

Version 29/02/2012



The ESPON 2013 Programme

TIGER

Territorial Impact of Globalization for Europe and its Regions

Applied Research Project 2013/1/1

Draft Final Scientific Report

Working paper 5

"Territorial inequalities in Europe and the US: a long term perspective"

Gilles Van Hamme, IGEAT-ULB



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1. Introduction

Territorial cohesion is an official objective of the European Union. While the exact definition and the way it should be measured is rather vague in the official documents, this objective is closely related to the difference of wealth between territories. This working paper is thus one of the elements of comparison between Europe and the other developed areas of the world, with the aim to overcome comparisons strictly focussed on competitiveness by also considering the other EU official objectives, social and territorial cohesion.

In this paper, we focus only on GDP and revenues to measure territorial wealth. The main interest is that we have a long term perspective (since the sixties), a multi scale approach and a comparison with the USA.

2. 1. Description of the data and indicators

In the US, the indicator at state level is the Gross Domestic Product coming from the US Bureau of Economic Analysis. It includes two sets of data :

- NAICS (1997-2009)
- SIC (1963-1997)

At the county level, the indicator is personal income at home residence and is also provided by the US Bureau of economic analysis. The comparison between these indicators should be taken with caution because the data at county level concern income at home and the data at state level added value at work.

In Europe, all data originate from Eurostat, though has been gathered on long periods of times. Our database covers some dates before 1995 and is annual and covers the whole European space after 1995.

To analyze territorial inequalities, we first map them at different scales, showing thus the huge diversity of situations that synthetic indicators do not highlight. For each map, we distinguish four main types of regions:

1. The regions richer than the European average with GDP growth per inhabitant higher than average: they are positive diverging regions (dark orange on the map);
2. The regions richer than the European average but with slower growth than the European average: they are negative converging regions (light blue)
3. The regions poorer than the European average with GDP growth superior to average: they are positive converging regions (light orange)
4. The regions poorer than the European average with lower growth than average: they are negative diverging regions (dark blue).

But we also use synthetic index of territorial inequalities. The convergence analysis is performed using a simple indicator of regional disparity, the σ - Convergence index

$$C_t = \sigma_t / \mu_t$$

Where

σ_t = weighted average standard deviation of regional GDP per inhabitant in date t .

μ_t = weighted average GDP per inhabitant in date t .

There are other convergence indicators, more complex, but they impose to introduce new parameters difficult to estimate in the long term, at different scales and in a comparative perspective. This is why we keep here the most simple indicators.

The sigma convergence indicator only estimates territorial inequalities at a given time, it allows to estimate changes in territorial inequalities by comparing the index at two different dates. We propose these estimations but they are complicated and not always perfectly comparable over the time because of changes in territorial divisions.

3. 2. The national/State scale in Europe and in the US

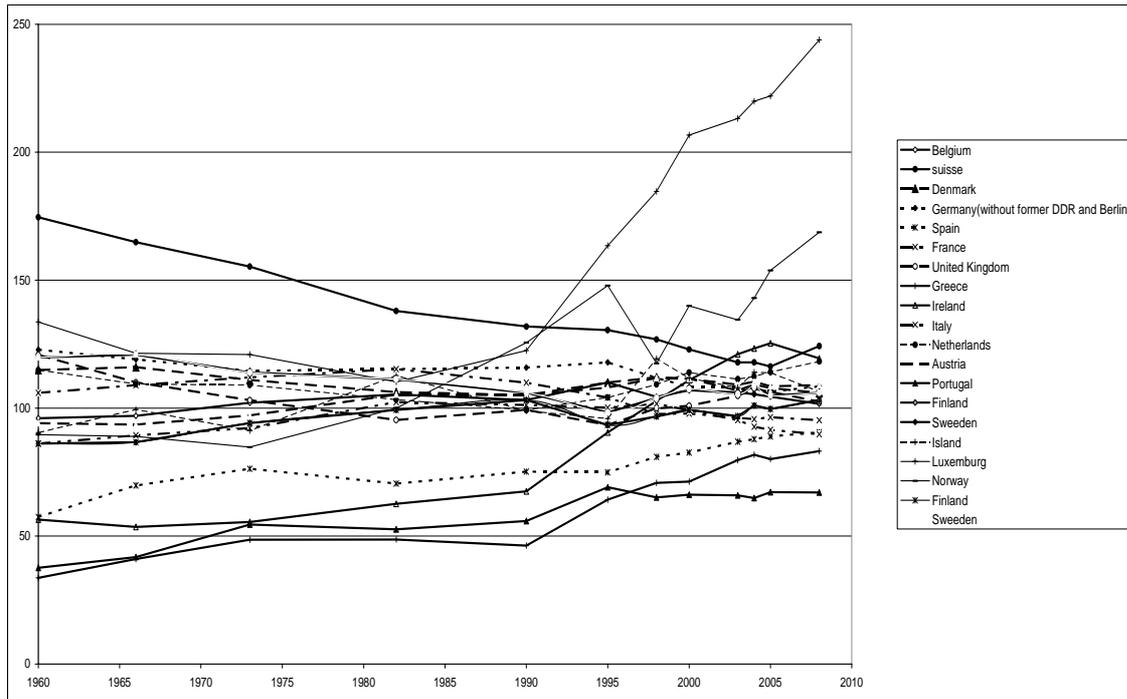
In Europe, we observe shows a general convergence between West European states, that was quite rapid before the 70's, but slowed down after the mid 70's crisis, to accelerate again from the 1990's onwards until the recent crisis. It seems that economic convergence has been more accentuated in good economic periods.

