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Human Development in Europe

A study on the phenomenon of convergence among regions and countries in the Euro Area.

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Table of contents

<i>Abstract</i>	3
<i>Introduction</i>	4
<i>1. A New Measure of Development</i>	7
1.1 GDP: critical issues	7
1.2 From Mainstream Economics to Human Development Approach	8
1.3 A New Definition of (Human) Development	11
1.4 The Human Development Index (HDI)	13
1.5 The European Regional Human Development Index	16
<i>2. Convergence in Europe</i>	20
2.1 Historical framework: Introduction to the study	20
2.2 Convergence and the Solow Model	23
2.3 Related works: an overview	26
<i>3. The Study</i>	32
3.1 Sample and time period of analysis	32
3.2 Comparing EA12 countries: GNI vs. HDI	33
3.3 Comparing EA19 countries: GNI vs HDI	41
3.4 Comparing regional differences within countries: GDP vs EU-RHDI	44
<i>Conclusions</i>	53
<i>Bibliography</i>	57
<i>Appendix</i>	61
<i>Acknowledgments</i>	63
<i>Summary (in Italian)</i>	64

Abstract

This final project aims at providing an analysis on the patterns of convergence between European countries. The European integration process has, indeed, set itself the objective of convergence between those countries ratifying the Treaty of Maastricht. Convergence, however, is intended as a trend that should be evaluated exceeding the measure of the GDP and the borders of singular states. Therefore, this thesis offers an assessment based on data at the regional level about whether there has been a trend of convergence or rather one of divergence (or polarization) among the countries that have adopted the euro, in contrast with the European policies of social cohesion in the European objectives. In order to do so, the European Regional Human Development Index, formulated by the European Commission, will be used to calculate the changes in human development in the last seventeen years (from 2000 to 2017) of twelve European countries, namely those that first signed the Treaty of Maastricht and adopted the Euro. The idea is to monitor European development as intended by the Human Development Approach, focussing on three dimensions: health, knowledge and income.

Introduction

There is a general understanding on the European purpose of convergence among its Member States, especially in regard to those countries that participated in the enlargement processes of the European Union. However, it is also generally observed a sensitive increase in intra-country regional disparities in terms of economic-performances and opportunities, and in this concern the Italian situation offers a representative case. This phenomenon of regional polarization has two evident consequences: on one hand, some of those regions whose growth is increasingly above the average of the country are claiming greater autonomy, e.g. Northern Italy and Catalunya. On the other hand, regions whose growth is heavily below the national average are facing serious emigration issues. The agglomeration argument explains this phenomenon which affects the European territory in economic as well as geographical terms, by focusing on the high performances of richer regions - such as capital cities or metropolitan areas - and less on the poor performances of the least developed ones.¹ The topic of this research has therefore been chosen on the basis of this alleged regional divergence within countries of the European Union, in contrast to those European policies aimed at fostering social and economic cohesion. Hence, it is then questioned whether these differences are increasing (or not) and whether they are affecting also inter-state cohesion. This may – or not – result in a divergent trend among regions within Europe, and in a convergent trend among countries. Nonetheless, the phenomena of economic convergence in particular and economic growth in general are very complex and hence difficult to be entirely studied in one single short contribution such as this thesis. The scope of the analysis has been so resized to include only the “older” European Member States that constitute the Euro zone. Therefore, this research aims at providing an evaluation based on data at the regional level of those European countries that were expected to converge at a faster pace. Nevertheless, the study will not focus on individual performances, whether national or regional, but on the analysis of the wider Euro area. Deepening the analysis to include the trend study for each specific case, by considering the reason behind their distinct patterns, would require an inquiry outside the one proposed, however interesting it may be.

Concerning the selection of the measure of analysis, it must be noticed that it has theoretical grounds, more specifically it refers to the Human Development Approach, delved by Mahbub ul

¹ Wunsch, 2013. pages 78-83

Haq and Amartya Sen. This perspective criticises Mainstream economics especially with regard to economic growth, individualism, and the broader concept of capitalism. It actually argues that development involves the exercise of personal, socio-economic and political freedom, that people should be at the core of economic evaluations, and that capitalism might enhance underdevelopment in specific areas for a specific group of people. This work shares the general acknowledgment that an analysis taking into consideration solely the GDP fails to capture the socio-economic well-being of a given society. The index proposed by the United Nations, i.e. the HDI, is instead preferred because of its composite structure, which aims at providing a more informative picture, even though it is recognized to have some limitations². Moreover, in 2014, the European Commission adjusted the HDI so as to provide a specific measure capable to evaluate regional differences within the European territory, which resulted in the elaboration of the EU Regional Human Development Index (EU-RHDI).

This thesis will therefore use both the HDI and the EU-RHDI. For the HDI analysis, UNDP published values have been employed, while EU-RHDI values have been calculated *ex novo* as part of this work. In particular, HDI scores from 1990 to 2018 have been gathered, then confronted with EU-RHDI scores calculated for years 2000 to 2017. The results presented in this thesis are hence heavily sensitive on both the choice of the measure of analysis and data availability. However, this specific selection of the index requiring its own elaboration of data represents the novelty presented in this work, which is unique in its contribution to the European convergence debate.

The structure of this dissertation is divided in three parts. The first chapter offers an overview of the subject of analysis, briefly providing an economic and theoretical background considered to be necessary to a proper understanding of the matter. To this aim, after having underlined the limits that GDP faces when assessing the socio-economic well-being of a society, an introduction to the Human Development Approach is proposed so as to illustrate the theoretical grounds on which the Human Development index is based. Then, the HDI is described as well as the EU-RHDI, paying attention at showing how the latter can be calculated.

Afterwards, the second chapter presents the phenomenon of convergence in Europe. First, an historical framework is provided, stressing the European rationale of convergence, which can be traced back to the Treaty of Maastricht and to the European integration processes. Second, a brief

² Chapter 1, par. 1.4

overview on some previous studies on similar matters is presented, thought to be necessary in order to better illustrate the controversy in the current literature over European convergence.

Finally, the third chapter deals with the genuine contribution of this thesis consisting of an analysis on the European patterns of convergence both at the national and regional levels. More precisely, for the national analysis both GNI and HDI are studied over time, at first including the EA12 Member States, and then the scope has been extended to include countries that entered in the euro zone in 2004. For the regional analysis instead, the study compares results obtained from both EU-RHDI and GDP. The GDP has been preferred, rather than GNI, due to availability of data. Regions at NUTS 2 level were compared in order to analyse the trend of divergence hypothesized. Unfortunately, the GDP values for France and Netherlands are missing.

This work suggests that in terms of human development there is a divergent trend among the regions of those countries that first joined the Euro area. Both beta and sigma divergence has been observed for the data considered, meaning that inequalities in human development are increasing among regions, and that the catching up effect predicted by the Solow model is insufficient to address the (inverse) agglomeration effect. In the analysis at the national level, instead, results demonstrate that the main drivers of European convergence both in GNI and HDI are the New Member States.

1. A New Measure of Development

1.1 GDP: critical issues

Since the 1980s, the reliability of GDP (Gross Domestic Product) as the measure of a society's economic health and social well-being has been questioned and criticised. Indeed, it has been argued that the GDP was never intended to provide a measure of national development, but only a measure of aggregate output in the national income accounts.³ Several concerns are expressed when aggregate measures, mostly the GDP, are taken into consideration with the aim of assessing the socio-economic well-being of a society and, most of all, its development. One of the concerns emerges when, even though the statistical analysis may be proven to be correct, debates can – and do – arise: not only over the process of measurement, but also over the very definition of the concepts on which the analysis is based. In addition to that, a second issue is the fact that such calculations end up with notably different outcomes if some phenomena are excluded or not. For example, if air pollution, that definitely affects the well-being of people in a negative way, is not taken into consideration, the outcome of an increase in the consumption of gasoline will end up showing a positive economic impact. It is crucial, then, to differentiate the well-being of a society from its economic growth, a distinction that will be examined later on. In particular, it is a matter of fact that environmental costs have been widely excluded while measuring economic performances for long enough, and that a measure that includes them might provide remarkably different performances.

Similarly, it is pivotal to mention the consequences of uneven distribution of wealth among people, i.e. inequality: indeed, the growth of GDP – or of GDP per capita - may fail to provide an accurate image of the society due to an unfair distribution of income. Quite often, economic growth generates winners and losers. Therefore, in the absence of redistributive mechanisms, even though the life standard of a considerable share of the population is worsened, the overall statistics might show a positive economic growth, due to the substantial enrichment of another part of the population.

To summarise, three major concerns were presented, namely the subjectivity of specific definitions, the exclusion (or not) of some phenomena from the statistical measures, and

³ Blanchard, 2015. pages 42-47

inequalities in the distribution of resources. However, these issues only partially depict the critical debate on indicators of development. Having acknowledged this, it is possible to understand why, in 2008, - in the middle of the financial crisis - the at-the-time French President Sarkozy set up a commission devoted to “the Measurement of Economic Performance and Social Progress.” It has been argued, in fact, that the surprise of many before the crisis has derived from an inappropriate use of some economic indicators (or their misinterpretation). This commission was headed, not by chance, by Joseph Stiglitz, Amartya Sen and Jean Paul Fitoussi, respectively the president, the advisor and the coordinator of the commission. The purpose of the commission was, first of all, to label GDP limits as an index for socio-economic development; second, to consider what other variable, phenomenon or information should be included when producing a more pertinent indicator of social well-being; third, to present in a properly the already existing statistical information.⁴

Today, the GDP is still the most widely used indicator of economic performance, however new indicators for social progress and economic prosperity have been advanced. The most prominent example is the Human Development Index (HDI), proposed by the United Nations in the 1990s, with the aim of emphasising that “people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone.”⁵ Therefore, the GDP is losing its primacy as the main measure of development, driven by market logics, in favour of a new man-centred analysis, that holds the individual and his capability as the main focus of inquiry. This index is used to be considered as the by-product of a new paradigm, that is the Human Development Approach, developed by the economist Mahbub ul Haq and supported by Amartya Sen’s work on human capabilities.

1.2 From Mainstream Economics to Human Development Approach

Mainstream economics is a term that became of popular use in the 20th century and expresses those economic theories that share specific assumptions and methodology. It is sometimes called “orthodox economics” as it embraces classical theories such as neoclassical economics and Keynesian economics. One of the assumptions on which Mainstream economics is based is the full rationality of economic actors. Briefly explained, it is the basic assumption of rational choice

⁴ Hardeman, Dijkstra. 2014.

⁵ "Human Development Index (HDI), Human Development Reports". 2019.

theory according to which individuals are intended as rational actors that pursue utility maximisation, and that individual's behaviour is representative of the aggregate economic behaviour. Nowadays, however, it has been widely recognised that individuals' behaviour is not always rational and that choices can be biased instead; the increasing public interest on behavioural economics is explanatory of this matter. Second, according to the theory of Modernisation, *development* coincides with *economic growth*. Even though flatly simplified, the former is intended as capitalist development and the latter is considered to be reached via industrialisation. Capitalism will lead to economic growth and, therefore, to societal development: the more savings are made (capital accumulation) the more investments will be carried out. This would create a virtuous cycle that, along with technological innovation, will fuel sustained economic growth and increase income. For this reason, according to the neoliberal theory, a laissez-faire policy is recommended, involving a minimal state intervention, due to the fact that market economy and capitals can regulate themselves and that they will, in the long run, increase people's well-being.

Whereas Mainstream economics might be defined as the "orthodox economics" to emphasise its conventional nature, including neoclassical economics assumptions, e.g. the rationality of actors in maximising their utility; the Human Development Approach can be defined as "heterodox economics", since it distanced itself from those mainstream assumptions. Indeed, it criticises mainstream economics especially for what concerns economic growth, individualism, and the broader concept of capitalism. First, according to the Human Development perspective, there is evidence showing that under the capitalistic system both development and underdevelopment may happen. What is contested is indeed this necessary link between economic growth and development. As stated before, the former might happen without the latter, but not *vice versa*. This approach argues that the very concept of development implies complex socio-political relationships which exceed the mere economic growth. More precisely, according to the Human Development Approach, development does not correspond to economic growth, it is about freedom⁶. In particular, the main focus of human development approach is human functional capacity, and freedom is the key of this process of development. As it has been said before, this argument has been widely supported by Amartya Sen, who stated that development is about expanding substantial individual freedoms. Using Hendrik Van Den Berg's definitions, while

⁶ Sen, 2013.

economic *growth* “is an increase in material output per capita”⁷ and so can be properly measured by GDP, economic *development* instead “describes the full range of changes in humanity’s economic, social and natural environments that are perceived by people as making life more pleasant”⁸, hence the concept of economic development is strictly correlated to the individual’s perception of reality.

In addition, it is possible to state that the Human Development Approach questions and challenges another mainstream economics’ fundamental pillar, namely the rationale of capitalism. Under the Human Development perspective, capitalism must be reformed since it does create underdevelopment, not only in relation to different countries, but even within the same country. What is advocated is the fact that the extent of deprivation of some specific groups in very developed and rich countries (such as the African Americans in the United States) can be compared with that in the underdeveloped countries.⁹ It is however important to specify that Human Development does not entirely reject capitalism, it is not against the system. Instead, according to it, the solution is within capitalism, even though, as stated before, it must be reformed.

Finally, another issue raised by the heterodox approach concerning mainstream paradigm is the concept of individualism. For the sustainable Human Development Approach, the individual does not limit himself to maximise (successfully or not) its own utility, rather he is a social being that thinks of himself as a part of the community in which he lives. In this context it is possible to insert the idea of sustainability that, again in Van Der Berg’s words, “is closely related to the compatibility of economic activity with the social and natural spheres of human existence.”¹⁰ This concept can be extended to the idea of letting future generations successfully satisfy their needs and so to exercise their capabilities.

For all these reasons, and many others, the mainstream paradigm is commonly questioned and criticised - in some cases even rejected by many economists, which argue that the orthodox school of thought does not provide convincing representation of human behaviour. In fact, pivotal factors such as freedom, poverty, oppression, gender relations, environment, colonialism, income inequality, creativeness and others, are not included into mainstream economic models, which are scaled back, indeed, for what they truly are: theoretical models. Consequently, also the

⁷ Van den Berg, H. 2017.

⁸ Van den Berg, H. 2017.

⁹ Sen. 2013.

¹⁰ Van den Berg, H. 2017.

reliability of GDP as a measure of a society's well-being is proven to be limited, reduced to represent a country's output. Nonetheless, as Joseph Stiglitz (Nobel prize in economic science, 2001) wrote about the contention on the Financial Times (USA): "changing paradigms is not easy. Too many have invested too much in the wrong models".¹¹ Still, as a matter of fact, mainstream economics as well as capitalism (as it has been intended so far) rules our society, even though the need for a more comprehensive Economics study is spreading, de facto, around the globe.

1.3 A New Definition of (Human) Development

In 1990, the United Nations Development Programme published the first *Human Development Report* and, in this occasion, the HDI was introduced as its official statistical measure. Since then, a new *Human Development Report* is published nearly every year, changing the specific focus of the inquiry. For example, the 2019 Report will focus on inequality¹², as other major aspects of development have been analysed before, like People's Participation (1993), Human Security (1994), Globalization (1999), Human Rights (2000) and Climate Change (2007/8), to name just a few. The very first definition of Human Development was provided in the first Report, and I quote:

*"Human development is a process of enlarging people's choices. The most critical of these wide-ranging choices are to live a long and healthy life, to be educated and to have access to resources needed for a decent standard of living. Additional choices include political freedom, guaranteed human rights and personal self-respect".*¹³

It is possible to notice how the focus is shifted from economic growth to people's well-being. The very idea of development is here clearly identified with the increasing opportunities people face and their freedom to choose among them as they like. If we intend those opportunities to be intergenerational by nature, it is possible then to extend the concept of human development also in environmental terms, and more generally, to include the concept of "sustainability" in the broader concept of "development." Furthermore, three essential aspects are underlined in the

¹¹ Stiglitz, J. (2018).

¹² United Nation Development Program website.

¹³ United Nations Development Programme. 1990. Page 1

above definition, which are meant to be the three dimensions that combined constitute the Human Development Index, namely a long and healthy life, education (or knowledge) and a decent standard of living. But, in addition to that, other three aspects are expressed, even though more conceptual: political freedom, personal and human rights respect.

In this final project, it is therefore proposed the same concept of “development” as intended by the Human Development Approach, that is “human development”. According to Mahbub ul Haq, founder of the UN Human Development Reports, “people” should be considered at the centre of development’s concerns. Indeed, there is a new conceptualisation of development in terms of people – intended as a community of individuals – rather than in terms of outcome; it is only by recognising people’s needs and values, rather than solely the economic growth of a given society, that it is possible to reach a comprehensive definition of development. Under this perspective, the assumption that economic welfare will lead automatically to people’s well-being is abandoned, so income is seen as a mean rather than as an end. Indeed, the conditions required for human development are far more elaborated than the mere economic growth, since they are based on concepts such as freedom, human rights and environmental sustainability, for example. In his book, *Reflections on Human Development*, Mahbub ul Haq expanded the human development paradigm to all aspects of development, whereas he then developed four fundamentals: equality, sustainability, productivity and empowerment. He identified the purpose of development in expanding human choices, which means not only to improve people’s opportunity, but to make people choose between them freely.

Whilst Mahbub ul Haq is recognised as the father of the human development paradigm, Amartya Sen, Nobel prize in 1998, can be considered the pioneer of this economic and philosophical school of thought. In fact, in his masterpiece *Development as Freedom*, he expressed his definition of development as a process of expansion of personal, socio-economic and political freedom.¹⁴ Therefore, according to him, the ultimate aim should be of eliminating all kinds of “unfreedom”, not only those strictly related to income, but also those politically and personally repressive. In this regard, he clearly makes the distinction between income and capabilities, stating that even if a correlation does exist between the two, there are a wide range of other factors that define and

¹⁴ Alkire, 2010.

determine human capabilities, rather than income only. That is to say, income is a necessary, but not a sufficient determinant of human capabilities.

1.4 The Human Development Index (HDI)

The rationale of the HDI has been traced back to three different approaches, namely the Basic Need Approach, the Utilitarian Approach and the Freedom (or capability) Approach.¹⁵

Briefly explained, the Basic Need Approach tries to restrict the analysis of human development to the essential necessities of human beings, precisely “basic needs”. This approach has been introduced by the International Labour Organization (1976) and today it is often associated with the measurement of absolute as well as relative poverty, especially in terms of consumption. In this regard, it is then possible to affirm that the Basic Need Approach advocates for a universal and objective definition of development, assumption shared also by the utilitarian rationale. However, this presumed universality of basic needs, including its scope and extension, represents the subject of this approach major criticisms. It has been argued that while there might be a general agreement on the necessity of basic goods such as food, water or clothing, it may be difficult to convene on other aspects of human development, such as education, or civil rights. Moreover, it has been questioned the very existence of a list of basic needs that apply to every human being. But despite the weaknesses of this perspective, it can be argued that the choice of the three dimensions of the HDI are indeed related to the Basic Need Approach, identifying knowledge, income and health as human development’s major concerns, as it will be explained below.

The Utilitarian Approach is instead based on a consequentialist perspective, according to which choices and behaviours are not to be judged under a normative analysis, but rather by their outcomes and their consequences. It aims at maximising people’s utility, without any ethical or moral constraints; accordingly, human development should be understood as a process increasing people’s aggregate utility. Even in this case, several weaknesses of this Approach have been highlighted over time. The three major critiques made by utilitarianism opponents are, first, that this approach does not take into consideration the differences that do exist among individual’s utility, hence by summing them all together. Second, it has been criticised for disregarding the influence that the context (or society) has on individual’s choices, linked to the fact that

¹⁵ Hardeman, Dijkstra. 2014.

individuals' judgment is not always rational. Most importantly, it has been argued that the utilitarian focus strictly based on output may be in contrast to moral and ethical intuitions. Some behaviour that increases personal outcome and does not have necessarily tough consequences are permitted or even logically encouraged by the Utilitarian Approach, e.g. occasional stealing. Nonetheless, would it be without any moral or ethical consequences? It has been argued that it wouldn't.

