes, while the new geography model approach the problem from a more distributional point of view. These models mentioned provide a good starting point to acquire a better understanding of the problem, especially regarding the trends and their forecasts.

Nevertheless, there are a large number of relevant factors that are not taken into account for simplification purposes. This prevents us from estimating the impact of, for example, national labor and social policies, European level policies, education levels, cost of life, and so forth. These variables are numerous and hard to assess at the country level, not to mention at the regional level. The problem is too complex to be analyzed with a single model and equally hard to address with a comprehensive policy at a supranational level. Therefore, it is not surprising to see a failure of the countermeasures taken at all levels of governance.

The main response to the inequality problem by the European Union has been the Cohesion Policy (European Commission, 2014). In the 2014–2020 plan, the policy provides for the creation and administration of three funds, each targeting different subjects. The European Regional Development Fund, destined to all EU regions, provides €351.8 million proportionally distributed based on regional GDP. The Cohesion Fund goes to Member States whose GDP per capita is less than 90% of the EU average. The European Social Fund, concerning every

country or region of the Union, is primarily concerned with the training of workers, youth unemployment, social inclusion and gender equality, school drop-outs and social innovation. The aim of the policy is to reduce inequalities across and within Member states; however, in light of the mentioned results, it is important to ask ourselves some questions: can we say that the policy is effective? Can the European Union alone fight these dynamics? What changes are required to fill its gaps?

The answer to the first question is obviously no. Data suggests that the Cohesion Policy managed to promote cohesion at national but not regional level. However, this does not automatically imply that the EU is not capable of addressing the problem. We believe that a simple system of subsidies is not the right solution to inequality: it is important to provide the funds necessary to encourage economic activity, but the creation of clusters will inevitably redirect all the money to determined centers. As the Dependency Theory prophesizes, money will eventually concentrate in the capitals and never flow abundantly to the peripheries. Other policies, delivered by the EU alone or possibly in collaboration with lower levels of governance, can provide solutions:

1) *Focused investments in local startups* – A system of subsidies targeting the innovation and initiatives in the less wealthy regions. Contrary to the current fund allocation, this mechanism would reward specific projects which could demonstrate their contributions to the revitalizations of certain areas. An advantage of this policy involvement of local communities, which solution is the best for themselves. A disadvantage is that, in order to assess the quality of a project, the EU should set up a network of regional commissions, whose coordination might be costly and heavily bureaucratic; and

2) *Decentralization of administrative and decision-making powers to local government, with respect to the allocation of the funds.* In this scenario, the EU would provide subsidies allocated at regional governments' discretion. Since the situation of each region is different, the local administration would better channel the funds towards the economic areas according to their specific needs. An advantage of this policy is region-specific allocation of resources. A disadvantage is that it is hard to assess the accountability of local governments, and there would be risk in wastes of money and corruption.

#### 4. Conclusion

The efficacy of the European Cohesion Policy remains debatable. Other measures must be taken into consideration in order to fully address the problem of inequality and to involve other levels of governance. We suggest two policies: focused investments in local startups and decentralization of administrative and decision-making powers. Whereas the question of which strategy is right remains open, these policies might serve as a strategy towards tackling inequalities at the regional level in EU countries.

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