In the United States, the convergence process is also evident while with different pace and timing. Indeed, we can observe a general convergence movement until the 70's, than divergence between 1973 and 1981, convergence again until the mid 1990's, and again divergence in the last 15 years. Hence, in contrast to Europe, we do not observe convergence in the US at this scale in the last 15 years.

In figures 3a and b, we can observe

- Notable convergence of the sun belt (southern regions) at the beginning of the period and the decline of rust belt (North and North East).
- In the years 2000, the old south east and the rust belt have clear negative trends while the main cores areas (California, North East) perform better than average, suggesting intense processes of agglomeration and metropolitanization. We also observe convergence of some mid states, where this relative growth is sometimes often based on extraction.

Figure 1. GDP per inhabitant in West European countries, from 1960 to 2008.



For each date. Average GDP per inhabitant = 100

Figure 2. The σ - Convergence index for the US at state level, 1963-2009

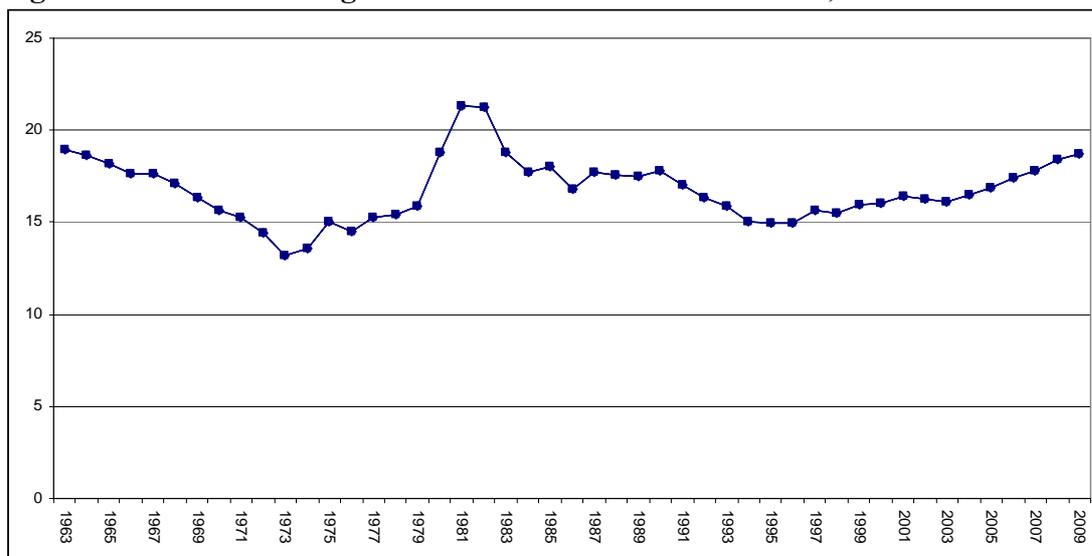
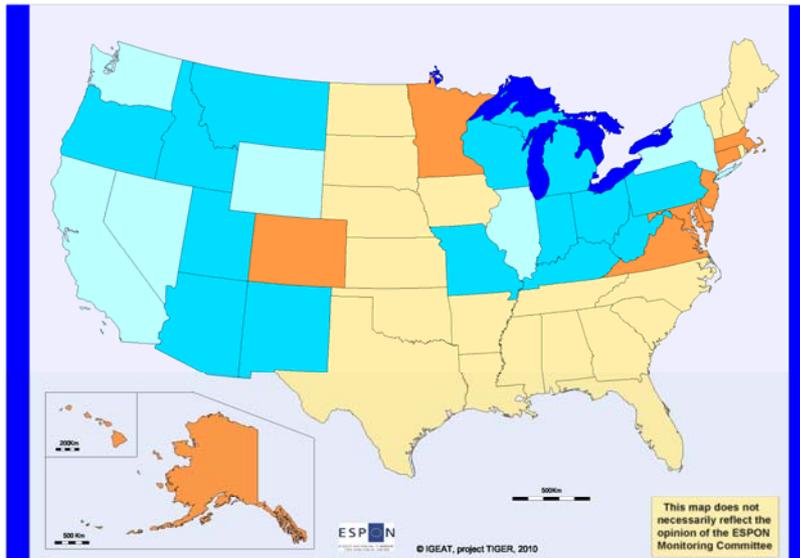