Finally, the Freedom or Capability Approach is based on the concepts of functioning and capabilities. While the former is expressed by the actual situation, that is to say: "what one is and what one does", for capabilities is intended a possible or alternative situation, that is "what one can potentially be and what he/she can potentially do"¹⁶. It is under the concept of "capabilities" that freedom is therefore expressed. Indeed, an individual is to be considered truly free when he or she is able to choose among alternative situations, actually and potentially. Amartya Sen and Martha Nussbaum are the major exponents of this approach, with the distinction that, while the latter provides a universal list of human capabilities, therefore falling into the same logical trap as the Basic Need Approach; the former places the objectivity of the theory back into the thinking process. He argues that the elaboration of those capabilities, which demands for public reasoning and open debates, gives to those capabilities an objective nature. It is so recognised how relevant public critiques are, especially in terms of relative evaluation, namely when there is a contention between two positions which are both evaluated positively. This approach has, not surprisingly, philosophical origins (rather than economic) and it is heavily based on the conception of *social justice*. Under this perspective, human development is therefore a very wide and powerful concept, and, at the same time, its identification is the major limit of this approach. In fact, it has been criticized for being too abstract, and the approach has been questioned for not providing a reasonable tool to measure it - that excludes any possible comparison. It is possible to allocate the UN-Human Development Index in this inquiry for a proper measure of human development. Even though it is consistently based on the freedom perspective, seen as "characterising the current development paradigm" (Haq, 1995), it still displays some features that express both the utilitarian and the basic need approaches. In this regard, the rationale behind the UN HDI defend the idea that *basic needs* can be defined in an objective and universal way, and that an objective measure of human development is therefore possible, however restricted (or limited). The UN - HDI project is thence presented as the most prominent attempt to provide that measure.

¹⁶ Hardeman, Dijkstra. 2014.

As it has been said previously in the chapter, the HDI is a composite index. It indeed expresses the three different aspects of human development indicated in the First Report ¹⁷ definition, namely (1) a long and healthy life; (2) knowledge; (3) a decent standard of living. These aspects are represented by the HDI dimensions. However, in order to be calculated, each of the three dimensions is appraised with a specific indicator, respectively (1) life expectancy at birth, (2) mean years of schooling for adults and expected years of schooling for children, (3) the GNI per capita. Therefore, the HDI is the geometric mean of one normalised index for each of the three dimensions, i.e. Life Expectancy Index, Education Index, and the GNI Index.

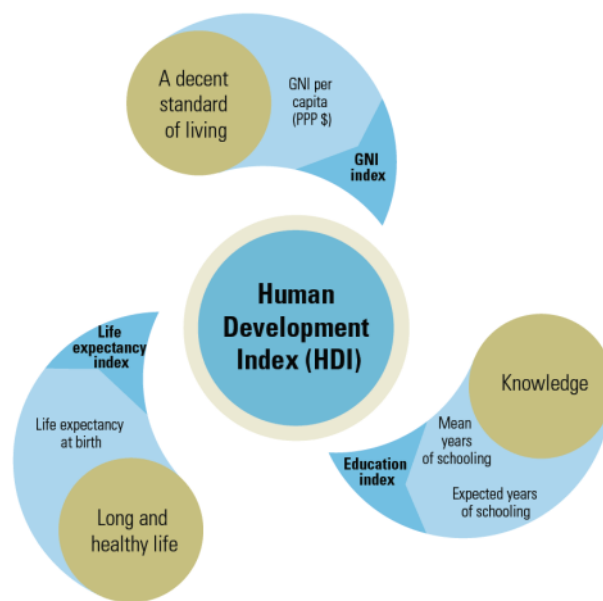


Figure 2. Source: *bmrat.org*

A remarkable breakthrough of the Human Development Index is that it allows national policy evaluation when it is compared. It can be used effectively, for example, to show substantial differences in human development between two countries with nearly the same level of Gross National Income (GNI) per capita. As a matter of fact, when two countries are compared, the country having the greatest GNI doesn't necessarily have the greatest HDI. This to underline that, even though the HDI elaboration takes into consideration GNI values, there are also other factors in the equation that determine countries' position in an HDI comparison. If Italy and the United Arab Emirates are considered, for instance, it is possible to notice that in 2017, even though the latter has a GNI per capita greater than the former, Italy scored a better HDI value

¹⁷ Page 8: “Human development is a process of enlarging people’s choices. The most critical of these wide-ranging choices are to live a long and healthy life, to be educated and to have access to resources needed for a decent standard of living.”

than the United Arab Emirates,¹⁸ specifically in the life expectancy index and the education index. Therefore, despite the fact that the United Arab Emirates overcomes Italy when the income index is taken into consideration, the overall Italian HDI score is slightly greater than that of the United Arab Emirates (respectively 0.88 and 0.86). The example shows how the HDI can thus be used to question national policies and government's priorities, emphasizing again how neither income nor GDP constitute a proper measure of a country's quality of life.

Despite its innovative perspective, it must be noted that the Human Development Index is far from perfect. Its composition itself is an oversimplification of that concept of development described above. Key elements of the concept are missing, for example, it does not include human rights, sustainability, empowerment, freedom, and most importantly, it ignores inequality. This because it only shows national averages, and therefore it is unable to provide an insight on regional disparities. It is a synthetic indicator and as such it fails to cover the ambitious and holistic meaning of *human development* that has been described. Moreover, some specific critiques have been reported on the wealth-income component, criticised for being insufficient and partial. But if the definition of (human) development we share is the one that comprehends concepts such as "freedom", "oppression", "satisfaction", "decent living standards" and even "human rights respect", we need to compromise and accept that these variables are hard to be measured, due to the fact that their very definition can have different interpretations. These inherently subjective interpretations largely depend on culture, tradition and history of a specific country, and still they can depend on the very individual, therefore it is quite impossible to have an "universal" interpretation of "freedom", just to make an example. Nonetheless, the Human Development Index is, in spite of its limitations, of a great significance: it is the very first concrete attempt to focus on the individual's well-being.

1.5 The European Regional Human Development Index

The already mentioned report, published by the European Commission in 2014, is the outcome of a project called "Regional Human Development" planned by the Directorate-General Regional and Urban Policy (DG REGIO). The aim of the report was to modify the HDI in light of regional differences among different European countries, as to develop a new index in order to measure

¹⁸ United Nation Development Program website.

human development in Europe. The need for a new indicator was raised because of some limitation in the scope of the UN-Human Development Index. The latter has been considered a proper index of comparison especially when *developing countries* are taken into account, rather than already *developed* ones. Moreover, it does not perfectly fit a regional level of analysis, especially when European specificities are taken into consideration. Thus, the purpose of the report was to adjust the HDI and make it relevant to a European analysis, shifting the subject of inquiry from countries towards regions, and to make it suitable for cross-sectional comparisons, as well as for comparisons over time.¹⁹ To this aim, the European Regional Human Development Index (EU-RHDI) was developed. It maintained the three-partite structure of the UN-HDI, to be specific Health, Knowledge and Income, but doubled the variables.

The variables chosen for the index are two for each dimension: particularly with regard to Health, *infant mortality* and *healthy life expectancy* are the relevant parameters. The former defined as “the ratio of the total amount of deaths of children under 1 year of age during the year, to the number of life births in that year”; the latter as “the number of years a person is expected to live in good perceived health. Indicators combine mortality data with data on self-perceived health”. Specifically for the dimension of Knowledge, instead, the variables chosen are *NEET* (not in education, employment or training) and *general tertiary education*, respectively “the percentage of the population aged 18-24 that is not employed and not involved in further education and training” and “persons aged 25-64 with tertiary education attainment”. Finally, with respect to Income dimension, the two variables are *net adjusted disposable household income*, and *employment*. The former is defined as “a region’s net disposable income weighted the region’s country gross adjusted disposable income, divided by the region’s country net disposable income (per capita)”; the latter as “the share of employed persons of 15 years or older as a share of the population of 15 or older”.²⁰

¹⁹ Hardeman, Dijkstra. 2014.

²⁰ Eurostat

Variable	Description	Dimension	Direction
Infant mortality	The ratio of the total number of deaths of children under one year of age during the year to the number of live births in that year. The value is expressed per 1000 live births.	health	negative
Healthy life expectancy	The number of years a person is expected to live in good perceived health. Indicator combines mortality data with data on self-perceived health.	health	positive
NEET	The percentage of the population aged 18-24 that is not employed and not involved in further education or training.	knowledge	negative
General Tertiary Education	Persons aged 25-64 with tertiary education attainment (as the percentage of people of the given age class)	knowledge	positive
Net adjusted disposable household income	A region's net disposable income weighted the region's country gross adjusted disposable income divided by the region's country net disposable income (per capita)	income	positive
Employment	The share of employed persons of 15 year or older as a share of the population of 15 year or older	income	positive

Table 1. European Regional Human Development Index's variable. Source: European Human Development Index – European Commission report (2014)²¹

It is then explained, in the report, how to calculate the EU-RHDI. The procedure can be summarized into five steps:

- Step 1. It starts with the identification of the 6 variables for each element of analysis.
- Step 2. Then, it asks to calculate the min/max values in order to normalise the variables into indicators from 0 to 1.
- Step 3. At this point, it is possible to transform all the variables using a MIN/MAX approach. On the one hand, for the variables which have a positive direction, meaning that they positively contribute to the growth of human development, the following formula is used:

²¹ Hardeman, Dijkstra. 2014.

$$x_t = \frac{x_i - \text{Min}(x_n)}{\text{Max}(x_n) - \text{Min}(x_n)}$$

The variables that are considered to be positively associated with Human Development are: “healthy life expectancy”; “general tertiary education”; “net adjusted disposable household income”; “employment”.

On the other hand, for variables that negatively affects human development, namely “infant mortality” and “NEET”, another formula is used:

$$x_t = \frac{x_i - \text{Max}(x_n)}{\text{Min}(x_n) - \text{Max}(x_n)}$$

- Step 4. Once the indicators are evaluated, it is now possible to calculate the singular dimensions by using the arithmetic mean, that is the sum of the two specific indicators for the dimension under examination, divided by 2.

$$D = \frac{\sum x_{t1}, x_{t2}}{2}$$

- Step 5. By using the geometric mean, it is possible eventually to calculate the overall index, equals to the cube root of the three dimensions multiplied.

$$EU - RHDI = \sqrt[3]{D_{health} \cdot D_{knowledge} \cdot D_{income}} \quad 22$$

N.B. all weights for each variable have been assigned equally, therefore each variable is equally important in the calculation of the Index.

²² Hardeman, Dijkstra. 2014.

2. *Convergence in Europe*

2.1 Historical framework: Introduction to the study

In 1992, the “treaty on European Union” was signed in the city of Maastricht, city from which the name “Maastricht Treaty” stems. It happened to be the result of two distinct intergovernmental conferences, called by the European Council in 1989, characterised by the aim of creating a new monetary and political union, i.e. the European Union.

In fact, the treaty established a single European currency, and gave to the European Union the so-called three pillars structure: the three European Communities, namely the European Economic Community, the European Coal and Steel Community, and the European Atomic Energy Community, representing the first pillar; the Common Foreign and Security Policy (CFSP) as the second one (Title V); the third pillar consisting of the Justice and Home Affairs (Title VI).²³ Therefore, the European Council, the European Communities, and the two intergovernmental policies, were integrated in the European Union, as it is expressed in Article A of the Treaty on European Union (old):

“By this Treaty, the High Contracting Parties establish among themselves a European Union, hereinafter called “the Union”. This Treaty marks a new stage in the process of creating an ever closer union among the peoples of Europe, in which decisions are taken as closely as possible to the citizen.

The Union shall be founded on the European Communities, supplemented by the policies and forms of cooperation established by this Treaty. Its task shall be to organize, in a manner demonstrating consistency and solidarity, relations between the Member States and between their peoples.”²⁴

Besides the establishment of a new structure, later on modified by the subsequent treaties, the Treaty of Maastricht is worthy of attention for the fact that, as already pointed out, it simultaneously created a new monetary union with a single currency (with the exclusion of two countries which refused to accept this level of supranationalism) and instituted the principle of differential integration: by establishing the “convergence criteria”, (also called the “Maastricht

²³ Schütze. 2015.

²⁴ Schütze. 2015. pp. 1-185

criteria”) it stated that only those countries which respect them, will be able to participate in the European project. These criteria, now expressed in ART. 140 of the Treaty on the Functioning of the European Union (see below), were meant to achieve economic stability, and to provide the Union with a common currency, the euro. Even more importantly, it has been recognised that sustainable economic convergence (as it has been defined by the European central Bank) is a significant condition for the well-functioning of the Economic and Monetary Union, Member States’ compliance with the Maastricht criteria is, therefore, their primary responsibility.²⁵ Hence, the establishment of a supranational monetary policy was linked to Member States’ economic convergence.

**Treaty on the Functioning of the European Union, part three: Union Policies
and Internal Actions, title VIII, Chapter 5, Article 140:**

“ [...] The reports shall also examine the achievement of a high degree of sustainable convergence by reference to the fulfilment by each Member State of the following criteria:

- the achievement of a high degree of price stability; this will be apparent from a rate of inflation which is close to that of, at most, the three best performing Member States in terms of price stability,*
- the sustainability of the government financial position; this will be apparent from having achieved a government budgetary position without a deficit that is excessive as determined in accordance with Article 126(6),*
- the observance of the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System, for at least two years, without devaluing against the euro,*
- the durability of convergence achieved by the Member State with a derogation and of its participation in the exchange-rate mechanism being reflected in the long-term interest-rate levels.”²⁶*

²⁵ Diaz del Hoyo, Dorrucchi, Heinz, Muzikarova. 2017.

²⁶ "EU Law - EUR-Lex". 2019. *Eur-Lex.Europa.Eu.*

To summarise, the Maastricht criteria concern: 1. The inflation rate stability; 2. The Government budget deficit, intended as the ratio between the deficit of a given country and its GDP, and the Government debt-to-GDP ratio; 3. The exchange rate stability; 4. Long-term interest rates.²⁷

The central idea was that the internal market, together with the introduction of a single currency, would stimulate the process of convergence, by applying different interest rates, and by encouraging capital flows towards the countries showing the lower level of growth. Furthermore, the European Union cohesion policies were added to support this project of harmonisation.

Consequently, it is possible to affirm that the Treaty of Maastricht voiced the European Union rationale of convergence, even though it didn't fully provide the Union with sufficiently converging (national) objectives, institutions and, more importantly, preferences.²⁸ This was made clear in the 2010 sovereign crisis debt, that raised the issue of how national economies could be able to grow notwithstanding the constraints imposed by the monetary union. The Maastricht Treaty recognised the necessity of some economic-policy coordination among Member States, but was not able to provide the monetary union with specific requirements. Several attempts were made with the aim at consolidating the economic coordination, among which the Stability and Growth Pact (SGP), and the Lisbon Strategy, recently replaced by the Europe 2020 Strategy. The European commitment, however, largely depends on Member States' policies, lacking strong enforcement mechanisms.

On this matter, perhaps the article that express the most this European multidimensional aim of convergence is article 174 of the Treaty on the functioning of the European Union (ex. Article 158 TEC) that calls for an "harmonious development" and for the obligation to reduce regional disparities:

"In order to promote its overall harmonious development, the Union shall develop and pursue its actions leading to the strengthening of its economic, social and territorial cohesion.

*In particular, the Union shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions."*²⁹

²⁷ Blanchard, 2015. Page 547

²⁸ Bongardt. and Torres. 2013. pages 72-77

²⁹"EU Law - EUR-Lex". 2019. *Eur-Lex.Europa.Eu.*

The purpose of this final project is therefore to provide an analysis on the patterns of convergence between European countries, and within the same countries, by providing a regional evaluation. Indeed, convergence should be evaluated exceeding the borders of singular states and its analysis should not be limited to the measure of the GDP only. Therefore, the main question raised by this inquiry is whether there has been a trend of convergence or rather one of divergence among the countries that have adopted the euro, despite the European policies of social cohesion expressed in the European objectives.

In order to do so, the European Regional Human Development Index, explained in chapter 1, paragraph 1.5, will be used to calculate the changes in development in the last 17 years (from 2000 to 2017) of twelve European countries, namely those that have signed the Treaty of Maastricht. The idea is to monitor European *development* as intended by the Human Development Approach, focussing on health, knowledge, and income.

2.2 Convergence and the Solow Model

At this point, it is necessary to spend few words on the concept of convergence, and to what extent it is expected to happen in Europe. The term “convergence” is used for describing the trend of at least two things heading towards the same end or effect. In Economics, the term “convergence” is used when dealing with economic growth discourses. In general, it refers to the situation in which the GDP per capita of different countries tend towards the same level, the level which indicates the equilibrium of the economic process of growth. It implies that the growth rates of countries with lower levels of GDP will be greater than those of the richer countries, and that, after a certain time, the level of GDP of both typology of countries will be, eventually, the same. This explains why this process is known as “catching up” growth. Logically, it is possible to speak of convergence when the GDP variation of the countries taken into consideration will decrease over time, meaning that the levels of GDP are increasingly more similar.

In this regard, it is necessary to refer to the Solow model, which illustrates the neoclassical approach to the dynamics of growth and convergence.³⁰ The model is so described. The aggregate production function expresses the output obtained for a given capital, intended as physical resources and machinery, and for a given labour. Both of them are subject to the law of diminishing returns, this meaning that the relation between capital - or labour - and output is

³⁰ The article on which Solow has presented his model is “A contribution to the Theory of Economic Growth”, *Quarterly Journal of Economics*, 1956, pages 65-94

positive, but also that for each additional unit of capital or labour, the additional outcome produced will diminish, i.e. there is a decrease in the marginal product.³¹

We will now focus solely on capital. It is demonstrated that the amount of output depends on the amount of capital employed. The relation between the product obtained (on the vertical axis) and the capital employed (on the horizontal axis) is represented by an upward sloping curve. Due to diminishing returns to capital, increases in capital will lead to smaller and smaller increases in the product obtained. However, it is possible to extend the concept of “capital” to include also *human* capital, rather than *physical* capital only. Both human and physical capital can be accumulated, respectively from Education and Investment.

Concerning growth, it is possible to think of it in terms of capital accumulation and technological progress. The model states that capital accumulation is unable to sustain an ever-increasing growth *per se*. Technological innovation is needed in order to have a sustained growth in output. However, capital accumulation depends on production, that drives savings and investments. Production, in turns, depends on how much capital exists. The Solow model predicts that this bi-univocal relation ensures economic convergence to a steady-state level of capital, in the long run. When this constant value of production is reached, it is also reached a steady state level of output. Therefore, even if an increase in investments will increase growth at first, the economy will eventually meet a new steady-state level of capital,³² where growth will be equal zero.

Regarding technological innovation instead, it can be simplified in terms of units of labour. In this sense, production can be seen as the relation between capital per effective workers and output. In the steady-state level of output, capital and output are expected to converge in the long run. As before with investments, an increase in savings will increase growth, up to a new steady-state level. Regardless of how savings and investments are distributed, in the long run the growth rate of output will be always equal to zero.³³

³¹ Blanchard, 2000. Chapter 26, pages 673-689

³² Blanchard, 2000. Chapter 27, pages 691-711

³³ Blanchard, 2000. Chapter 28, pages 713-730

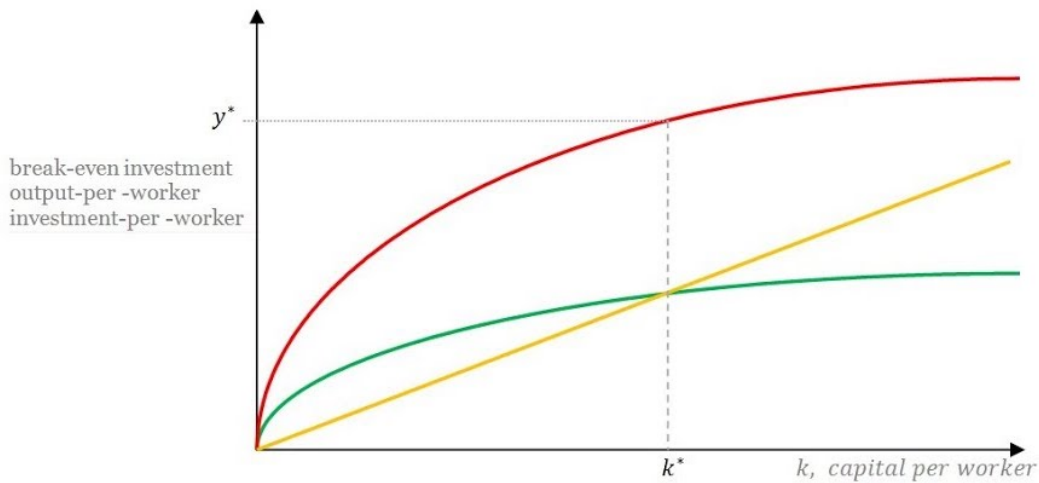


Figure 1: the Solow Model ³⁴

Convergence is then found in this regard, namely the Solow model predicts that poorer countries should grow faster than wealthier countries, and they eventually will reach the same equilibrium (that explains why it is used the term “catching-up growth”). ³⁵

Despite its age, this model is still a pivotal subject of theoretical and empirical relevance, even though a wide debate does exist on the matter of convergence. Indeed, the model explains a theoretical pattern, which does not mimic the real world. Convergence, therefore, is not an automatic process. Additionally, it must be underlined that the Solow model refers to economic growth, which is not development. Indeed, it is possible to have economic growth without development, but not the opposite.