Figure 3. Convergence and divergence at state level in the US

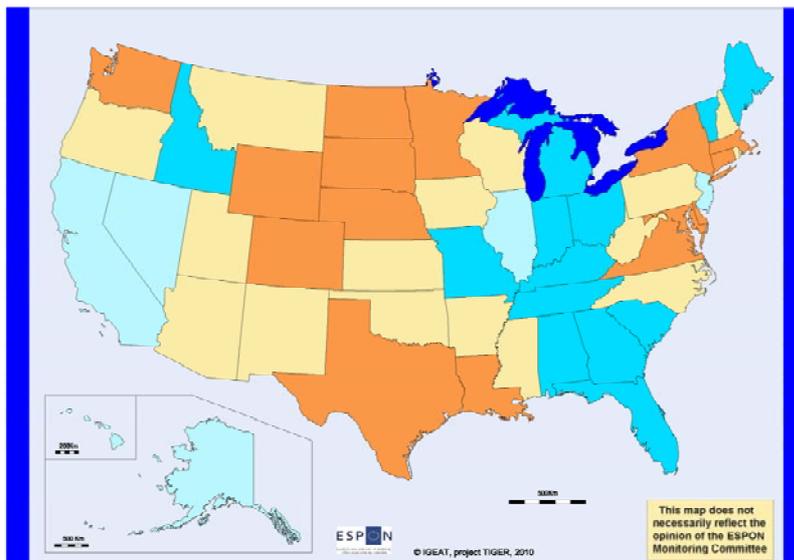


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Source : IGEAT, 2011
 Origin of data : BEA 2011

Convergence types 1963 - 1990
 GDP per inhabitant

Growth \ Level	Low	Higher
Low	Dark Blue	Light Blue
Higher	Yellow	Orange



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Source : IGEAT, 2011
 Origin of data : BEA 2011

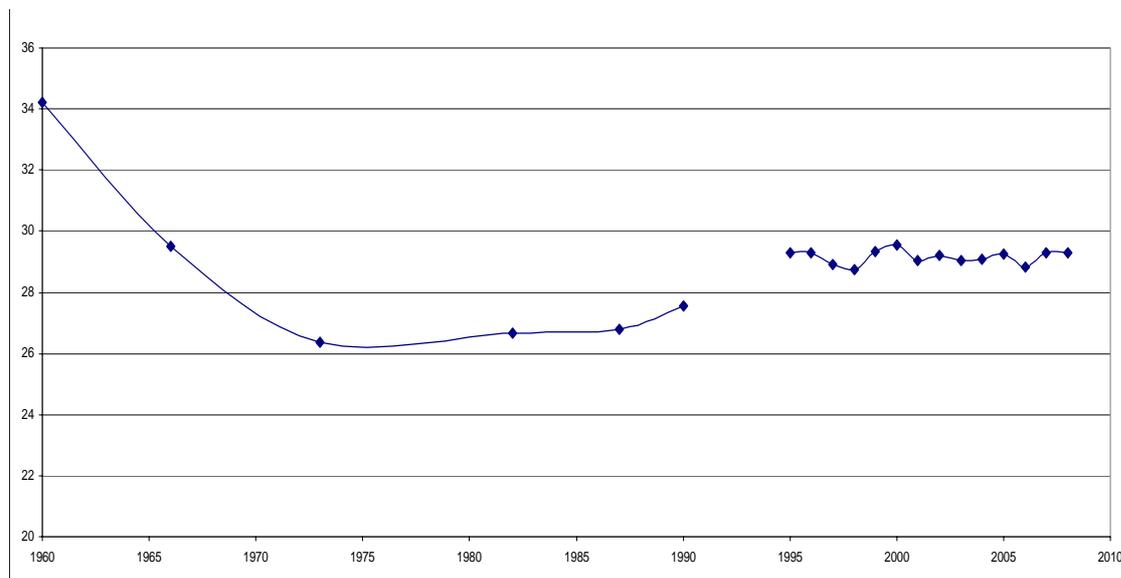
Convergence types 1990 - 2008
 GDP per inhabitant (\$)

Growth \ Level	Low	Higher
Low	Dark Blue	Light Blue
Higher	Yellow	Orange

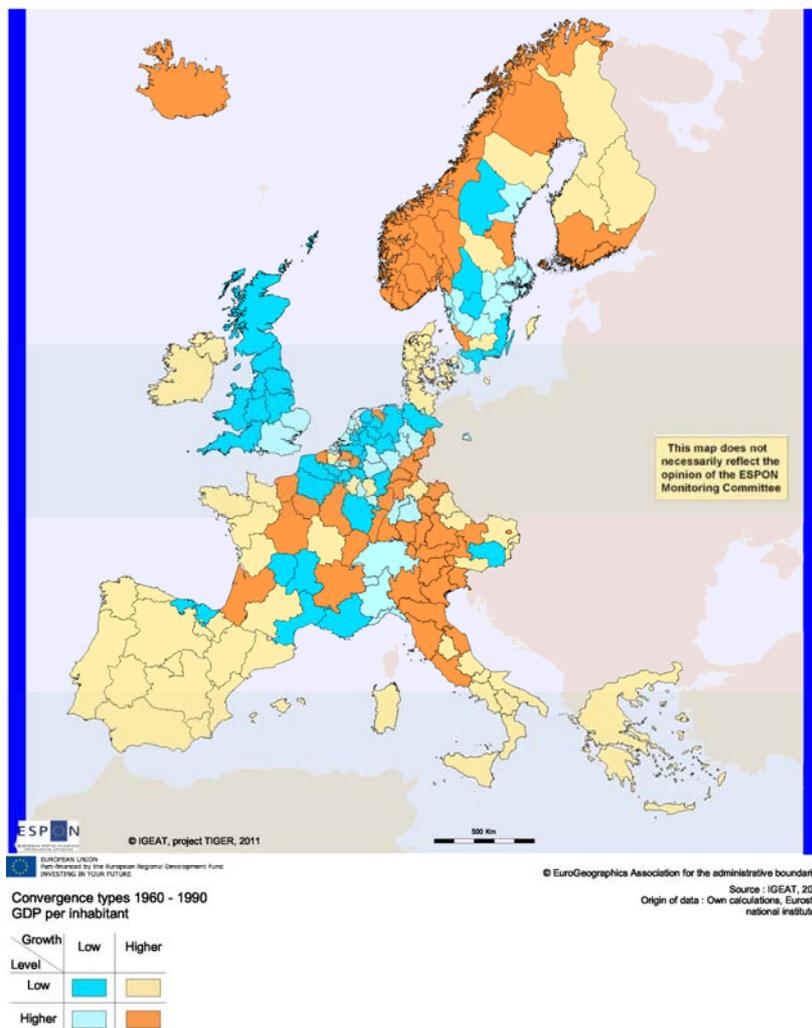
3. The regional scale in Europe and in the US

In Western Europe, between 1960 and 1990, we observe a general convergence of the poorest peripheral areas from Southern Europe, Ireland and Northern Finland (**Figures 4 and 5**). In the rest of Europe, the geography is very complex, being the result of national but also of regional trajectories. The decline of the UK and Dutch regions is general while all Norwegian regions have positive dynamics. We observe positive trends in the third Italy (central and North-Eastern Italy), in Southern Germany and in the Parisian basin. In contrast, many old industrial areas of North-Western Europe suffer from severe decline: the Walloon region, Northern France, the Ruhr-Rhine area etc.