The Solow model prefers the term “conditional convergence” to describe this phenomenon. It, in fact, recognises other exogenous variables that actively contribute to the well-being of a country, other than the production function, and so restricts the scope of its model only on those countries that present similar institutions. Only under this condition, i.e. assuming that the countries under analysis have similar institutions, the Solow model can be applied: poorer countries should grow faster than the wealthier ones, and all countries (again with a similar institutional framework) should converge to similar levels of output. ³⁶ Therefore, it is possible to assume that the Solow model applies to the European case, where member states not only present similar domestic institutions, but they even share the European ones, along with the same values and goals, at least theoretically.

³⁴ <https://sites.google.com/site/economicurtis/intermediatemacro/solow>

³⁵ Cowen, and Tabarrok. 2007.

³⁶ Cowen, Tabarrok. 2007.

The European Central Bank in his recent report (December 2018) titled “Real Convergence in the Euro Area: a long-term perspective” addressed this conceptual perspective of conditional convergence by proposing the concept of “*institutional quality*”. Intended as “institutions and governance standards that facilitate growth”³⁷, *Institutional quality* is considered as a necessary condition for sustainable economic convergence; a priority for each Member States, which are not required to follow the same institutional model, but rather to set up their institutions and governance under a convergence rationale.

2.3 Related works: an overview

There is an open and wide debate about convergence in general and about European sustainable convergence in particular which is important to introduce in this chapter. Durlauf’s 1996 collection of papers on the matter³⁸ can be taken as a transparent explanatory work on the longevity of this critical debate. After more than twenty years, there is still no academic agreement on whether there has been, since the Treaty of Maastricht, any convergence in European countries or not. Nonetheless, in 2018, 54.468,4 millions of euro were spent by the European Union for “economic, social and territorial cohesion”,³⁹ that is around one third of the European Total expenditure, meaning that, even if studies are critical over the results of those investments, still European convergence represents one of the major objectives of the union. Generally speaking, cohesion funds are allocated in countries whose GNI is 90% below the EU average.

Noteworthy are the conclusions of Pellegrini et. Al. (2012)⁴⁰ whose study focuses on European Regional policy effects on economic growth. The study used a regression discontinuity design in order to analyse European regional economic growth, and to determine EU Regional Policy funds - also known as “structural” and “cohesion” funds - effects. The focus was on the so-called “Objective 1” regions, identified as those regions whose GDP per capita, measured in purchasing power standards, is less than 75% of the European average (measured in purchasing power standards). It is a common denomination to indicate those “*last favoured regions*” named in

³⁷ Diaz del Hoyo, Dorrucci, Heinz, and Muzikarova. 2017.

³⁸ Durlauf, 1996. Introduction.

³⁹“EU Expenditure and Revenue 2014-2020”. 2019. *European Commission - European Commission*.

⁴⁰ Pellegrini, Terribile, Tarola, Muccigrosso, and Busillo. 2012.

article 174 (TFEU) above cited. They found out that EU Regional policies contribute consistently to the reduction of disparities of the less developed regions, meaning that their “backwardness” is indeed reduced. But this positive outcome cannot be extended to the overall European territory, where the levels of development of various regions are only slightly converging. Moreover, it is important to notice that Pellegrini et Al’s analysis concern regions at NUTS 2 level, the level of analysis proposed also in this final project.

The 2016 NUTS classification, i.e. “the nomenclature of territorial units for statistics”, was approved in 2018 and it proposes three different levels of analysis indeed. In the first level, major socio-economic regions are found, for a total of 104 regions. The second one, NUTS 2, counts 281 regions which are those nationally proposed for the application of regional policies. Finally, at NUTS 3 level, there is a total of 1348 small regions subdivided for specific purposes.⁴¹

A second interesting study is the one proposed by S. Tilford in 2017 that counterbalances the *catching-up effect*, on which the convergence theory is based, with the *agglomeration effect*, described as the “tendency of wealthier areas to attract capital and skills”.⁴²

He supported the thesis that European labour mobility has encouraged the movement of skilled workers and, therefore, he presented evidence of capital concentration in the core areas, especially in Germany, Belgium, the Netherlands, Luxembourg, Austria and the Nordics. This phenomenon increases the wellbeing of skilled individuals that move from the least favoured areas towards those more prosperous, but not the wellbeing of regions, undeniably increasing the disparities in levels of human development.⁴³ It then creates a vicious cycle according to which efficiently operating regions attract more workers and capital, increasing their development conditions, growing faster than the poorer regions. Consequently, it has been argued that a logic of divergence, rather than convergence, is supported by both the European single market and by the European labour mobility. Although he reported some evidence of a convergence trend related to the new coming Member States, in Central and Eastern Europe (CEECs),⁴⁴ he asserted that European Structural Funds are too limited and reduced to contrast what has been defined as the “agglomeration effect”, in other words insufficient to reach the alleged purpose of convergence.

⁴¹“Background - Eurostat”. 2019. *Ec.Europa.Eu*.

⁴² Tilford, 2017.

⁴³ Tilford, 2017.

⁴⁴ Acronym used by the Organization for Economic Co-operation and development (OECD).

Interestingly, these conclusions are in disagreement with the conclusions previously reported (Pellegrini's et al. work).

A third study worthy of attention is the one proposed by Nina Schönfelder in collaboration with Helmut Wagner (2018), questioning whether there is institutional convergence in Europe or not⁴⁵. Few words have been already spent on the European commission's concept of "*institutional quality*", recognised as a necessary condition for European economic convergence. And this concept is in line with the "conditional convergence" theory, above expressed, that predicts convergence only for those countries that share similar institutional framework. Schönfelder and Wagner's study, then, is appropriate in this regard, studying European institutional development during the integration process, from 1996 - four years after the Maastricht Treaty has been signed - to 2012. They applied both statistical concepts of sigma and beta convergence.

The term "sigma convergence" is commonly used to describe the statistical analysis of GDP standard deviation, that is the decrease in income disparities among the countries (or regions) of the sample in the time period of analysis. On the other hand, for "beta convergence" it is intended instead the statistical study of the catching-up effect in countries that display lower income levels; this convergence would imply that relatively poor countries show greater percentage changes than those relatively rich.

Schönfelder's conclusions show an unconditional institutional beta convergence, therefore evidence of a catching-up effect, mostly driven by candidate countries, acceding members states and European aspirants. This should not come as a surprise, due to their need to comply with the Maastricht Treaty in order to be members of the Union. Moreover, evidence shows an overall convergence regarding business regulation and product market regulation, but not in terms of governance. As a matter of fact, the study reported actually a beta divergence in institutional development levels between euro-area Member States. Indeed, the "old" Member states, namely those that have adopted the euro, show a divergent trend in terms of institutional development, especially when considering the institutional performances of Italy, Portugal and most of all, Greece. These impressive conclusions not only interrogate the EU integration process, but also the actual sustainability of the European economic growth.

⁴⁵ Schönfelder and Wagner, 2018.

The fourth study that is presented in this chapter is the one published in 2018 by the European Central Bank titled “Real convergence in the Euro Area: a long term perspective” that actively contribute to the debate on whether countries that have adopted the Euro are converging or not.⁴⁶ First of all, the concept of “Real Convergence” is here defined as “a long-term process that brings about a lasting increase in real GDP per capita in lower income countries towards the level shown by higher income countries”. Then, this concept has been related to the broader one of “sustainable economic convergence” that not only requires compliance with the Maastricht criteria in order to be a member of the monetary union, but also it requires the above mentioned “*institutional quality*”, namely, that members states are required to facilitate growth with appropriate institutions (and governance). In order to briefly summarise the conclusions of the study, it is possible to subdivide them under three different regards. First of all, with reference to sustainable economic convergence, evidence shows persistent cross-country income differences from 1999 to 2016. Indeed, no pattern of convergence is observed. The reasons are traced back to the fact that some euro-area countries did not meet economic expectation since the introduction of the single currency. Also, for Central and Eastern countries, it seems that the introduction to a new market economy, and the participation of a global value chain, has had a greater impact than the introduction of the single currency *per se*. Similar negative observations are also reported with reference to the Maastricht convergence, underlining the fact that convergence is not an automatic process, and that some countries did fail in complying with fiscal criteria, expressing key vulnerabilities of the system especially during the 2007/8 financial crisis. Finally, with regard to “institutional quality”, some positive outcomes are recognised, even though the divergent forces in the post-crisis period still counterbalance the Maastricht purpose of convergence. Despite the financial crisis that crucially affected the Union, the overall conclusion - including all three regards - illustrated evidence of income convergence between the European countries that firstly adopted the euro. The study asserts that weak performances are not to be related to the introduction of a single currency, but rather to long-term exogenous factors, structural in nature, upon which sustainable economic convergence depends on. This statement is also supported by another study, published in 2018 by ECOFIN⁴⁷, that confirm “there is no indication that euro area membership has had a negative impact on convergence”. Whilst the European Central Bank’s document so recognises Member states’ responsibility on convergence matter, it also

⁴⁶ Diaz del Hoyo, Dorrucchi, Heinz, and Muzikarova. 2017.

⁴⁷ Centre for European Policy Studies. 2018. Outline of contribution for informal ECOFIN.

states that the European Union itself should “support efforts made at national level, introducing rules, regulations and surveillance procedures”.

In this regard, the Five Presidents’ Report ⁴⁸ published three years before (2015) deserves attention. It imputes the failure of the 2011 Euro Plus Pact ⁴⁹ due to its non-binding nature, and asks for concrete measures such as (1) strengthening the economic policy coordination via the European Semester - which provides countries with specific recommendations – (2) strengthening of the Macroeconomic Imbalance Procedure, and (3) supports the creation of a new system of surveillance in the euro-area via specialised authorities on competitiveness. Moreover, the report demands for an economic convergence backed by legally binding agreed standards.

Lastly, the above mentioned ECOFIN contribution deserves attention. It confirms both the evidence reporting convergence in terms of income among new CEECs ⁵⁰ (as previously stated by Tilford), and the evidence of a divergent trend within the members of the Euro Area. More specifically, the study states that, since the start of the 2008 financial crisis, the North has incrementally diverged from the South, while newcomers caught up, especially those joining the Euro Area. Therefore, the reasons for this phenomenon of divergence must be traced back to something different than the adoption of the Euro, as suggested by the fact that new Member States, that introduced the Euro afterwards, showed a trend of convergence. Different indicators have been used to reach such conclusions. For instance, GDP (per capita measured in purchasing power standard), consumption, employment, and real wages. The final interesting observation made in the paper is that the phenomenon of catching-up for lower income countries relies on foreign investments (FDI) and imported capital, in line with the Solow model. However, it is also argued that in the long-term, or after some level of growth is met, this process will become insufficient. It is suggested that domestic innovation is required instead, in order to provide lower income Member States with those necessary instruments for an appropriate sustainable (and comprehensive) economic growth.

In conclusion, it should be noted that the five studies reported above were chosen because of their proximity with the subject of inquiry of this final project. Moreover, they were chosen because they are part of the latest studies on the matter, and therefore allegedly more accurate because of

⁴⁸ Juncker, Tusk, Dijsselbloem, Draghi, and Schulz, 2015.

⁴⁹ Euro Plus Pact on Stronger Economic Policy Coordination for Competitiveness and Convergence.

⁵⁰ Central and Eastern European Countries.

the larger time of analysis. The reasons why they ended up with such different conclusions are to be traced back to the different models used, and the specific assumptions upon which those models are based. In addition to that, even if the subject of inquiry is always European convergence, the focus of the study varies, and the trend is analysed in slightly different ways. While the first work presented above focuses on the effectiveness of cohesion policies, proposing a positive impact, the second one focuses its inquiry on the single market effects on the European territory. The third one interprets the convergence issue in institutional development terms, whilst the one proposed by the European Central Bank tries to reach a more comprehensive perspective. Finally, the fifth one studied the convergence pattern in relation to the Euro Area membership. On the one hand, the ECOFIN paper and the study by Schönfelder and Wagner used different indicators to draw their conclusions. The latter applied three indicators, namely (1) the World Wide Governance Indicator, (2) the one describing product market regulation elaborated by the OECD, and (3) the “Doing Business Distance to Frontier Indicator” proposed by the World Bank; while the former used consumption, employment, investments, real wages, education, and GDP. On the other hand, the other three studies reported made use of GDP only.

This final project, therefore, does not have the presumption to draw universally true conclusions, but to participate in the convergence debate, focusing on the idea of development described by the human development approach. The EU-RHDI will be employed as the main indicator of inquiry.

3. *The Study*

3.1 Sample and time period of analysis

The previous chapters served as an extensive introduction to this part. As already pointed out, convergence in particular and growth in general are difficult to study, especially due to the complexity and vastness of the phenomena. Therefore, it is very unlikely to condense them into a short contribution such as this thesis. It seems necessary to narrow the subject of analysis, and in this case the aim is to assess what happened in the euro area, questioning whether in the last 20 years (for which data are available) those countries that adopted the euro experienced convergence or not.

As a result, this chapter will be divided into two different parts. The first one with the intention of comparing different countries through the years, both in terms of GNI and in terms of HDI. The EU Regional HDI is not required in this case due to the nature of the analysis - which is national rather than regional. Analysis will be carried on two different samples. The first sample includes the twelve countries that first signed the Treaty of Maastricht and that first introduced the Euro as national currency (EA12). Explicitly, they are Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Spain and Portugal.⁵¹ Thereafter, the analysis will be extended over the second sample, which includes those new Member States that entered in 2004 in the Euro Area, for a total of nineteen countries. This means that seven countries have been added to the original twelve, namely Slovenia, Cyprus, Malta, Slovakia, Estonia, Latvia and Lithuania (EA19).⁵²

The second part of the chapter will provide instead a regional analysis, this time using the European Regional Human Development Index. The level of analysis chosen is NUTS 2 level accordingly to the prevalent classification. With the aim of monitoring the trend of regional convergence in terms of human development, the time period of the study run from 2000 to 2018. In this case, the regions under study are those of the EA12 Member States. The results will be then compared with those obtained from an analysis of regional convergence in terms of GDP only. The EU R-HDI scores are obtained following the procedure indicated by the European Commission Report of 2014, as described in sub-chapter 1.5.

⁵¹ "Glossary:Euro Area Enlargements - Statistics Explained". 2019. *Ec.Europa.Eu*.

⁵² "Glossary:Euro Area Enlargements - Statistics Explained". 2019. *Ec.Europa.Eu*.

3.2 Comparing EA12 countries: GNI vs. HDI

Recalling the example made in the sub-chapter 1.4, an analysis is here presented considering the twelve European countries that constitute the euro zone. Hence, in *Figure 3*, national performances of EA12 members in terms of Gross National Income (GNI) per capita, measured in PPP (purchasing power parity), are presented from 1990 to 2018. In *Figure 5*, on the other hand, graphically represents the trend of the same twelve countries in terms of HDI, taking into consideration the same time period.

The following graph is based on data took from the World Bank website, and the Gross National Income is expressed in terms of current international dollars, as it is required by the International Comparison Program of 2011. The GNI is therefore defined as “the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.”⁵³ By introducing purchasing power parity rates, it is therefore assumed that an international dollar has equal purchasing power of a US dollar in the United States.

At first sight, it is apparent an overall increase in the levels of GNI for each country through the years. Luxembourg was not excluded from the graph, but its biased performance should not be taken into consideration for statistical reasons. Interesting is the case of Ireland, that started with one of the worst scores in the 90s and ended up in 2018 with the second best, showing a percentage increase in the last three decades equal to 424%. The national GNI is however victim of some statistical distortion due to, for instance, its high concentration of multinational companies, such as Google, Facebook, PayPal, Microsoft, eBay and Apple, to name a few.

⁵³ World Bank definition.

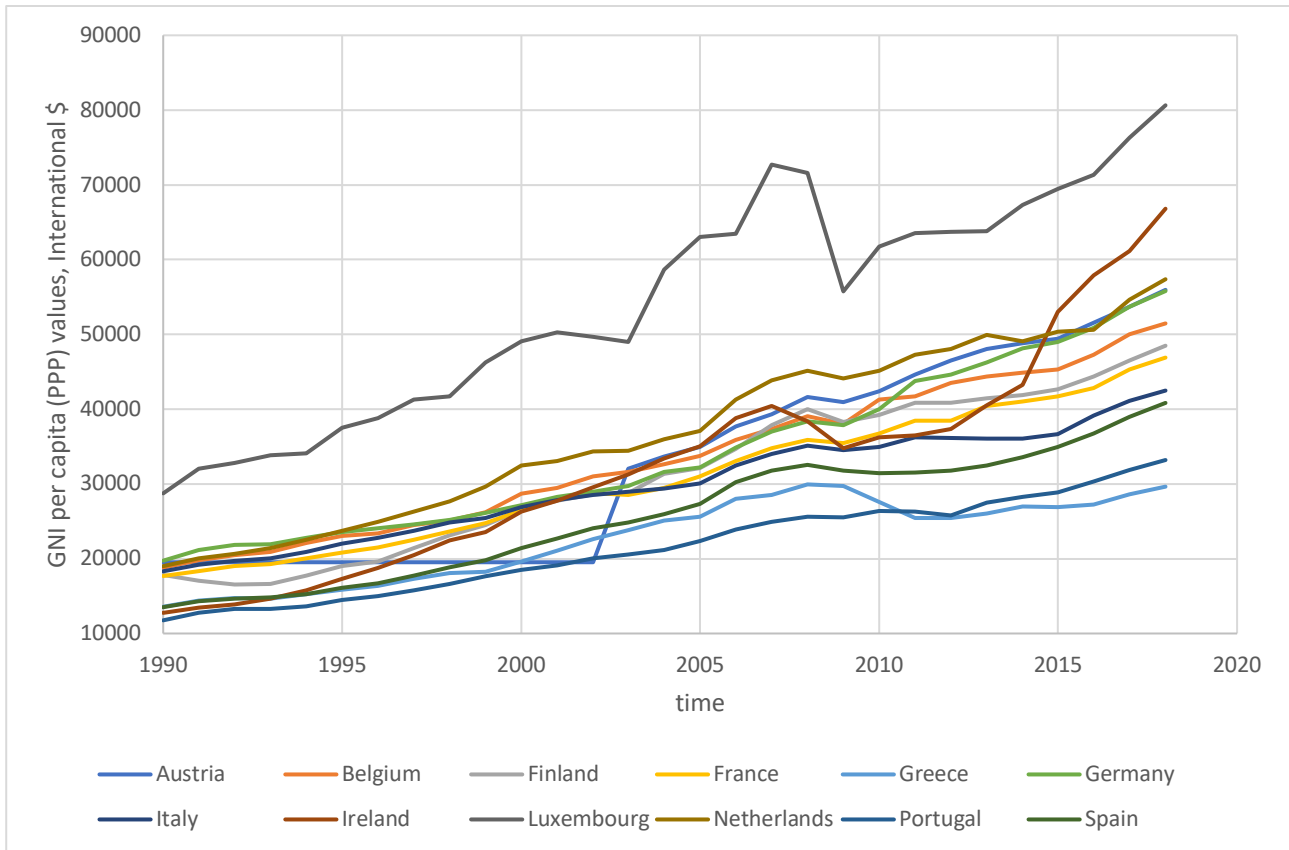


Figure 3.