Figure 4. The σ - Convergence index at regional level in Western Europe, 1960-1990

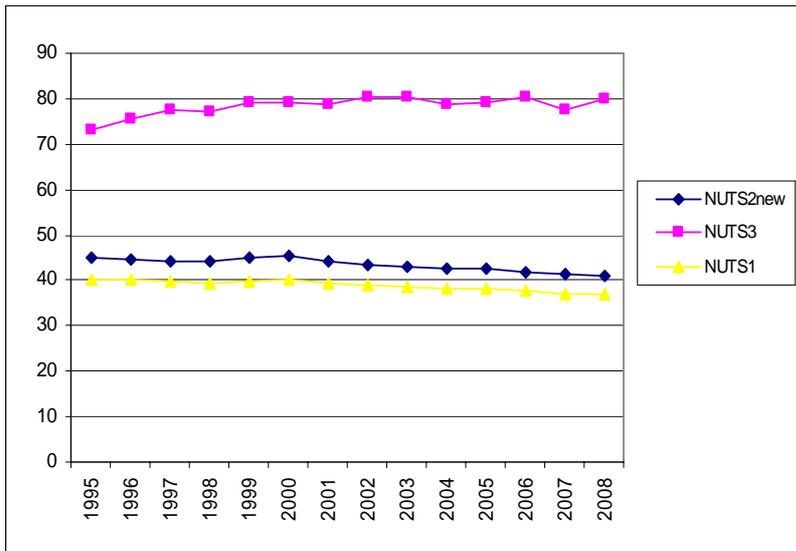


Note on the break 1990 1995

Figure 5. Convergence and divergence among West European regions, 1960-1990

On the last 15 years, we can propose a global assessment of convergence processes for the whole Europe at different scales (**Figure 6**). Interestingly enough, trends are not similar at different scales: though at the NUTS1 and NUTS2 scales, we can notice a slow trend toward convergence, the reverse is true at a more local scale (NUTS 3). The convergence at regional level is indeed the result of the convergence observed at national scale, and hence mostly the result of catching up process of eastern regions, as well as good economic performance of Spanish and Irish regions (**Figure 7**). At a most detailed scale, the divergence is due to the agglomeration process observed within many European countries, mainly in Eastern and Nordic Europe where capital regions grow at much higher rates than the rest of the country (**Figure 7**). However, this divergence process stops in the years 2000 as a result of weakening metropolitanization processes, especially in Western densely populated Europe.

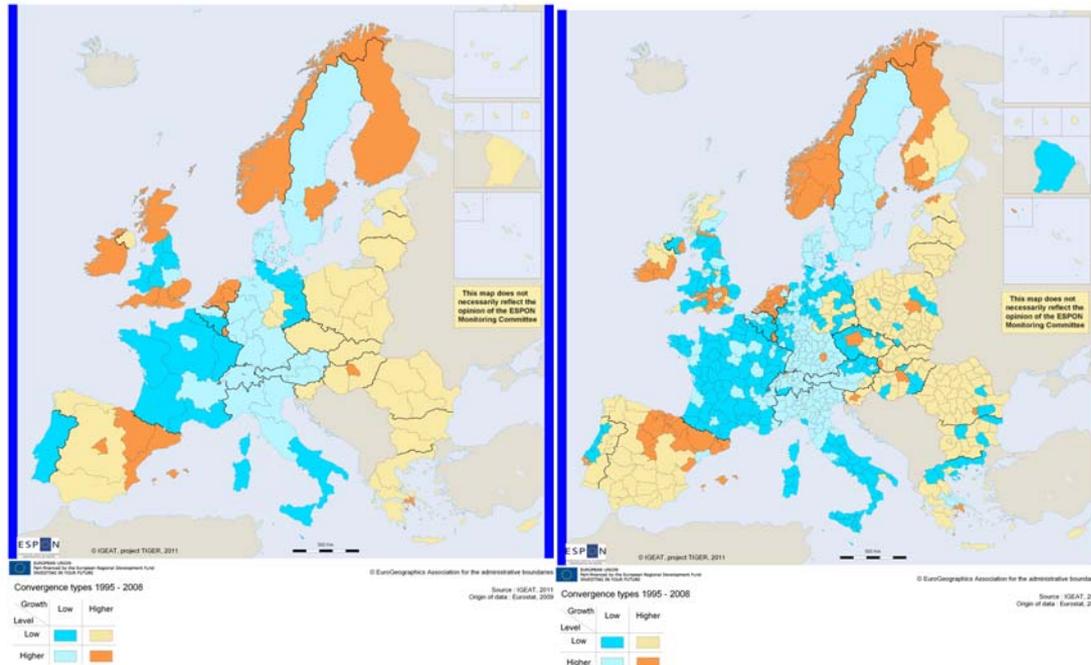
Figure 6. The σ - Convergence index at 3 different scales in the ESPON space, 1995-2008



Note : Nuts 2new is a more homogenous division based on NUTS 2 and the agglomeration of neighboring small NUTS3 (Vandermotten et al., 2010).

Source: Eurostat, 2011; personal calculations

Figure 7. Convergence and divergence in Europe between 1995 and 2008 at NUTS 2 and NUTS 3 scale.