GNI per capita, 1990-2018; 12 countries. Data source: World Bank, International Comparison Program Database

On the whole graph it is possible to calculate the variance index, which has increased over the years. Indeed, the dispersion of the data in 1990 is lower than that in 2018. This indicates that differences among EA12 countries have increased (when the GNI is considered). But the reason of this seems to be not related to the adoption of the euro, as suggested by the fact that, excluding the case of Austria, no significant changes are reported by the data during the period of introduction of the single currency (January 1, 2002)⁵⁴. In fact, the Austrian GNI level remained constant until 2001, then, it sharply increased, showing a 64% of percentage increase in that year only (from 2001 to 2002). Nonetheless, it remains an exception, and the graph suggests that the adoption of the single currency didn't affected national growth in terms of GNI (measured in PPP).

⁵⁴ "Euro Currency | OANDA". 2019

On the contrary, negative effects of the financial crisis are evident on the levels of the EA12 Member States' GNI. Most of all for Greece, Spain and Italy, that recovered with difficulty and pretty slowly. Moreover, the analysis of the GNI levels of the countries shows clear evidence of the 2010 sovereign debt crisis, that raised European awareness over some more stringent economic challenges stemming from the monetary union.⁵⁵

It is evident that countries recovered and reacted to the crisis in different ways, determining different socio-economic performances thereafter. This event, without any doubts, has repercussions over the general pattern of convergence, which highlights the dependency relationship between economic outcomes and domestic policies. Nonetheless, countries' different responses to the crisis are not a concern of this thesis, that will focus instead on (the lack of) convergence between the EA12 Member States.

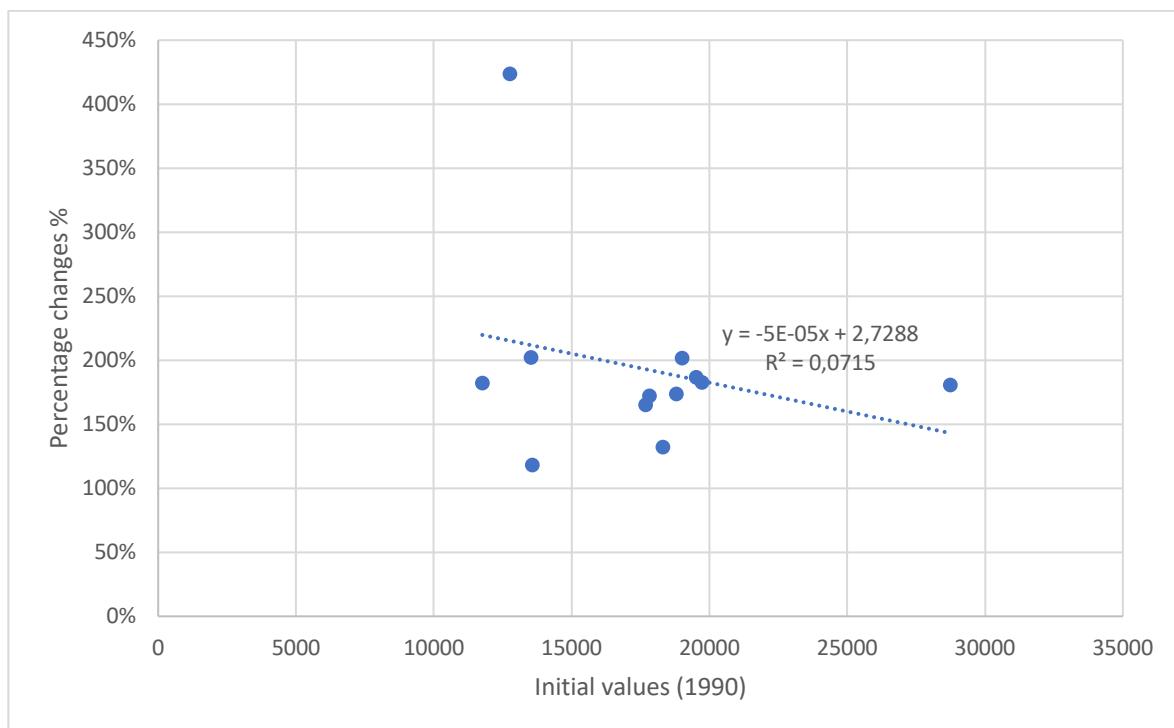


Figure 4.

GNI per capita growth rate, 1990-2018, compared to GNI per capita in 1990; 12 countries. Own elaboration of data. Data source: World Bank, International Comparison Program Database

⁵⁵ Bongardt and Torres. 2013. pages 72-77.

Hence, as shown by *Figure 4*, when the levels of GNI are considered over the last 27 years, there is no cohesion nor convergent inclination among countries that first constituted the Euro zone. This statement is supported by the graph which shows countries' percentage changes in GNI (represented vertical axis) and their initial level of GNI (horizontal axis). Indeed, the regression line represented in the graph is characterized by a very small R squared value, meaning that there is no evidence for a beta convergence. However, the R squared value is expected to be slightly larger, due to the outlier Luxembourg, which seems to heavily influence the trend line, as suggested by *Figure 3*. In addition to that, as already noticed, the increasing statistical variance (from 1990 to 2017) indicates greater disparities in terms of GNI among the EA12 countries, suggesting a trend of sigma divergence rather than one of convergence.

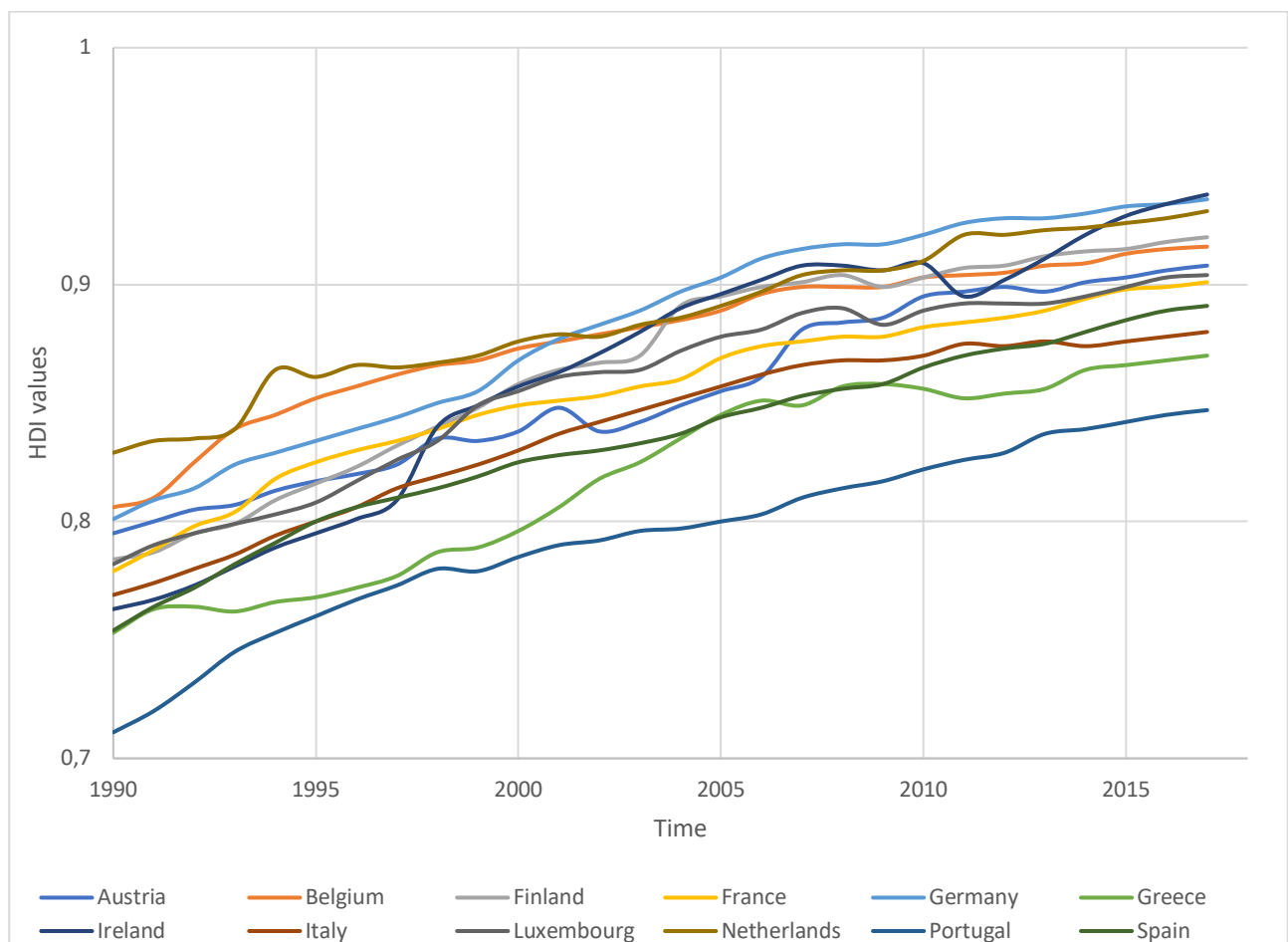


Figure 5.

HDI, 1990-2018; 12 countries. Data source: <http://hdr.undp.org/en/data>⁵⁶

⁵⁶ HDRO calculations based on data from UNDESA (2017a), UNESCO Institute for Statistics (2018), United Nations Statistics Division (2018b), World Bank (2018b), Barro and Lee (2016) and IMF (2018).

Figure 5 offers a different picture. As expected, the general trend hints to a positive growth; the graph shows that all the European countries taken into consideration have improved their performance through the last 27 years. Moreover, the statistical variance has decreased over the period, indicating a sigma convergent pattern. It suggests that in EA12 Member States, the increase in HDI in the last 30 years is higher for the countries lagging behind in 1990. For instance, in the last year considered (2017) the worst has been Portugal scoring 0.85 - actually it is possible to notice how Portugal underperformed other countries every year - but at the same time it showed a percentage change of 19,1% over the period, which is pretty high if compared with those of the other countries. Anyhow, all EA12 countries performed well in terms of HDI, with a difference between the best two and the worst not even equal to 0.1.

The HDI will be at this point analysed by looking at its components.

The Life expectancy Index⁵⁷ displays EA12 countries moving through time quite close, with a very high average between countries of 0.953 over 1 in 2017. Considering their percentage changes, it is possible to observe a trend of beta convergence. Moreover, the decreasing variance suggests a sigma convergence too.

Concerning the Education Index, the general image confirms a convergence pattern, which is indicated by a downward sloping trend line, with a R squared equals to 0.5. Even in this case, the general rule of convergence, i.e. the more developed the country, the lower its percentage change, can be observed, characterised by a diminishing statistical variance. Portugal, for example, shows the highest percentage increase, equal to 42%. Both sigma and beta convergence are therefore proposed.

⁵⁷ The graph that illustrates the life expectancy index can be found at the appendix of this thesis, figure No. 1

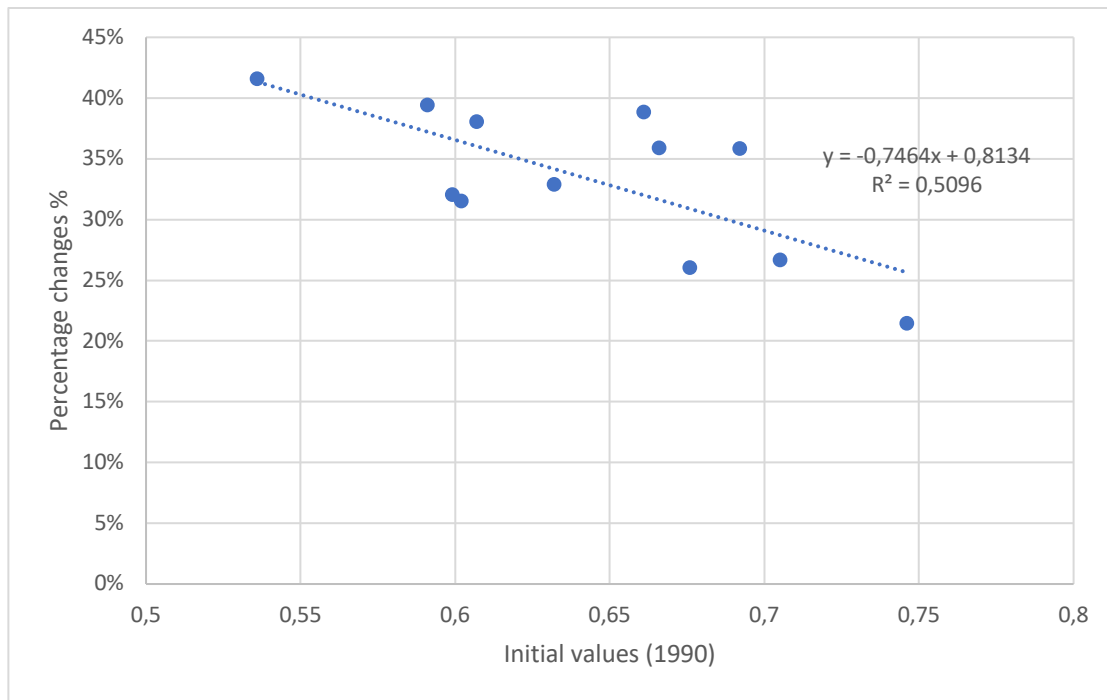


Figure 6.

*Growth rate of Education index, 1990-2018, compared to Education Index in 1990; 12 countries.
Own elaboration of data. Data source: <http://hdr.undp.org/en/data>*

Finally, the graph representing the Income Index⁵⁸ clearly evoke *Figure 3*, showing how each country is following its own characteristic path. Evidence of both sigma and beta convergence can be noticed, even though the R squared value of the regression line is pretty low, affected by the presence of the two outliers (Luxembourg and Ireland). In this regard, it is observed that the higher R squared value among the three indicators is the one presented by the Education Index. Looking at *Figure 7*, which illustrates national changes in HDI, the trend of Ireland deserves attention. In this case, the comparison between the levels of the country in terms of HDI and GNI are coherent. Starting from the bottom in 1990, it ended up in 2017 among the best two in each of the three indicators, therefore showing not only a strong growth in GNI terms, however biased it is, but also that this growth is supported by both an increase in education (second only to Germany) and in life expectancy.

⁵⁸ The graph that illustrates the income index can be found at the appendix of this thesis, figure No. 2

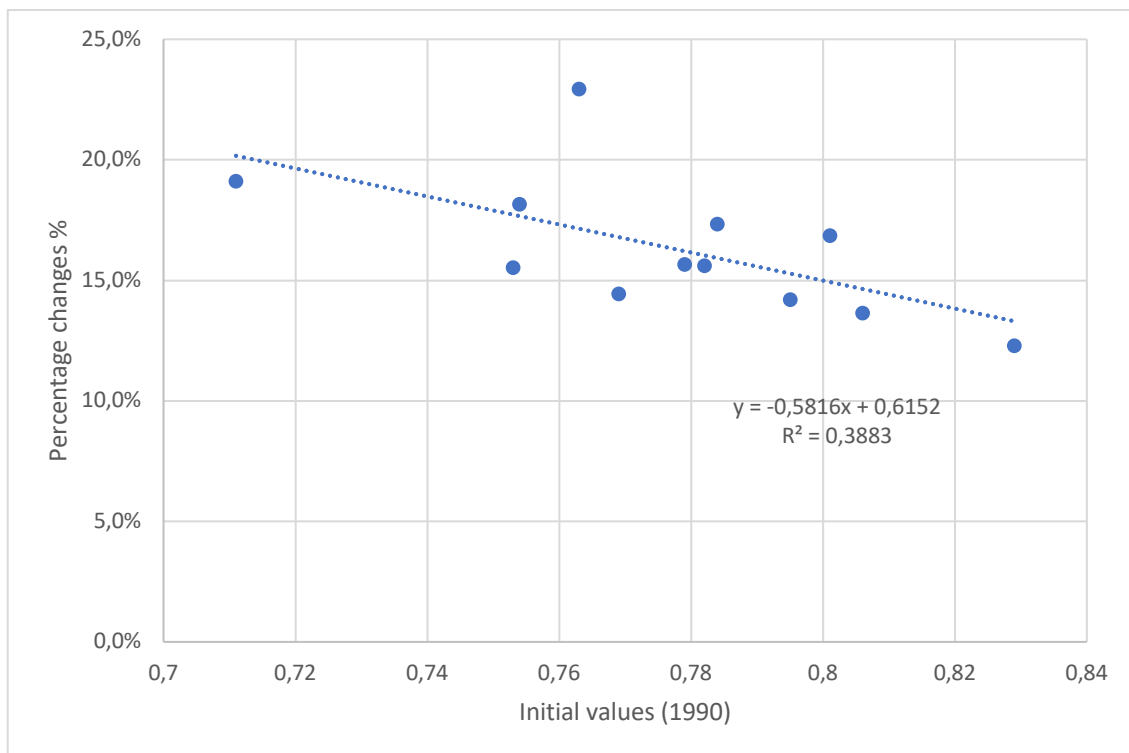


Figure 7.

Growth rate of HDI, 1990-2018, compared to HDI in 1990; 12 countries. Own elaboration of data.

Data source: <http://hdr.undp.org/en/data>

Concerning the Human Development Index values of Greece instead, its growth stopped in 2007, coherently with the GNI graph that has been previously analysed, then slightly recovered after 2010. The *sub-par* performance of Greece in terms of HDI resulted mainly for what concern the Income Index. Indeed, in this regard, it showed through the years a percentage of change amounting to 3%, higher only than Italy's 2%.

The case of Italy too should be briefly analysed. Considering its level of GNI, Italy initially was at the same level of Belgium and the Netherlands (1990), but then its growth has proven to be less sustainable and therefore the distance among the three countries increased over the years. Considering the HDI levels instead, the gap between the three countries was already evident in the 1990s.

On the whole, it is possible to state that national differences related to Human Development Index among the countries analysed here have slightly decreased over the years, suggesting a trend of convergence⁵⁹ in terms of human development. Portugal, for example, is the last country

⁵⁹ Here intended as both sigma and beta convergence.

according to each of the three indicators, but it however shows one of the higher percentage changes, in accordance to the convergence golden rule, and the same holds also for Spain. Nonetheless, there are Ireland, Italy and Greece that seems to be out of this European pattern; the former because of its extensive growth, while in the case of Italy and Greece because of their poor performances in relation to the others' countries. These conclusions are illustrated clearly in *Figure 7*, characterised by percentage changes on the vertical axis and the initial values of HDI in 1990 on the horizontal axis. The downward sloping trend line indicates convergence among the EA12 countries in terms of human development, even though the Irish value is noticeably above ($=0,763$) and Greece and Italy's score below the line ($GR=0,753$; $IT=0,769$).

At this point, it is underlined the link between Income and Education indexes. In fact, it is noticeable that national Life Expectancy Index values are quite homogeneous, indicating that there are not significant discrepancies among EA12 countries for this dimension. Therefore, it is suggested that the main determinants of Human Development Index differences are the Income and Education components. The two indicators are evidently heavily correlated, and changes in one aspect would eventually affect the other. From here, it is possible to draw two relevant conclusions: first, that education and income are the substantial drivers of the phenomenon of convergence concerning human development growth among EA12 countries; second, that the HDI is a more informative measure than the GNI when detecting human development changes.

To summarise, in the previous graphs it has been proposed a novel analysis of the phenomenon of convergence at the national level. On the one hand, it has been observed a slightly sigma-divergent pattern of growth in terms of Gross National Income between the twelve countries under study, indicated by an increasing statistical variance. However, there was no sufficient evidence to assess a pattern of either beta divergence or beta convergence between EA12 countries through years. Furthermore, it has been suggested that this lack of convergence should not be related neither to the adoption of the single currency, nor to the related entry into the single market. On the other hand, by analysing the HDI, it has been suggested a trend of both beta and sigma convergence in terms of human development. Then, the three dimensions have been separately analysed, with particular emphasis to the one regarding education. Each of the indicator coherently showed a trend of convergence.

At this point, it is now expanded the sample to those countries that entered the Euro area from 2004, which are seven, for a total of nineteen countries. The question now is whether the patterns observed both in terms of GNI and HDI hold for the extended sample.

3.3 Comparing EA19 countries: GNI vs HDI

Instead of representing all 19 countries, therefore in order to provide a more efficient graph, *Figure 8* illustrates the seven additional countries which entered in the Euro zone in relation to the mean of the countries that have been analysed so far, underlined by the blue line titled EA12. In the calculation of the mean, Luxembourg has been excluded, again for statistical significance.