In the US, our indicators at the county level are based on revenues measured at residence place rather than GDP measured at the workplace, which of course biases the comparison with Europe. There is a convergence in revenues between counties before the mid 70's crisis (almost due to higher growth rates in the Sun belt) and global divergence after (based on the growth of main metropolitan areas and the decline of rust belt and some rural counties) (Figure 8 and 9). In the US, we thus confirm divergence processes in the recent period of

times, resulting from both strong metropolitanization processes at regional scale, but also from growing territorial inequalities within urban areas.

Figure 8. The σ - Convergence index at county level, 1969-2008
 United State counties level 1969 – 2008 (revenues)

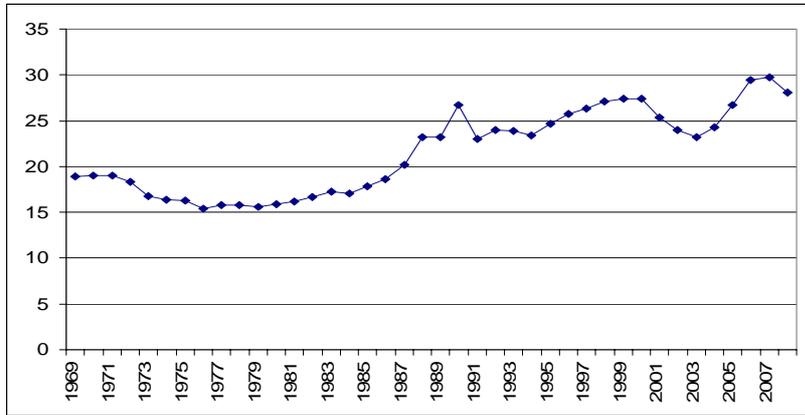
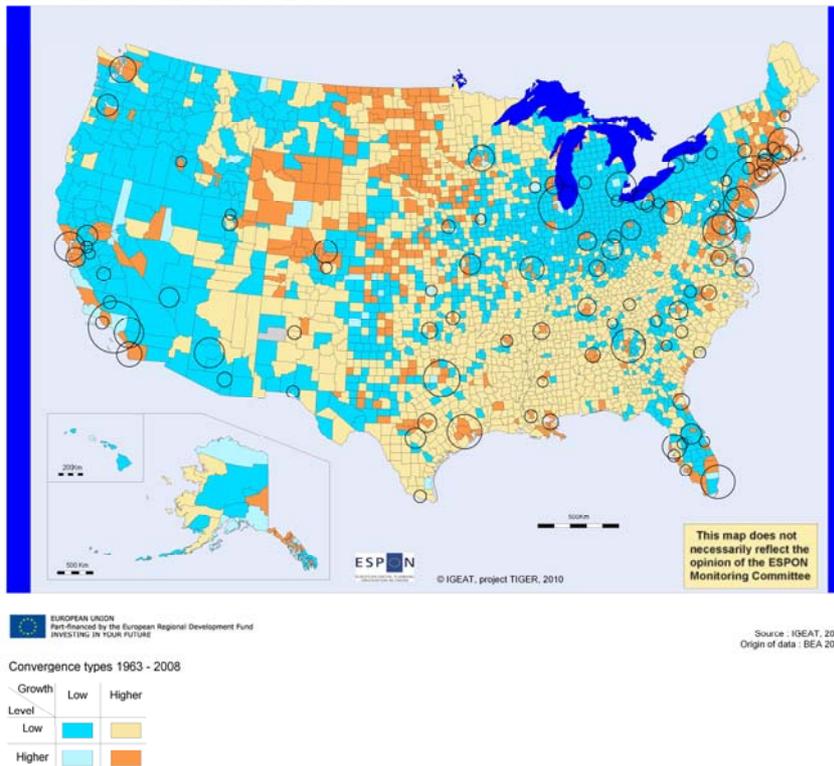
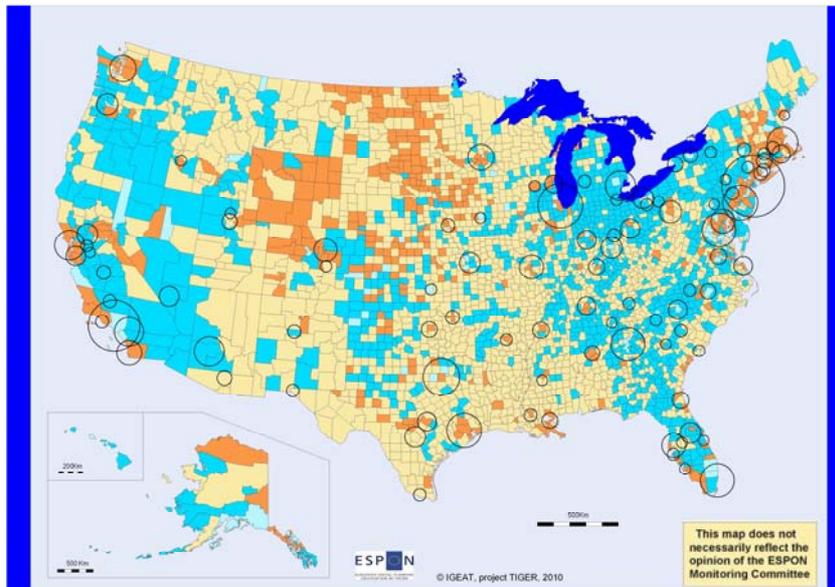


Figure 9. Convergence and divergence at the county level for two different periods, 1963-2008 and 1990-2008





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Source: IGEAT, 2011
 Origin of data: BEA 2011

Convergence types 1990 - 2008

Growth	Low	Higher
Level	Light Blue	Yellow
Higher	Orange	Dark Orange

4.

5. 4. Intra regional/national trends in some European states and US regions

Processes of convergence/divergence should not only be assessed at the European scale or for the whole US. In particular for Europe, national scale is highly relevant. In France, we observe convergence until the 1970's, and a stable process since then at regional scale (**Figure 10**). If we consider more refined scale (NUTS 3 – *département*), we observe increasing territorial inequalities at the end of the nineties and a stable index in the years 2000. In Spain, we observe divergence until 1973 and a stable index in the next decades. As observed above, Poland, like all central and Eastern European countries, we observe growing inequalities between regions, with a strong process of metropolitanization to the benefit of the capital city.

In contrast, we took the example of the north-eastern region of the USA (Figure 11): while at the local scale (county), territorial inequalities in terms of revenue have decreased until the seventies, the divergence is spectacular in the following decades, as a result of both social fragmentation of the urban space and growing social inequalities.

Figure 10. The σ - Convergence index at different scales in Spain, Poland and France, 1980-2008 (1995-2008 for Poland)

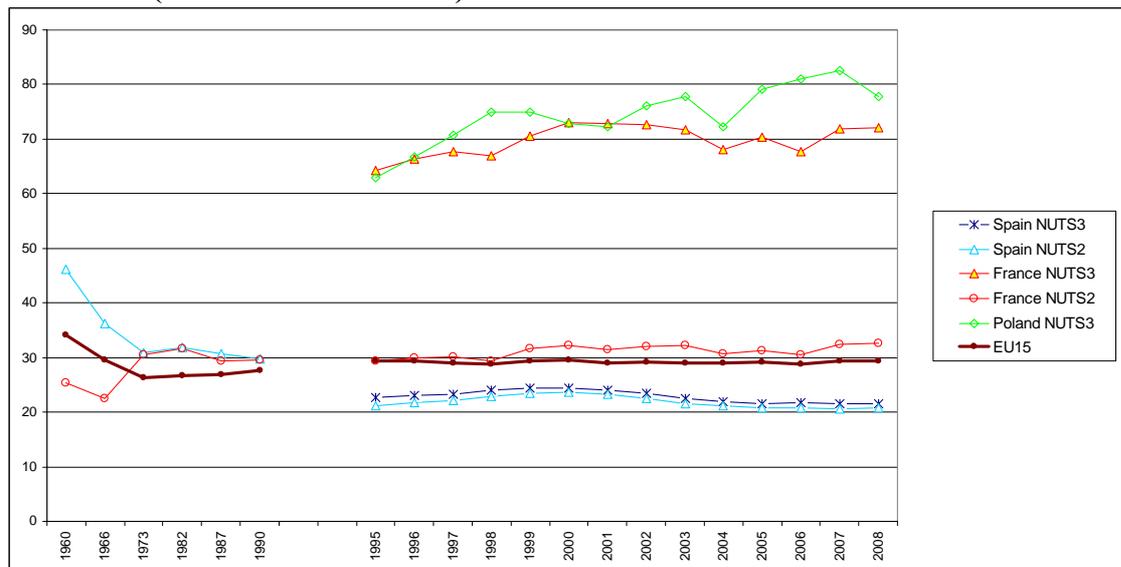
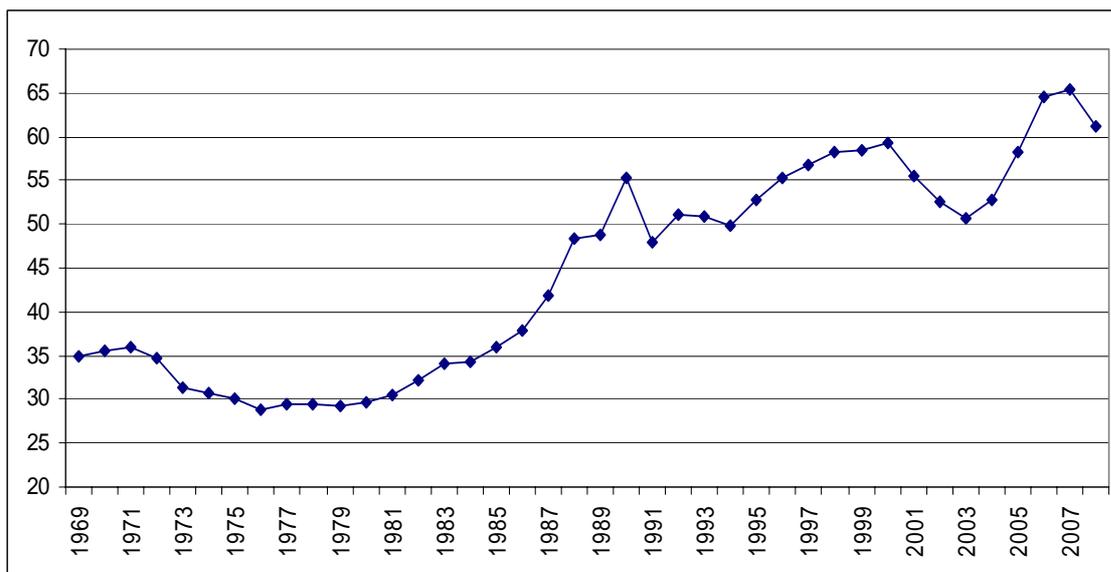