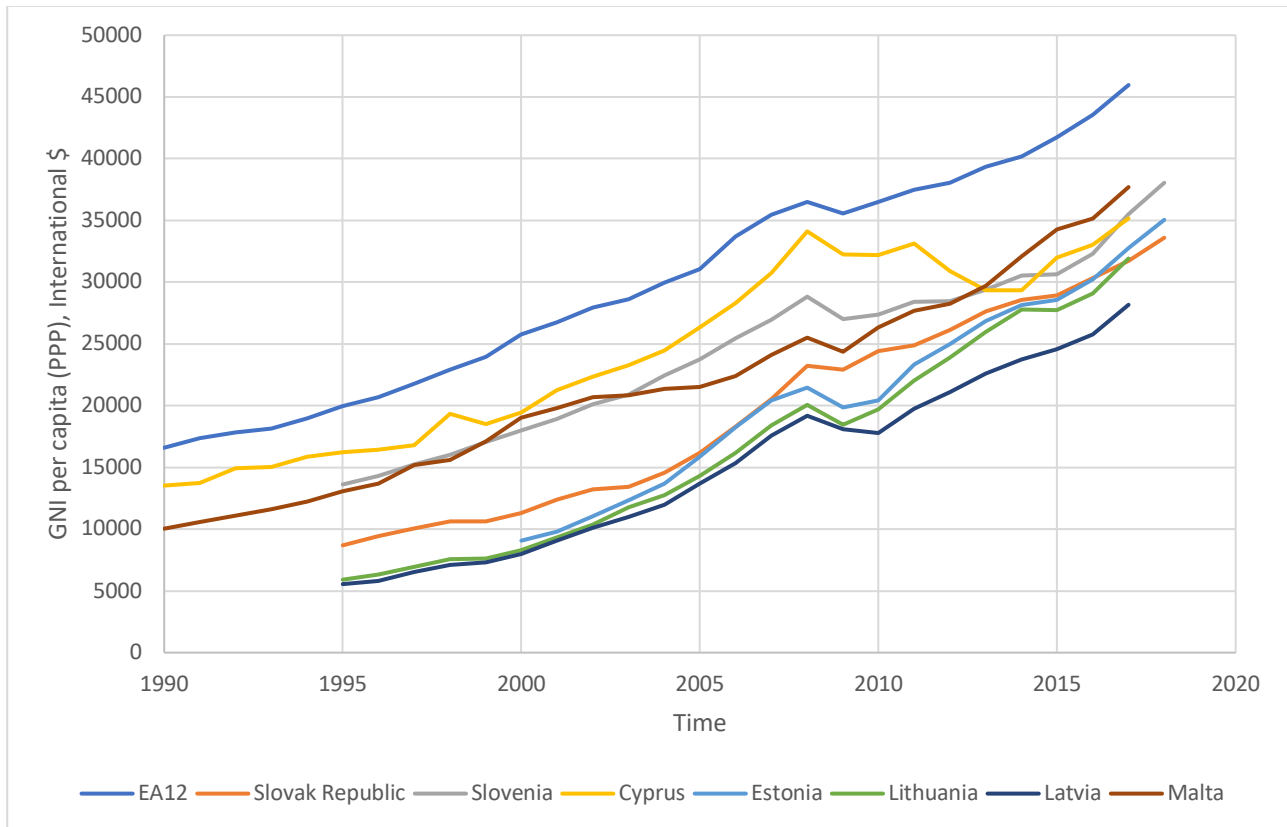


Figure 8.

GNI per capita, 1990-2017; 19 countries. Data source: World Development Indicators. Last updated date: 10/07/2019

First, countries represented in the graph are growing in terms of Gross National income, even though they too evidently suffered the 2008 crisis. Nonetheless, it is also clear that no country that joined the Euro afterwards successfully reached the EA12 mean by 2017. Only Cyprus and Slovenia were closing in to the EA12 average, but then the bubble of the financial crisis exploded and heavily affected them. However, discrepancies in the levels of GNI are decreasing over time, as indicated by a decreasing statistical variance. The data analysis then implies a trend of sigma-convergence among countries of the eurozone.

What is even more evident observing the EA19 members' GNI is the poor performance of Greece and Portugal. Indeed, they have been exceeded by six new members over seven.

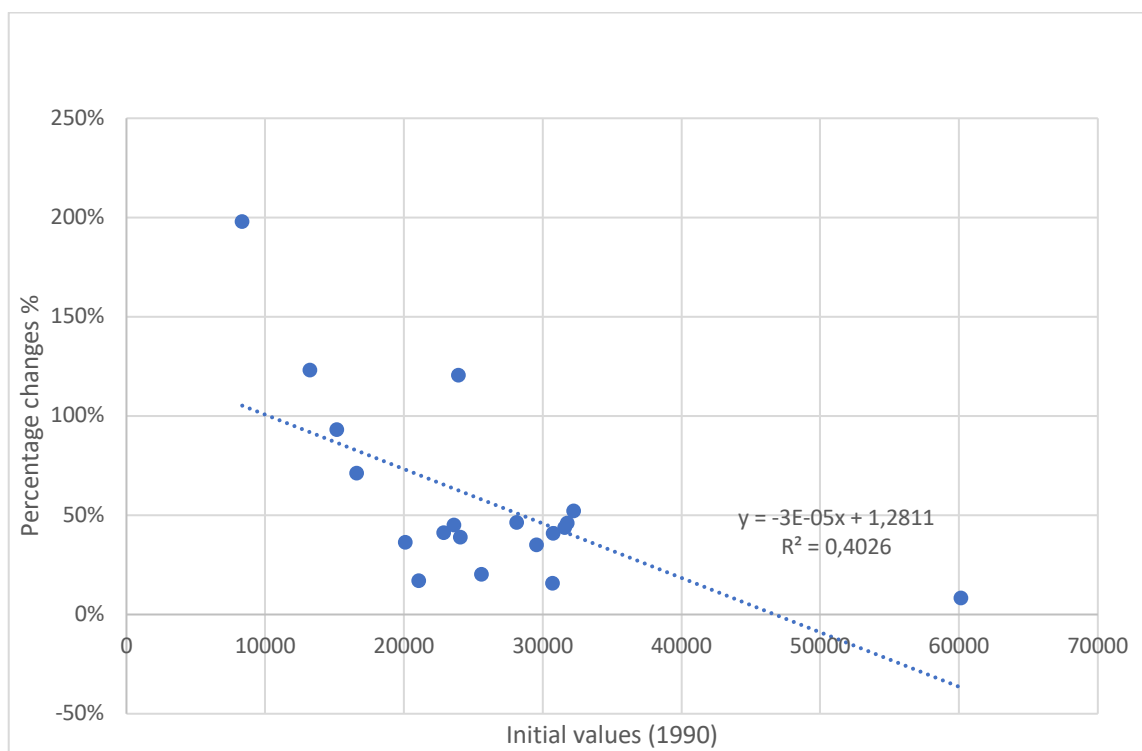


Figure 9.

Growth rate of GNI per capita, 1990-2018, compared to GNI per capita in 1990; 19 countries. own elaboration on data. Data source: World Development Indicators

In Figure 9, the trend line underlines a beta-convergent pattern among the Euro zone countries, pattern which didn't show up while analysing the EA12 countries only. It is then possible to notice how the new member states of the Euro zone shaped the overall convergent trend. In particular, Latvia's percentage change is impressive (198%), proving that the country is catching up in terms of GNI. The Slovak Republic has faced a significant percentage increase over the years too, even higher than the Irish one. These states have then become some of the main drivers of the Euro zone GNI convergence.

it is possible now to complete the analysis at national level by looking at the HDI performances of the nineteen countries composing the euro area since 2004.

Even in this case, for graphical efficiency reasons, the seven additional countries are compared in the graph with the average of the twelve countries already composing the Euro area, indicated with the blue line, in the graph.

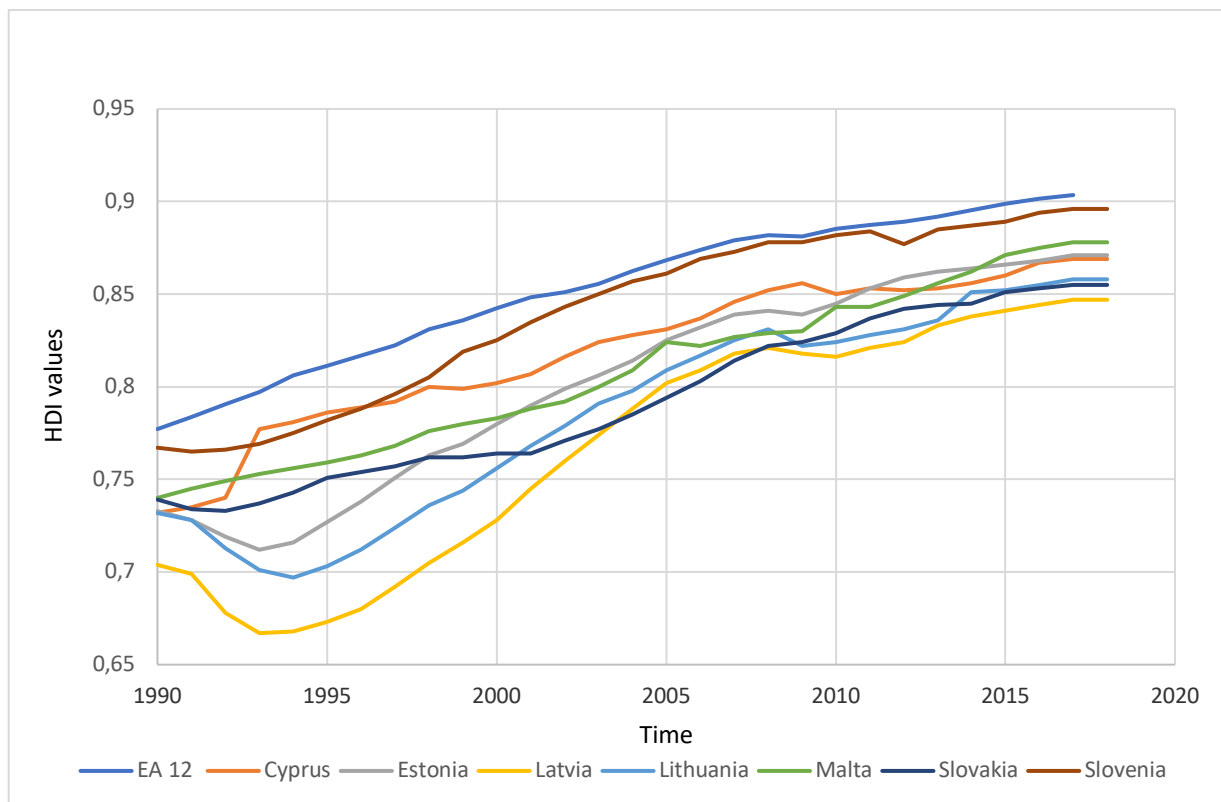


Figure 10.

HDI 1990-2018; 19 countries. Data source: <http://hdr.undp.org/en/data>

Newcomers of the euro area are all below the EA12 mean in terms of Human Development Index. However, they all have grown under a human development viewpoint, as well as they have come closer to the EA12 average, suggesting that differences between the two groups are decreased. Indeed, the 2018 statistical variance of EA19 countries with respect to their HDI values is lower than that of 1990, meaning that disparities among countries have decreased, therefore suggesting a sigma-convergence inclination. Moreover, New Member States' percentage increase in terms of human development is higher on average than that of the EA12 members (18% vs. 16%), therefore indicating a beta-convergence too. It is possible to notice that in 2004, when they entered in the Euro Area, their level was already relatively high, but that should not surprise, considering their need to comply with the *acquis communautaire* in order to accede to the Euro Zone.

Concerning the regression line displayed in Figure 11, it is possible to see how countries fit quite well on the general trend of convergence, with higher R-squared coefficient than the one reported in Figure 9, concerning founder countries only. Ireland is evidently an outlier, but this has been

already been discussed. As in the analysis of GNI, it is possible to notice that the New Member states strengthened the Euro zone convergence trend also in terms of HDI.

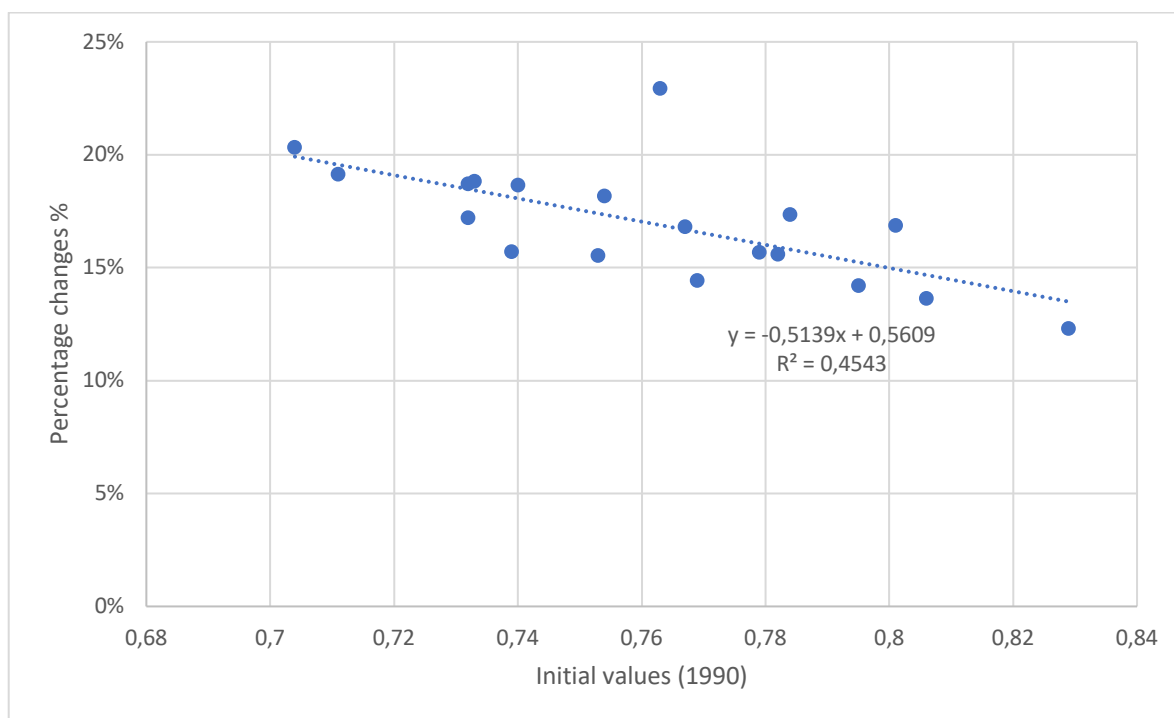


Figure 11.

*Growth rate of HDI, 1990-2018, compared to HDI in 1990; 19 countries. Own elaboration of data.
Data source: <http://hdr.undp.org/en/data>*

3.4 Comparing regional differences within countries: GDP vs EU-RHDI

At this stage, it is possible to tackle the core of this thesis: to analyse human development at a regional level, by using the European Regional Human Development Index. But first, a short regional GDP analysis will be provided. The scope of the analysis is restricted to the EA12 countries, already analysed at the national level. The period of observation runs from 2000 to 2017. As already pointed out, the level of analysis chosen is NUTS 2 level accordingly to the prevalent classification. It must be noticed that GDP has been preferred over the GNI (as in the national analysis) due to availability of data. However, even for GDP, data taken from the Eurostat website are incomplete: those concerning France and Netherlands are available only from 2015 to 2017. The plausible answer to this huge lack of information might be related to the NUTS 2 classification, since this classification has been proposed in 2016 and it is based on the

most recent national subdivision for the application of regional policies. It was not possible, however, to find the missing data elsewhere, therefore those countries have been excluded from the analysis where it was not possible to do otherwise.

In *Figure 12*, the changes in GDP at the regional level (vertical axis) are analysed in relation to their initial values (horizontal axis). France and Netherlands have been excluded in this case.⁶⁰ On one hand, it is evident that there's no beta-convergence within the Euro zone. On the other hand, it is not possible to talk of divergence, yet. This because of the extremely low R squared coefficient, indicating that the trend line does not properly represent the dispersion of the data. Large regional differences seem to continue, or even increase, despite the efforts made to increase regional cohesion of the European territory. Moreover, the same conclusion on the lack of convergence is reached even while analysing the regional statistical variance at the country level.

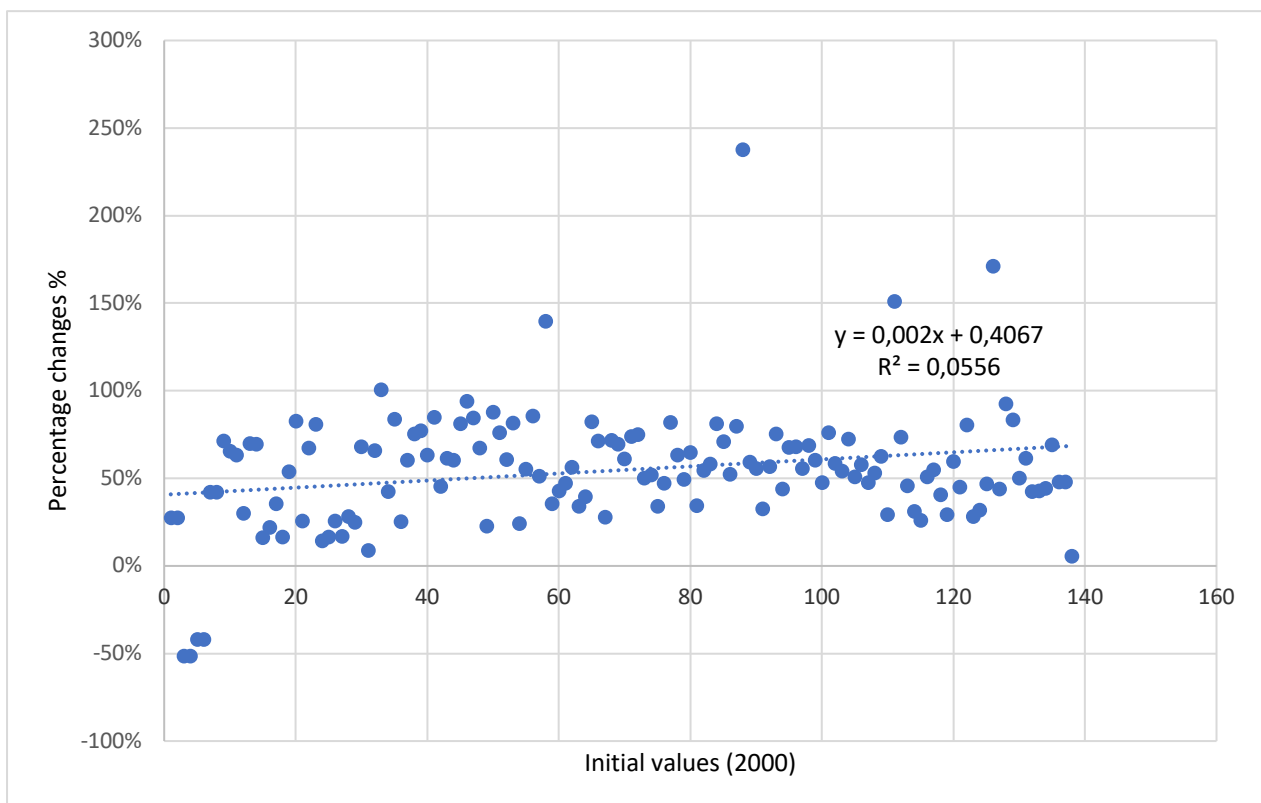


Figure 12.

GDP growth rate per capita, 2000-2018, compared to GDP per capita in 2000; 167 regions. Own elaboration on data. Data source: Eurostat. Last update: 06/09/19

⁶⁰ A graph illustrating the percentage change of the two countries only (from 2015 to 2017) can be found at the Appendix of this thesis. Graph No. 3

The regional GDP analysis finds support in the study made by Pierre Wunsch ⁶¹, which provide an analysis of GDP convergence of the European Member States, both at national and regional level. On the one hand, the study presents both beta and sigma convergence at the national level among European countries. In particular, convergence has been consistent especially before the financial crisis of 2008. However, he recognised that the more similar the countries were becoming, the weaker the convergent trend. On the other hand, he found out evidence of beta convergence also at the regional level among EU28 countries, showing that poorer countries have grown faster than the richer ones. However, he also stated that this catching-up process is slow, and heavily sensitive to domestic dynamics. Moreover, he also found out– and in this sense supporting the hypothesis of this work – that disparities among regions of EA12 countries have instead increased over the years, and evidence were found of a divergent process, however weak, within countries.

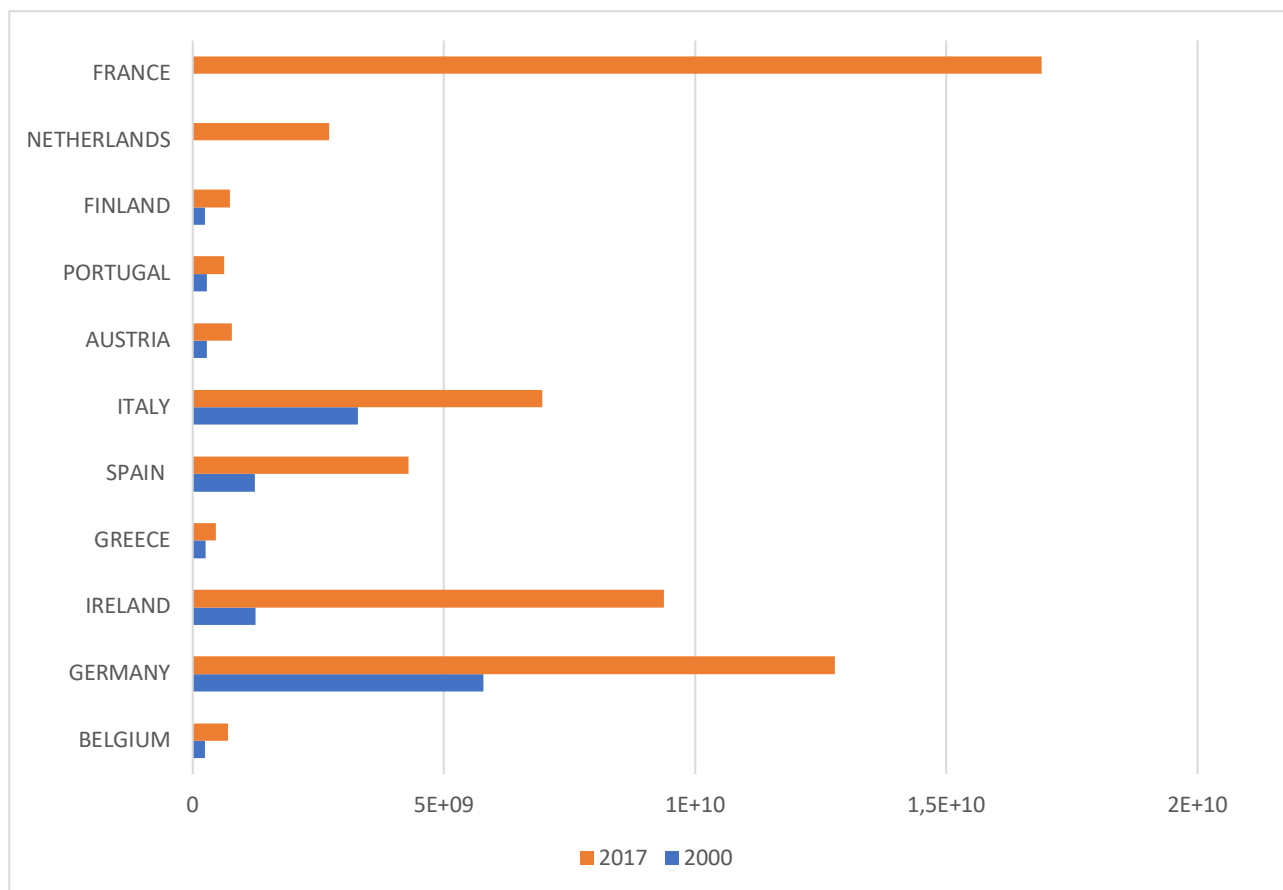


Figure 13.

Variance in GDP per capita, 2000-2017; 167 regions. Own elaboration on data. Data source: Eurostat.

⁶¹ Wunsch. 2013. pages 78-83.

Figure 13 confirms the increase in disparities among regions within countries, implying a trend of sigma-divergence. The graph illustrates how regional variance has changed for each country. As done previously, Luxembourg has been excluded from the analysis. It is evident how regional divergence in Italy and Germany has doubled over the years. It increased also in Spain, where in 2017, GDP variance among regions is three times greater than that in 2000. Ireland, in this case as well, “outperformed” by showing in 2017 differences in terms of GDP seven times higher than the one of less than two decades before. France and Netherlands have been added in the graph in order to be compared with the other countries, rather than through years. Indeed, variance among French regions is the highest in 2017. However, if the 2017 variance of France and Netherlands is compared with the one that they had three years before, it is possible to see how it has increased too, in line with other countries’ trend.⁶²

Therefore, it is evident how a pattern of sigma-divergence, rather than of convergence, has been sustained through the last two decades in the Euro territory. This result is coherent to the analyses of regional statistical variance both at the national and at the European level, meaning that not only differences have increase when regions of the same country are compared (as in *Figure 13*), but also among all regions of the EA12 sample.

The analysis is now extended to the human development index of the regions. First of all, few words must be spent on how the EU-RHDI has been calculated. As presented in subchapter 1.5, values have been calculated through the procedure described in the 2014 report by the European Commission⁶³, which introduces this new index adjusted for regional measurement.

To begin with, rough data from 2000 to 2017 for the six variables have been searched and found in the Eurostat database. Then, the values have been normalized by using the maximum-minimum method⁶⁴. Finally, all the values have been normalized into indicators from 0 to 1, and the three dimensions have been at this point calculated as the arithmetic mean of the two related variables. For example, in order to calculate the Education dimension for the Italian region “Piemonte” in 2000, the NEET indicator for that region in the year (=0,7698925) is selected, then the one concerning tertiary education (=0,09671533), and therefore the education dimension will be equal

⁶² A specific graph to illustrate the variation of France and Netherlands in the past three years can be found in the appendix of this thesis. (No. 4)

⁶³ Hardeman, and Dijkstra. 2014.

⁶⁴ Differentiating variables that are considered to negatively affect the growth of human development, namely Infant Mortality and NEET.

to the sum of the two indicators, divided by two. Once the three dimensions had been so calculated for all the years and regions, the EU-RHDI was then calculated as equal to the cubic root of the product of the three dimensions. Even in this case, some data are missing; in some cases, approximations have been made, while for other regions this was not possible. Indeed, when a single set of data for a region was missing, it has been approximated with that from the year before - or the year after. Logically, this was not possible when several values were missing for the same region. Ireland, for instance, consistently lacked availability of data. However, what concerns this final thesis is the general trend, therefore some observations can still be made.

Figure 14 presents the percentage change in values of EU-RHDI for each region through the time period of analysis on the vertical axis, while on the horizontal one there are the regional initial EU-RHDI scores. Please, notice that the EU-RHDI, being the cubic root of three values between 0 and 1, is itself a value between 0 and 1, as it was in the case of the HDI.

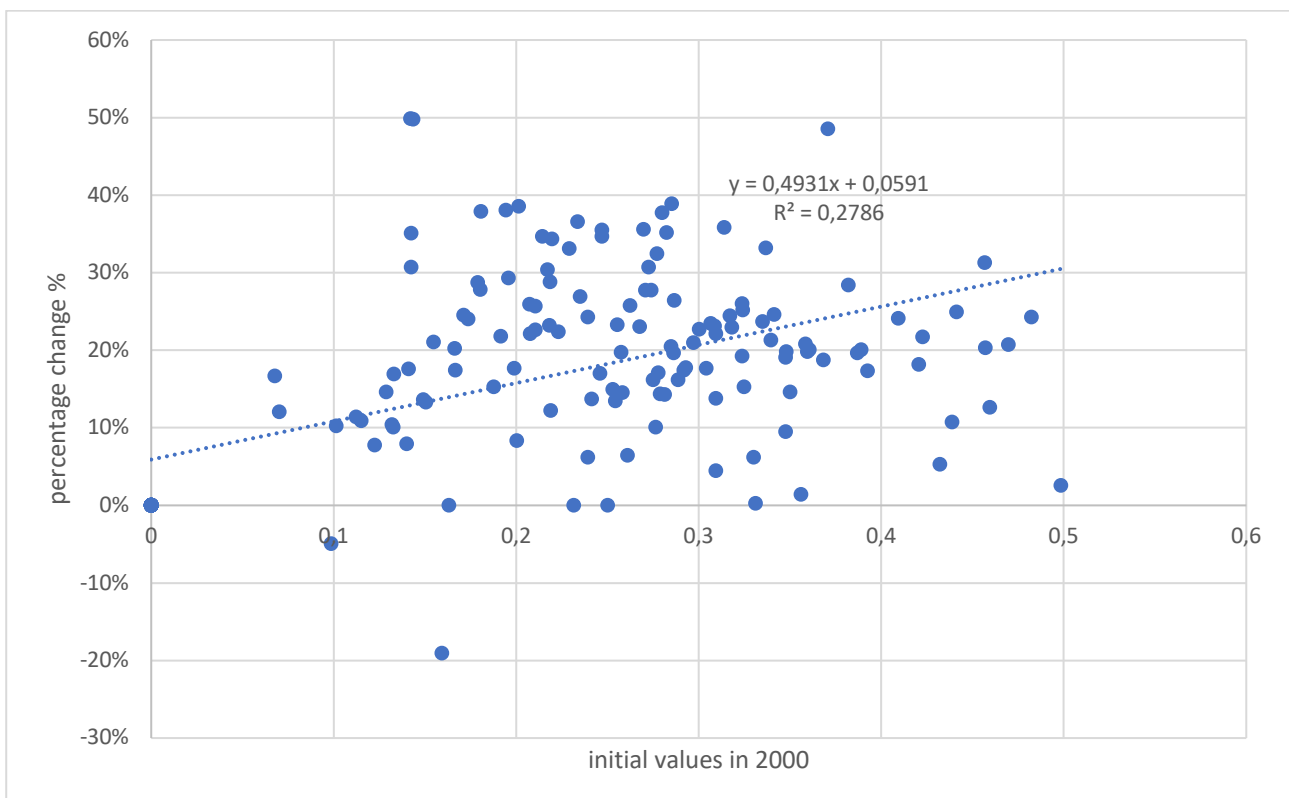


Figure 14.

Growth rate of EU RHDI, 2000-2017, compared to EU RHDI in 2000; 167 regions. Own elaboration on data. Data source: <http://hdr.undp.org/en/data>

The graph illustrates an evident divergent trend, indicated by an upward sloping line, characterized by a 0,28 R-squared coefficient. This means that growth in terms of human development is following a divergent trend, at a regional level of analysis. This is in clear contrast with the analysis at the national level in terms of human development, studied via HDI.

The two results, the first concerning the national analysis of the HDI and the second concerning the regional analysis of the EU-RHDI, provide a clear picture. While considering EA12 countries, it is possible to notice a trend of convergence among countries in terms of human development. This trend has been then strengthened by the EA19 members study. Differently, while considering the regional analysis, inequalities in human development are increasing among regions, suggesting a trend of divergence, this time showed by EU-RHDI values of EA12 regions. Therefore, although there is a convergent trend among EA12 countries, there is a process of polarization within those countries.

The divergent trend displayed in *Figure 14* is confirmed also in *Figure 15*. The latter shows how variance among all the regions of the EA12 member States has increased over the years in terms of human development.

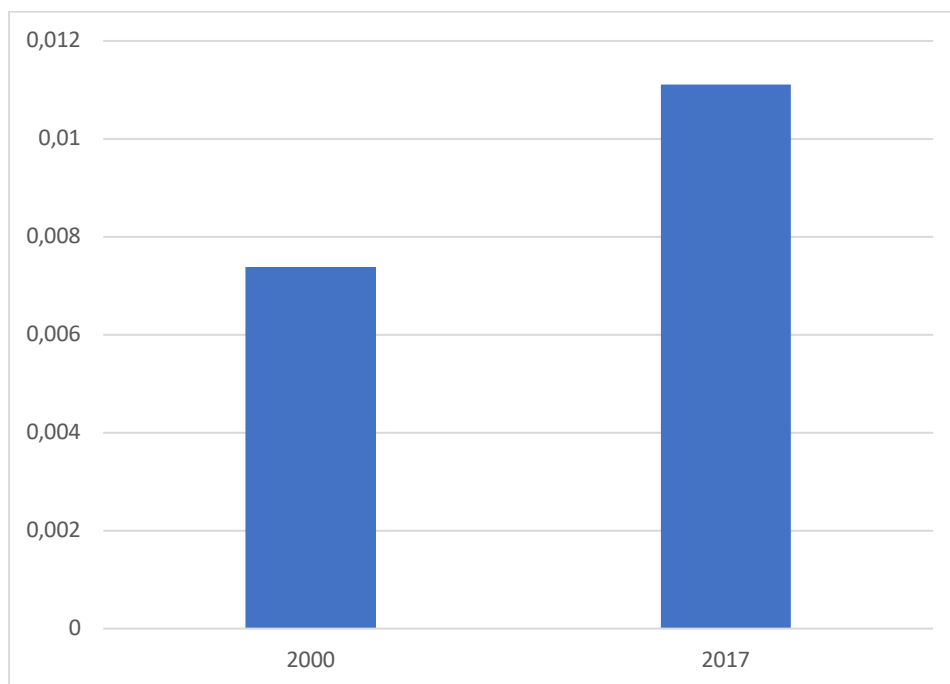


Figure 15.

Variance in EU RHDI, 2000-2017; 167 regions. Own elaboration on data. Data source: <http://hdr.undp.org/en/data>

As it has been done before, the EU-RHDI growth will be now analyzed by looking at its components. To begin with, since its pivotal role has been mentioned before, the Education dimension is pictured in *Figure 16*.

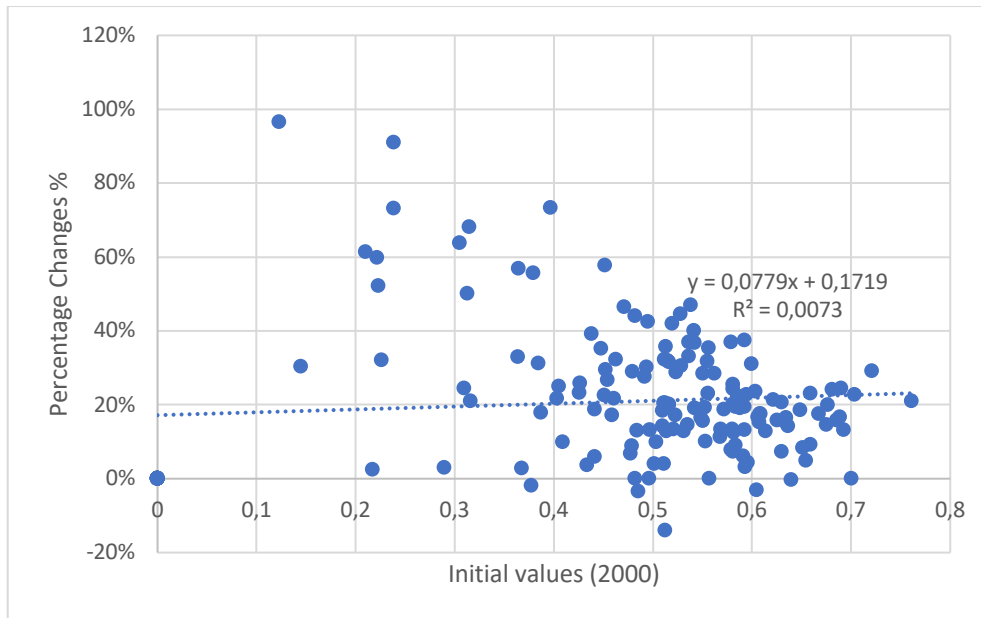


Figure 16.

Growth in Education Index, 2000-2017, compared to Education Index in 2000; 167 regions. Own elaboration on data. Data source: <http://hdr.undp.org/en/data>

It is not possible, by looking at the graph, to determine any trend of convergence or divergence among EA12 regions concerning the Education dimension. The large quantity of outliers, for example Basilicata that shows a 97%, makes the R-squared coefficient extremely low, hence, the trend line in the graph fails to explain the variability of data. However, the statistical variance of all regions in 2000 has been compared with the one of 2018 and showed an increase in differences among regions in terms of education levels, implying, as before, a sigma-divergent trend.

It is noticeable that this graph proposes a different picture with respect to the national one (represented in *Figure 6*). Indeed, when the dimension of “education” has been analyzed at the national level, the HDI values showed a clear trend of convergence among EA12 countries. The same apparently does not hold at a regional level of analysis. This suggesting that, while there is convergence between EA12 member states at the national level concerning education, there is evidence of no convergence between regions of the EA12 member states on the same matter.

Actually, there is evidence of sigma divergence, suggesting a process of regional polarization in the Education Index.

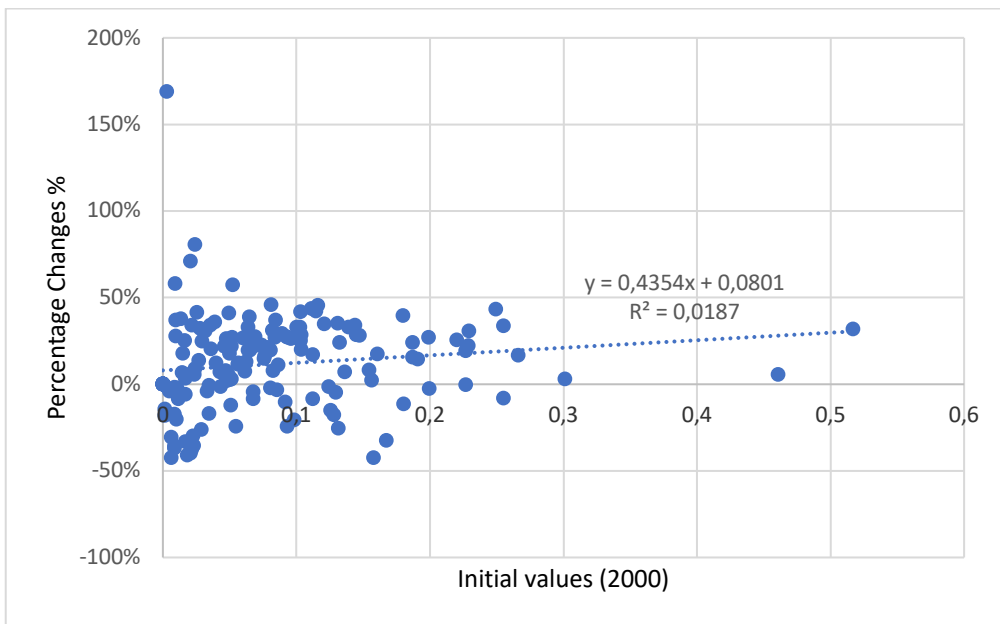


Figure 17.

Growth in Income Index, 2000-2017, compared to Income Index in 2000; 167 regions. Own elaboration on data. Data source: <http://hdr.undp.org/en/data>

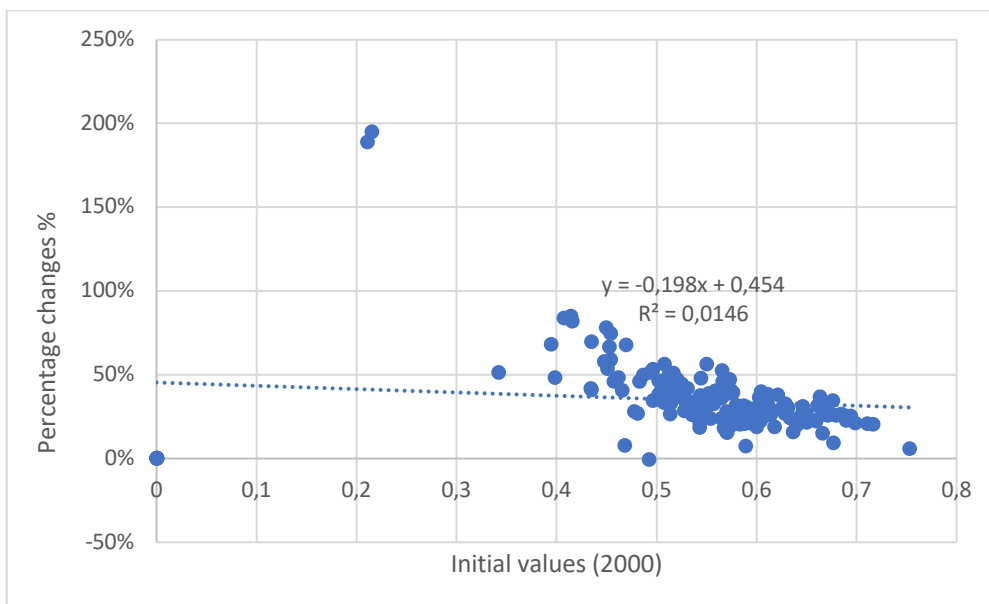


Figure 18.