Figure 11. The σ - Convergence index in the North-Eastern region of the US, 1969-2008



8. Conclusion

The description of multi scalar inequalities on the long run does not lead to simple conclusions. Territorial inequalities show different dynamics according to the period, the scale and the space considered. Nevertheless, we can draw several important conclusions from the analyses above, of we clearly distinguish the different periods.

First, for both the US and European space, we observe intense convergence until the 1970's, which marks a clear break on both sides of the Atlantic Ocean. This period of strict regulation has been one of catching up for backward regions at both international level in Europe and national level in the US and within the most developed European nation-states.

Second, after the mid-seventies crisis, the picture becomes far more complex. In Europe, the process of convergence between poor and rich nations has continued resulting in diminishing gaps between European countries. This catching up process has been very clear for Eastern Europe, Ireland and Spain after 1995. This converging process between European nations is visible at regional scale since nearly all regions of the above mentioned countries benefit from these good performances, though at different degree. The situation is not similar in the US where territorial inequalities at regional level (US State compared to NUTS1 level in Europe) are more limited. Indeed, in contrast to Europe, we observe a divergence trend in the US in the two last decades, with higher growth rates in the most prosperous agglomerations, a process generally known as metropolitanization. This process is not visible for Europe as a whole because of diverging national performances but is made clear within European nations, where in general the biggest urban areas – in most cases the capital city – have performed better than the others. This process is more intense in the nineties and seems to slow down or even disappears in the years 2000, except for Eastern and Nordic countries.

9. Bibliography

Amstrong H. (1995), *Trends and Disparities in Regional GDP per capita in the European Union, United States of America and Australia*, Final report, Study Number 94/00/74/017, Commission of European Communities

Capron H. (2000), « Disparités de croissance entre régions européennes : résorption ou amplification ? » in Beine M ?, *Croissance et convergence économique des régions*, De boeck Université, pp 205-234

Graland et al. (2007), *Les disparités régionales et la cohésion : quelles stratégies pour l'avenir ?*, Etude pour le Parlement Européen

URL :

http://www.europarl.europa.eu/meetdocs/2004_2009/documents/dv/200/200705/20070530intraregionaldisparitiesfr.pdf

Les cartes de la cohésion territoriale, Réunion informelle des Ministères de l'Aménagement du territoire et de la politique de cohésion, URL : <http://www.ums-riate.fr/EUFP/index.php>

Vandermotten C., Marissal P., Van Hamme G. (2010), *La production des espaces économiques*, volume 2, Editions de l'ULB