Growth in Health Index, 2000-2017, compared to Health Index in 2000; 167 regions. Own elaboration on data. Data source: <http://hdr.undp.org/en/data>

Even for the Income and Health dimensions the extremely low R-squared coefficient make the regression line not indicative neither for a trend of convergence nor for one of divergence. However, it is possible to emphasize that while in *figure 17*, representing the regional percentage changes concerning Income, the trend line is slightly upward sloping, in *figure 18*, representing the percentage changes for what concern the Health dimension, the trend line is slightly downward sloping. In addition, by looking at the graphs, it is possible to observe that, on the one hand, values representing changes in income are distributed on the left of the graph; on the other hand, values representing changes in health instead, are distributed on the right. This means that initial values for health are evidently greater than those for income. Moreover, the two graphs show different dispersions of values, thus suggesting that disparities in terms of Income are greater than those in terms of Health. Anyhow, by comparing the statistical variance shown by EA12 regions in 2000, to the one they had in 2017, an increase in the disparities can be found, due to an increase in the statistical variance, for both dimensions, as indicated by an increase in the statistical variance.

To sum up, it has been observed a trend of both beta and sigma divergence in terms of human development among EA12 regions, the former by an upward sloping line indicating regions' growth rates, the latter represented by an increase in the statistical variance through the years. If the three dimensions composing the Index are analyzed separately, the general pattern of divergence is no longer present. However, discrepancies within each dimension seemed to be increase as the time went by.

Conclusions

There is an open academic debate on the phenomenon of convergence in Europe. This thesis contributed to it by providing a regional as well as national analysis. It focuses on a new concept of development, theoretically based on the Human Development Approach. Under this perspective, there is a new conceptualization of development in terms of people – intended as a community of individuals – rather than in terms of outcome. The idea of *human development* is so identified with the enlargement of people's capabilities, and their freedom to choose among them as they like. According to this approach, Income should be seen as a mean increasing people's capabilities, rather than an end. The mainstream assumption that economic growth will automatically lead to people's well-being has been therefore questioned. In practice, three essential choices are underlined in the UN definition of human development assumed by this dissertation, which are expressed in the structure of the Human Development Index. The theoretical distinction between the concepts of *development* and *economic growth* has been in this term underlined. Furthermore, it has been introduced the Solow model, in order to theoretically provide an explanation on why convergence is expected in Europe. Indeed, sustainable economic convergence is a consistent condition for the well-functioning of the European Union, and Member States' compliance with the Maastricht criteria should be their primary responsibility. In turn, sustainable economic convergence depends on institutional quality, addressed to Member State's agenda.⁶⁵ Therefore, European convergence severely relies on domestic policies. However, the European Union cohesion policies were added to support this project of harmonization.

It has been observed, as initially hypothesized, that in terms of *human development* there is a divergent trend among regions of those countries that first joined the Euro Area, namely Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Spain and Portugal. The results of this work suggest a trend of both beta and sigma regional divergence in the time observed, meaning that disparities in terms of *human development* are increasing among different regions, and that the catching up effect predicted by the Solow model is insufficient to address the agglomeration effect. This conclusion is in accordance with the conclusion reached by Tilford, as reported in chapter 2. He argued, in fact, that although EU single market and labour mobility have increased the well-being of skilled individuals that moved from the least favoured

⁶⁵ Diaz del Hoyo, Dorrucci, Heinz, and Muzikarova. 2017.

areas towards those more prosperous, they have increased regional disparities in levels of *development*.⁶⁶ Similar conclusions were also proposed by Schönfelder et Al. (2018)⁶⁷ which suggested a beta national divergence in *institutional development*, when older EU Member States are considered. Therefore, the result presented in this thesis questions the effectiveness of the European Policies that support regional cohesion, expression of the rationale of European convergence articulated in article 174 of the Treaty on the functioning of the European Union. The divergent trend is however observed also in terms of GDP, according to which differences among regions of EA12 countries are increasing both within and outside national borders. These results are however in contrast with those presented in Pellegrini et Al. study, which states that levels of development (in terms of GDP) of various regions are slightly converging, therefore the study positively assesses the outcome of EU regional Policy funds.⁶⁸

Interestingly, for the analysis at the national level, while it was expected a trend of convergence among EA12 countries, the results showed that the main drivers of European convergence (both in terms of GNI and HDI) are rather the New Member States, that joined the Euro Area in 2004, namely Slovenia, Cyprus, Malta, Slovakia, Estonia, Latvia and Lithuania. This result is nonetheless coherent with the objectives set within the European integration processes. However, for what concern EA12 countries, results are in conformity with those published by the European Central Bank, which show evidence of persistent cross-country income differences from 1999 to 2016, demonstrating the lack of European *economic* convergence.

Hence, this contribution expresses its concern on the sustainability of *human development* in EA12 countries, especially in those that presents a limited growth with respect to others'. In addition, it has not been observed significant changes both in terms of GNI and HDI by the time the single currency was adopted. This conclusion is supported by the findings published by ECOFIN and the Central Bank, which suggested that poor performances are not related to the adoption of Euro, but rather to long term exogenous factors, structural in nature, on which sustainable *development* depends.

⁶⁶ Tilford, 2017.

⁶⁷ Schönfelder and Wagner, 2018.

⁶⁸ Pellegrini, Terribile, Tarola, Muccigrosso, Busillo, 2012.

Additionally, the findings of this work confirm that an analysis which takes into consideration the GDP might be not strictly indicative of the socio-economic development of a country or a region. In this sense, one of the aims of the research was to compare different indicators of socio-economic performances. For instance, while analysing national convergence, the HDI is proven to be more representative of countries' well-being rather than the GNI measure only. The cases of Ireland and Luxembourg are explanatory in this sense. Indeed, the two countries showed outstanding performances in terms of GNI, but then their performances were resized when their HDI levels have been analysed, thus showing how their GNI per capita was biased. A similar conclusion concerning the measure of analysis can be drawn in the regional evaluation offered by this thesis. Indeed, while the GDP measure couldn't express neither a trend of convergence nor one of divergence concerning the domestic output, the EU-RHDI was able, instead, to detect a trend of divergence among the regions of the twelve countries by looking at their level of *human development*, whose components, namely health, education and income indicators, have been separately observed too. Therefore, it showed how regional socio-economic performances are diverging, especially due to differences in income and education.

It has been noticed, in fact, how relevant the education dimension is in terms of human development convergence (or its absence).

To sum up, it is possible to affirm that, in order to have a more comprehensive perception of both convergence and growth phenomena, a GDP analysis at the national level might be insufficient. Intra-country processes must be analysed too, as well as other fundamental drivers of socio-economic performances, which are best captured by the EU-RHDI.

Finally, it is suggested that national measures only are not sufficient for enhancing regional development. The results demonstrate how, by ignoring regional disparities (which are, as a matter of fact, a European issue) and therefore proposing investments at the national level only, those disparities might increase over time. Therefore, it has concluded that both national and regional policy measures are required in order to foster *human development* in the Euro-zone.

Eventually, this thesis proposes two future inquiries that would be interesting to explore.

First, it is clear that the 2008 crisis stopped convergence, but why did European countries didn't follow similar paths and assumed similar behavior? What can be the main systemic factors (affecting all countries) and idiosyncratic factors (country-specific) that limit Europe's action?

The question would be not about what created the crisis, but about what makes the difference between countries - or their regions - and makes them more or less vulnerable.

Second, it would be interesting to consider what has, on the other hand, fostered convergence. If data were available on the use of European funds at regional level, i.e. on the adaptation of the regulatory system to European directives (rate and time of transposition), it would be interesting to see whether the areas that transpose earlier and spend better are also those that are making the most progress. Perhaps this is because they already have a more efficient institutional framework, but this is difficult to measure however it is another important field of investigation.

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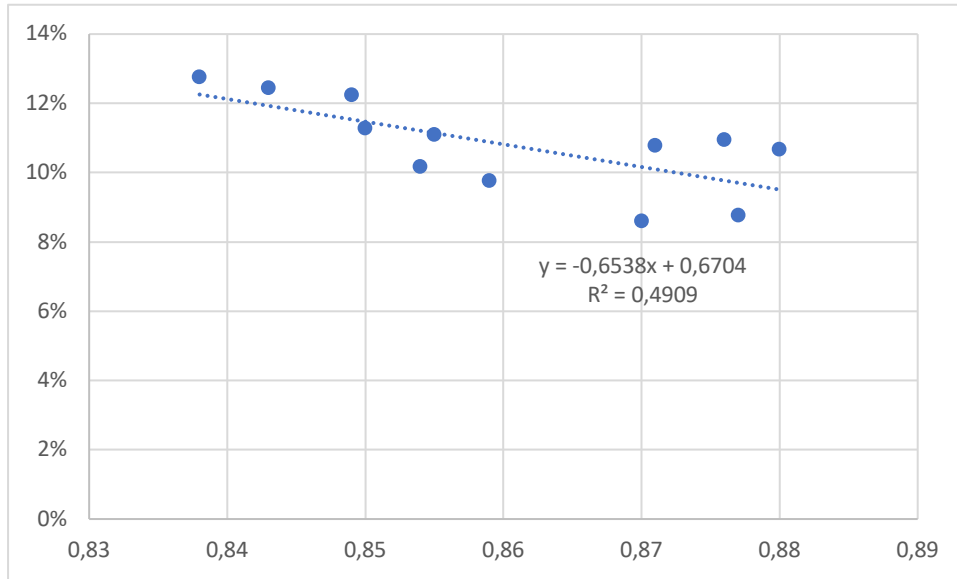
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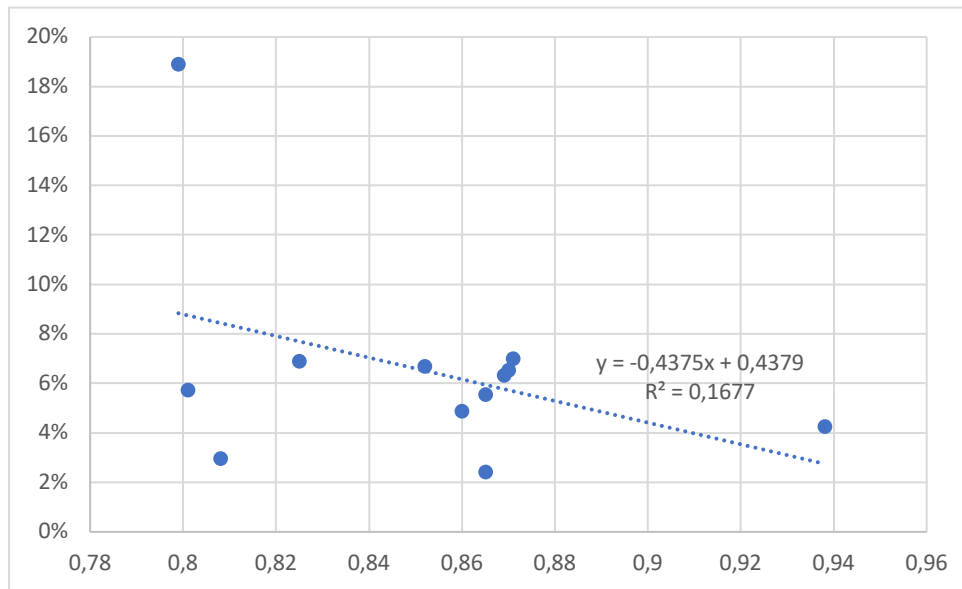
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Appendix



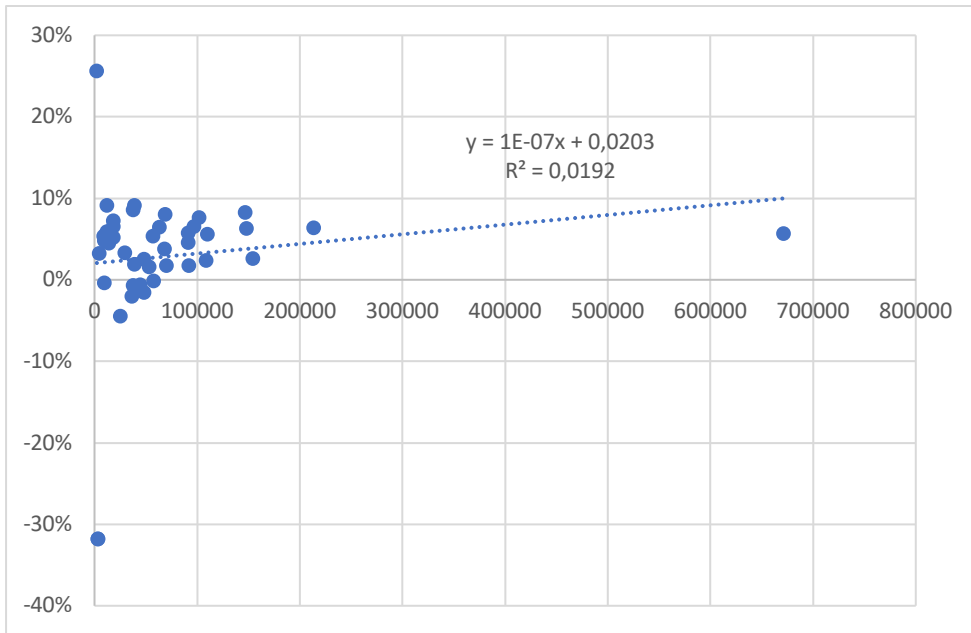
No 1.

Growth rate of Life Expectancy Index, 1990-2018, compared to Life Expectancy Index in 1990; 12 countries. Own elaboration of data. Data source: <http://hdr.undp.org/en/data>



No. 2.

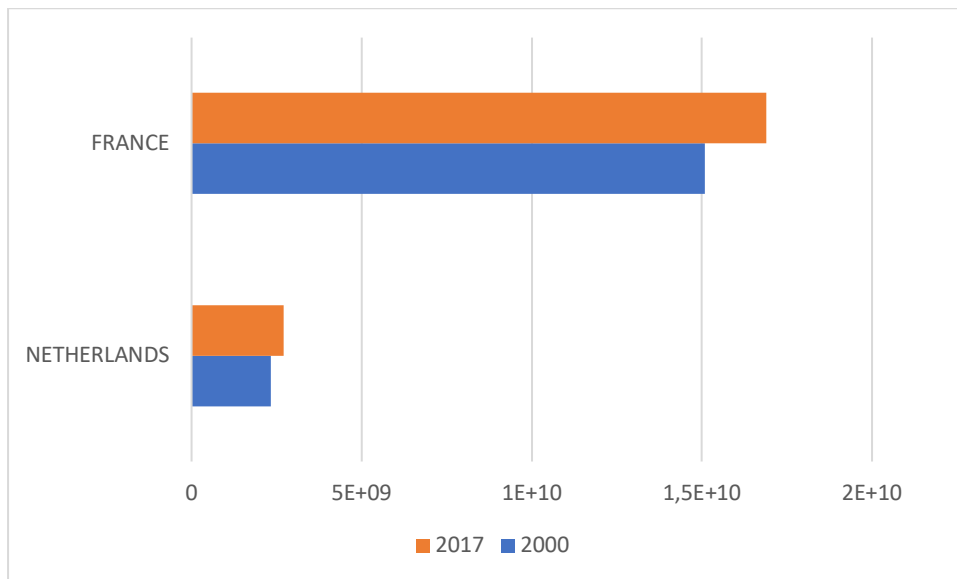
Growth rate of Income index, 1990-2018, compared to Income Index in 1990; 12 countries. Own elaboration of data. Data source: <http://hdr.undp.org/en/data>



No. 3.

Growth rate in GDP per capita for France and Netherlands. 2000-2017. Own elaboration on data.

Data Source: EUROSTAT



No. 4.

Variance in GDP for France and Netherlands; 2000-2017; Own elaboration on data. Data Source:

EUROSTAT

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Summary (in Italian)

La scelta del tema di questa ricerca è stata effettuata sulla base di una presunta divergenza regionale all'interno dei paesi dell'Unione Europea, in contrasto con le politiche europee volte a promuovere la coesione sociale ed economica. Ci si chiede quindi se tali differenze regionali stiano aumentando (o meno) e se esse incidano sulla coesione tra paesi. A tale scopo, si propone una valutazione basata su dati a livello regionale dei paesi europei che sono previsti convergere più rapidamente, ovvero i firmatari del trattato di Maastricht. Tuttavia, l'analisi non si concentrerà sulle prestazioni dei singoli stati o delle singole regioni, ma sul più ampio schema europeo, indagando sull'andamento generale dei paesi membri della euro zona.

Questa tesi è divisa in tre parti. Il primo capitolo offre una panoramica dell'argomento di analisi, fornendo brevemente un quadro economico e teorico ritenuto necessario per una corretta comprensione della materia. A tal fine, dopo aver sottolineato i limiti del PIL nel descrivere il benessere socioeconomico di una società, si propone un'introduzione all'*Human Development Approach* (letteralmente "approccio sullo sviluppo umano") in modo da illustrare le basi teoriche su cui si basa l'Indice di sviluppo umano (Isu).

Il secondo capitolo si concentra sul fenomeno di convergenza specifico dell'Europa. In primo luogo, viene fornito un quadro storico, sottolineando la logica di convergenza insita nelle regolazioni europee, riconducibile al Trattato di Maastricht e ai processi di integrazione. In secondo luogo, viene illustrata la letteratura esistente sull'argomento, ritenuta necessaria per meglio descrivere la controversia in merito.

Infine, il terzo capitolo esprime il reale contributo di questa tesi che consiste in un'analisi del fenomeno di convergenza europea sia a livello nazionale che regionale. Più precisamente, per l'analisi nazionale, sia il Reddito Nazionale Lordo (RNL) che l'Isu sono studiati nel tempo, prima includendo gli Stati membri dell'EA12⁶⁹, e poi il campione è stato esteso ai paesi entrati nell'euro zona nel 2004. Per l'analisi regionale, invece, sono stati considerati l'Indice Europeo di sviluppo umano regionale (UE-RHDI) e il Prodotto Interno Lordo (PIL). In questo caso, il PIL è stato preferito al RNL per ragioni di disponibilità dei dati. Le regioni di livello NUTS 2 sono state confrontate al fine di analizzare l'andamento divergente ipotizzato.

Questa tesi utilizzerà quindi sia l'Isu che l'EU-RHDI. Per l'analisi dell'Isu sono stati utilizzati i valori pubblicati dal Programma delle Nazioni Unite per lo Sviluppo (PNUS), mentre i valori

⁶⁹ Dodici paesi, firmatari del Trattato di Maastricht, che per primi hanno adottato l'euro come singola moneta.

dell'UE-RHDI sono stati calcolati *ex novo* come parte di questo lavoro. In particolare, sono stati raccolti i valori dell'Indice dello sviluppo umano dal 1990 al 2018, poi confrontati con quelli dell'UE-RHDI, gli ultimi calcolati per gli anni dal 2000 al 2017. I risultati presentati in questa tesi sono quindi molto sensibili sia alla scelta della misura dell'analisi che alla disponibilità dei dati stessi. Tuttavia, questa selezione specifica dell'indice, richiedente una propria elaborazione di dati, rappresenta la novità presentata in questo lavoro, che offre un contributo originale al dibattito sulla convergenza europea.

Il tema della convergenza europea viene introdotto il modello di Solow. Nonostante la sua età, questo è ancora di rilevanza sia teorica che empirica. Il modello, attraverso la descrizione della funzione di produzione, predice un andamento convergente nel lungo termine tra diversi stati, implicando che quelli più poveri presentino un tasso di crescita maggiore rispetto a quelli più ricchi. Tuttavia, il modello è teorico, e quindi limitato nella sua descrizione del mondo reale. Si sottolinea quindi come la convergenza non sia un processo automatico e scontato. Inoltre, va sottolineato che il modello di Solow si riferisce alla crescita economica, e non allo sviluppo. Infatti, è possibile avere una crescita economica senza sviluppo, ma non il contrario. Inoltre, questo modello riconosce che altre variabili esogene, oltre alla funzione di produzione, contribuiscono attivamente al benessere di un paese, e limita quindi il suo campo d'applicazione solo a quei paesi che presentano istituzioni simili. Pertanto, piuttosto che di convergenza, si parla di una "convergenza condizionale", la quale implica che i paesi più poveri dovrebbero crescere più velocemente di quelli più ricchi se presentano istituzioni simili, e che solo a questa condizione i paesi convergeranno verso livelli di produzione simili. Dunque, è possibile ipotizzare che il modello di Solow si applichi al caso europeo, in cui gli stati membri non solo presentano istituzioni nazionali simili, ma condividono anche le istituzioni europee.

In un rapporto della Banca Centrale Europea intitolato "*Real Convergence in the Euro Area: a long-term perspective*"⁷⁰ questa idea di convergenza condizionale viene espressa nel concetto di "qualità istituzionale", con il quale si intende "l'insieme di istituzioni e standard di amministrazione che promuovono la crescita"⁷¹. Ciò non significa che lo stesso modello istituzionale debba essere applicato da ogni stato membro, ma piuttosto che le istituzioni e le diverse amministrazioni operino secondo una logica di crescita. Viene poi riconosciuto come la qualità istituzionale sia una condizione necessaria per una convergenza economica sostenibile, e

⁷⁰ Diaz del Hoyo, Dorrucchi, Heinz, Muzikarova. 2017

⁷¹ Traduzione propria.

come questa quindi dovrebbe essere una priorità per ogni stato. D'altro canto, una convergenza economica sostenibile è una condizione necessaria per il buon funzionamento dell'Unione Europea, quindi gli Stati Membri sono chiamati a rispettare i criteri di Maastricht. Pertanto, si può evincere come la convergenza europea dipenda fortemente dalle politiche interne, nonostante l'esistenza di politiche di coesione dell'Unione Europea volte al sostenimento di questo progetto di armonizzazione.

Viene a questo punto introdotta la misura di analisi utilizzata nella tesi. Per quanto il PIL sia ancora oggi la misura più utilizzata per valutare i risultati economici, sono stati recentemente elaborati nuovi indicatori dello sviluppo. L'esempio più emblematico è l'Isu (in inglese *Human Development Index*), proposto dalle Nazioni Unite negli anni '90, con l'obiettivo di sottolineare che "le persone e le loro capacità dovrebbero essere i criteri ultimi per valutare lo sviluppo di un paese, non solo la crescita economica".⁷² Questo indice viene considerato il prodotto dello *Human Development Approach*, sviluppato dall'economista Mahbub ul Haq e supportato dal lavoro di Amartya Sen sulle capacità umane. Pertanto, il PIL sta perdendo il suo primato di misura principale dello sviluppo a favore di una nuova analisi centrata sull'uomo, che considera l'individuo e le sue capacità come il principale obiettivo dell'indagine. In particolare, il focus principale dello *Human Development Approach* è la capacità funzionale dell'uomo, e la libertà è la chiave di questo processo di sviluppo. Questo argomento è stato ampiamente sostenuto da Amartya Sen, il quale afferma che lo sviluppo riguarda l'espansione di sostanziali libertà individuali.

La definizione di sviluppo umano adottata in questa tesi è quindi quella espressa dalle Nazioni Unite nel primo Report sullo sviluppo umano, ovvero:

*"Lo sviluppo umano è un processo di ampliamento delle scelte delle persone. Le scelte più critiche di questo ampio spettro sono: vivere una vita lunga e sana, essere istruiti e avere accesso alle risorse necessarie per un livello di vita dignitoso. Ulteriori scelte includono la libertà politica, i diritti umani garantiti e il rispetto di sé stessi".*⁷³

⁷² United Nation Development Program website. Traduzione propria.

⁷³ United Nations Development Program. 1990. Page 1. Traduzione propria.

Si evincono tre diversi aspetti dello sviluppo umano, ovvero (1) una vita lunga e sana; (2) Istruzione; (3) un tenore di vita dignitoso. Questi aspetti sono rappresentati dalle dimensioni dell'Isu, il quale è un indice composto. Ciascuna delle tre dimensioni è valutata con un indicatore specifico, rispettivamente (1) la speranza di vita alla nascita, (2) gli anni medi di scolarizzazione per gli adulti e gli anni di scolarizzazione previsti per i bambini, (3) il RNL pro capite. L'Isu è la media geometrica di un indice normalizzato per ciascuna delle tre dimensioni, ossia l'indice di speranza di vita, l'indice di istruzione e l'indice RNL. Una caratteristica notevole dell'indice di sviluppo umano è il fatto che consente la valutazione delle politiche nazionali.

Nel 2014, viene però pubblicato un rapporto dalla Commissione Europea con l'obiettivo di modificare l'Isu alla luce delle differenze regionali tra i diversi paesi europei, al fine di sviluppare un nuovo indice per misurare lo sviluppo umano in Europa.⁷⁴ Questo rapporto è il risultato di un progetto denominato "*Regional Human Development*" previsto dalla Direzione Generale Politica Regionale e Urbana (DG REGIO). Il suo scopo è quello di modificare l'Isu e renderlo rilevante per un'analisi europea, spostando l'oggetto dell'indagine dai paesi alle regioni, e di renderlo adatto per confronti trasversali, nonché per confronti nel tempo. A tal fine è stato elaborato l'indice Europeo di Sviluppo Umano Regionale (EU-RHDI). Esso ha mantenuto la struttura tripartita dell'Isu, che è specifica per la salute, l'istruzione e il reddito, ma ha raddoppiato le variabili.

I risultati dello studio svolto e qui presentato, descritti nel capitolo 3, dimostrano come, in termini di sviluppo umano, vi sia una tendenza divergente tra le regioni dei paesi che hanno aderito per primi all'area dell'euro, vale a dire Austria, Belgio, Finlandia, Francia, Germania, Grecia, Irlanda, Italia, Lussemburgo, Paesi Bassi, Spagna e Portogallo. Come inizialmente ipotizzato, si osserva un andamento di sigma-divergenza regionale nel tempo in esame, il che significa che le disparità in termini di sviluppo umano stanno aumentando tra le diverse regioni e di beta-divergenza regionale, ovvero che l'effetto di recupero previsto dal modello Solow è insufficiente. Questa conclusione è conforme a quella di Tilford, come riportato nel capitolo 2. Egli ha sostenuto, infatti, che sebbene il mercato unico dell'UE e la mobilità del lavoro abbiano aumentato il benessere delle persone qualificate, le quali si sono concentrate nelle regioni più ricche, hanno però aumentato in questo modo le disparità regionali nei livelli di sviluppo.⁷⁵ Conclusioni analoghe sono state proposte anche da Schönfelder et Al. (2018) che suggeriscono una beta-

⁷⁴ Dijkstra, Hardeman. 2014.

⁷⁵ Tilford, 2017.

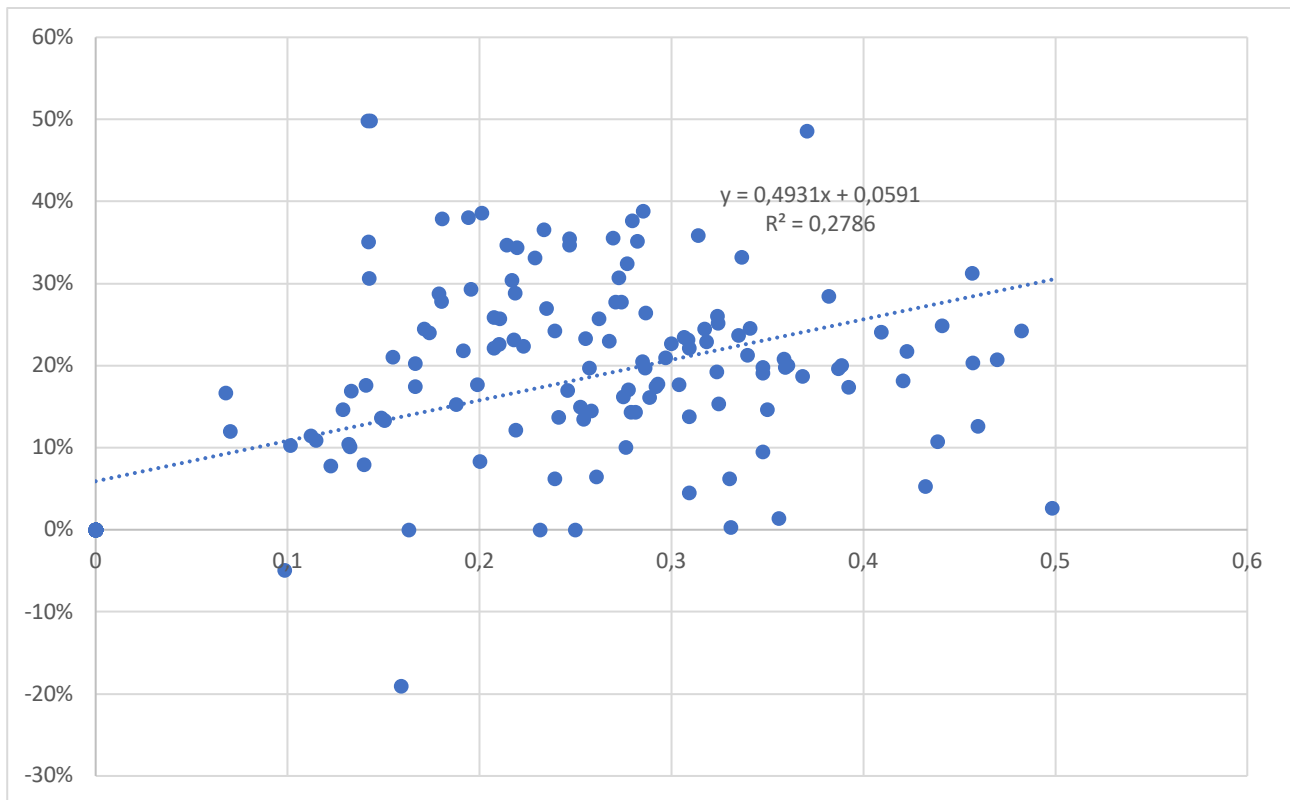
divergenza tra i dodici paesi in termini di sviluppo istituzionale.⁷⁶ Pertanto, i risultati qui presentati mettono in discussione l'efficacia delle politiche europee a sostegno della coesione regionale, espressione della logica della convergenza europea articolata nell'articolo 174 del Trattato sul funzionamento dell'Unione Europea.⁷⁷

Come presentato nel paragrafo 1.5, i valori dell'EU-RHDI sono stati calcolati attraverso la procedura descritta nella relazione 2014 della Commissione Europea, che introduce questo nuovo indice corretto per la misurazione regionale. Per cominciare, i dati relativi alle sei variabili sono stati prelevati dalla banca dati Eurostat, dal 2000 al 2017. Successivamente, questi dati sono stati normalizzati utilizzando il metodo del massimo-minimo, quindi trasformati in indicatori da 0 a 1. Ciascuna delle tre dimensioni che compongono l'indice è stata calcolata, a questo punto, attraverso la media aritmetica delle due variabili correlate. Ad esempio, per calcolare la dimensione dell'Istruzione per la regione italiana "Piemonte" nel 2000, si è selezionato l'indicatore NEET⁷⁸ per quella regione in quell'anno (=0,7698925), poi l'indicatore relativo all'istruzione terziaria (=0,09671533), e quindi la dimensione dell'istruzione sarà pari alla somma dei due indicatori, divisa per due. Una volta che le tre dimensioni sono state così calcolate per tutti gli anni e le regioni, l'EU-RHDI è stato poi calcolato come uguale alla radice cubica del prodotto delle tre dimensioni. Mancano però alcuni dati; in alcuni casi sono state effettuate approssimazioni, mentre per altre regioni ciò non è stato possibile. Infatti, quando mancava un'unica serie di dati per una regione, essa è stata approssimata con quella dell'anno precedente - o dell'anno successivo. Logicamente, ciò non è stato possibile quando mancavano diversi valori per la stessa regione. I dati disponibili sull'Irlanda, ad esempio, sono molto carenti. Tuttavia, il *focus* di questo lavoro è la tendenza generale, pertanto è stato possibile formulare in ogni caso alcune osservazioni.

⁷⁶ Schönfelder, Wagner, 2018.

⁷⁷ Vedi capitolo 2, pagina 24

⁷⁸ Not in Education, Employment or Training



Tasso di crescita dell'EU-RHDI, 2000-2017, rispetto all'EU-RHDI nel 2000; 167 regioni.

Elaborazione propria dei dati. Fonte dei dati: <http://hdr.undp.org/en/data>

Il grafico illustra un'evidente tendenza divergente, indicata da una retta crescente, caratterizzata da un coefficiente di 0,28 R-quadro. Questi risultati sono in netto contrasto con l'analisi a livello nazionale in termini di sviluppo umano, studiata attraverso l'Isu.

In sintesi, è stato osservato un andamento di beta e sigma-divergenza in termini di sviluppo umano tra le regioni EA12, la prima con una linea di regressione che indica i tassi di crescita delle regioni, la seconda rappresentata da un aumento della varianza statistica nel corso degli anni.

La tendenza divergente è comunque osservata in modo analogo anche in termini di PIL, secondo cui le differenze tra le regioni dei paesi dell'EA12 sono in aumento sia all'interno che all'esterno dei confini nazionali. Questi risultati sono in ogni caso in contrasto con quelli presentati nello studio di Pellegrini et Al., nel quale si afferma che i livelli di sviluppo (in termini di PIL) delle varie regioni sono leggermente convergenti, valutando positivamente l'esito dei fondi di politica regionale dell'UE.

Per l'analisi a livello nazionale è interessante notare che, nonostante fosse attesa una convergenza tra i paesi dell'EA12, i risultati hanno invece mostrato come i principali motori della convergenza europea (sia in termini di RNL che di Isu) siano piuttosto gli Stati Membri aggiunti nel 2004, vale a dire Slovenia, Cipro, Malta, Malta, Slovacchia, Estonia, Lettonia e Lituania. Questo risultato è comunque coerente con gli obiettivi fissati nell'ambito dei processi di integrazione europea. Tuttavia, per quanto riguarda i paesi dell'EA12, i risultati sono conformi a quelli pubblicati dalla Banca Centrale Europea, che evidenziano persistenti differenze di reddito tra i paesi tra il 1999 e il 2016, a dimostrazione della mancanza di convergenza economica europea.⁷⁹

Infatti, i risultati di questa tesi dimostrano come, se si considerano i livelli dell'RNL negli ultimi 27 anni, non ci sia convergenza tra i paesi dell'EA12. È quindi possibile notare come i nuovi Stati membri della zona euro hanno plasmato la tendenza generale di convergenza.

Inoltre, analizzando i valori dell'RNL, è evidente che i paesi hanno reagito alla crisi del 2008 in modi diversi, determinando successivamente prestazioni socioeconomiche diverse. Questo evento, senza alcun dubbio, ha ripercussioni sul modello generale di convergenza, che evidenzia il rapporto di dipendenza tra i risultati economici e le politiche interne.

Invece, per quanto riguarda l'analisi nazionale dell'Isu, i dati mostrano sia una beta che una sigma-convergenza. Ciò suggerisce che nel periodo d'analisi, gli stati più arretrati in termini di sviluppo umano siano cresciuti di più, rispetto agli stati più sviluppati. Tuttavia, Irlanda, Italia e Grecia sembrano non seguire questo andamento europeo: la prima a causa della sua forte crescita, mentre nel caso dell'Italia e della Grecia a causa dei loro scarsi risultati rispetto agli altri paesi.

Pertanto, sebbene vi sia una tendenza convergente in termini di sviluppo umano tra i paesi EA12, vi è un processo di polarizzazione all'interno di questi paesi.

Questa tesi solleva quindi una questione sulla sostenibilità dello sviluppo umano nei paesi dell'EA12, soprattutto in quelli che presentano una crescita limitata rispetto agli altri. Inoltre, non sono stati osservati cambiamenti significativi sia in termini di RNL che di Isu al momento dell'adozione della moneta unica. Questa conclusione è supportata dai risultati pubblicati dall'ECOFIN e dalla Banca Centrale, i quali suggeriscono che le scarse prestazioni non debbano essere legate all'adozione dell'euro, ma piuttosto a fattori esogeni a lungo termine, di natura strutturale, da cui dipende lo sviluppo sostenibile.⁸⁰

⁷⁹ Diaz del Hoyo, Dorrucchi, Heinz and Muzikarova. 2017

⁸⁰ Centre for European Policy Studies. 2018

Inoltre, i risultati di questo lavoro confermano che un'analisi che tenga conto del PIL potrebbe non essere strettamente indicativa dello sviluppo socioeconomico di un paese o di una regione. In questo senso, uno degli obiettivi della ricerca era quello di confrontare diversi indicatori delle prestazioni socioeconomiche. Ad esempio, analizzando la convergenza nazionale, è stato dimostrato come l'Isu sia più rappresentativo del benessere dei paesi piuttosto dalla sola misura dell'RNL. I casi dell'Irlanda e del Lussemburgo sono esplicativi in questo senso. In effetti, i due paesi hanno mostrato risultati eccellenti in termini di RNL, ma i loro risultati sono stati ridimensionati dall'analisi dei loro livelli di Isu, mostrando così come il loro RNL pro-capite fosse distorto. Una conclusione analoga per quanto riguarda la misura dell'analisi può essere tratta dalla valutazione regionale. Infatti, mentre la misura del PIL non ha potuto esprimere né una tendenza alla convergenza né una divergenza nella produzione interna, l'UE-RHDI è stato in grado, invece, di rilevare una tendenza divergente tra le regioni dei dodici paesi esaminando il loro livello di sviluppo umano. Tale indice, ha mostrato come le prestazioni socioeconomiche regionali siano divergenti, soprattutto a causa delle differenze di reddito e di istruzione. Si è notato, quanto sia rilevante la dimensione Istruzione in termini di convergenza (o di divergenza) dello sviluppo umano. Infatti, quando questa dimensione è stata analizzata a livello nazionale, i valori di Isu hanno mostrato una chiara tendenza alla convergenza tra i paesi EA12. Lo stesso non vale per l'analisi a livello regionale. Ciò suggerisce che, mentre ci sia convergenza tra gli Stati membri dell'EA12 a livello nazionale in materia di istruzione, non c'è evidenza di una convergenza tra le regioni degli Stati membri dell'EA12 sulla stessa materia. In realtà, c'è evidenza di sigma-divergenza, suggerendo un processo di polarizzazione regionale per quanto riguarda l'indice di istruzione. In generale, se si analizzano separatamente le tre dimensioni che compongono l'Indice, le discrepanze all'interno di ogni dimensione per le regioni del campione sembrano aumentare con il passare del tempo.

In sintesi, è possibile affermare che, per avere una percezione più completa dei fenomeni di convergenza e di crescita, un'analisi del PIL a livello nazionale potrebbe risultare insufficiente. Dovrebbero essere analizzati anche i processi all'interno del paese, nonché altri fattori fondamentali per le prestazioni socioeconomiche, che possono essere colti al meglio dall'UE-RHDI.

Per ultimo, si suggerisce che le sole misure nazionali non siano sufficienti per promuovere lo sviluppo umano regionale. I risultati dimostrano come, ignorando le disparità regionali (che sono di fatto una questione europea) e proponendo quindi investimenti solo a livello nazionale, tali differenze possano aumentare nel tempo.

Infine, questa ricerca propone due indagini future che sarebbe interessante esplorare.

In primo luogo, dai grafici risulta in modo chiaro come la crisi del 2008 abbia arrestato la convergenza, e dunque sarebbe interessante approfondire le motivazioni per cui i paesi europei non abbiano recuperato in modi analoghi assumendo comportamenti simili. Ci si interroga su quali possano essere i principali fattori sistemici (che interessano tutti i paesi) e i fattori idiosincratici (specifici per paese) che limitano l'azione dell'Europa.

In secondo luogo, sarebbe interessante considerare ciò che, d'altra parte, ha favorito la convergenza. Se fossero disponibili dati sull'utilizzo dei fondi europei a livello regionale, vale a dire sull'adeguamento del sistema normativo alle direttive europee (tasso e tempi di recepimento), sarebbe interessante vedere se le regioni che recepiscono prima e spendono meglio sono anche quelle che compiono i maggiori progressi.