

Spatial trends of towns in Europe: the performance of regions with low degree of urbanisation

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ABSTRACT

The paper contributes to the understanding of socio-spatial trends and urban systems in Europe, with a specific focus on smaller settlements. First, a morphological delimitation of urban settlements as geographical base is used to identify the different settlement structures that characterise regions across Europe. Secondly, an analysis of population and GDP performances of NUTS 3 regions for the 29 countries of the European space (growth rates in 2001-2011) provides evidence of the variety of territorial phenomena that characterise smaller-settlement regions across Europe. Finally, the paper highlights the diversity and complexity of urbanisation structures in Europe and how general trends observed at larger scale are articulated locally according to prevailing structures of urbanisation. It shows the character of 'embeddedness' of smaller settlements within urban systems and territorial structures and how the socio-economic performances of smaller-settlement regions are defined by a combination of macro trends, national contextualisation, local dynamics and regional path dependency.

Key words: spatial pattern, town, Europe, territorial dynamic, ESPON

1. Introduction

Towns, smaller urban areas and villages have always had a central part in the territorial history of Europe. The rich and complex patchwork of inter-linked urban systems configures an 'urban mosaic' which is probably the most characteristic feature of the European space (Bagnasco, 2000; Le Galès & Therborn, 2010). However, dominant epistemological paradigms and pressing policy agendas have left this territorial dimension relatively unexplored, in favour a stronger focus on metropolitan areas – the powerhouses of the European economy – and on rural regions as 'problematic' areas of marginalization. At a time when the 'hype of metropolitanization' is critiqued by several authors (Bell and Jayne, 2009; Brenner and Schmid, 2014; Davidson and Iveson, 2015), this paper intends to redress the academic (and policy) interest for small and medium towns, examining their role in regional development.

Accepting the challenge launched by Bell and Jayne (2009) of ‘thinking big about thinking small’, the paper reflects on socio-spatial trends and urban systems with a specific focus on smaller settlements at the EU scale. Based on (part of) the multi-level analysis performed within the ESPON TOWN project (Servillo et al., 2014), the paper specifically addresses the performance of regions characterised by a prevailing presence of smaller settlements, using two simple indicators that allow comparison across the EU: changes in population and per capita GDP in the time span 2001-2011. It departs from the identification and inventorying of small and medium-sized towns established in the ESPON ‘TOWN’ project - in line with the method developed by the European Commission - DG Regio (Dijkstra and Poelman, 2014) and by OECD (Brezzi et al. 2012) for the identification of urban and metropolitan areas, whose conceptual and operational bases are laid down elsewhere in this special issue (Russo et. al., this special issue; see also Servillo et. al. 2014). It then ‘scales up’ the spatial analysis of urbanisation at the regional level to underline the role of towns and smaller settlements in general regional trends.

Thus the paper touches upon some core issues in the regional and urban studies debate.

Firstly, it highlights the diversity and complexity of urbanisation structures in Europe, beyond the urban/rural polarity which has catalysed so far most of the attention of regional scientists and, especially, policymakers. These features reflect a combination of historical (mostly national, but also regional) configurations of settlement structures – for instance dictated by administrative histories and the functional roles of smaller settlements – and regional nuances in the contemporary evolution of urban systems, which reinforces the assumption of inadequacy of ‘one size fits all’ programs when it comes to addressing issues such as territorial cohesion and regional gaps.

Secondly, the analysis of the performances of regions characterised by low degree of urbanisation provides new insights on how urbanisation patterns and contexts may matter or, in other words, on how general trends observed at the European level are articulated locally according to prevailing structures of urbanisation. Macro- and meso-trends can be detected in performance of clusters of regions, in which settlement structures and national specificities show the effect of different factors, including some specific national policies. At the same time, suburbanisation – metropolitan dynamics can be read across Europe, with diversified spatial processes.

Finally, these evidences allows to reflect on the challenge posed by the Introductory paper (Servillo et al., this special issue), in which the approach to small urban areas in urban and regional studies is seen as in between two opponent epistemologies: on the one hand, a ‘regional determinist’ perspective, in which smaller urban areas are assimilated to their wider regional context; on the other hand, a ‘territorial autonomy’ perspective, in which the ‘urban area’ is seen as an independent territorial element whose socio-economic dynamics can be understood on its own, characterised as it is by an independent capacity to develop its own socio-spatial trajectory. The evidence from this research reflect, as a matter of fact, a strong character of ‘embeddedness’ of smaller settlements within urban systems and territorial structures defined by macro trends, national contextualisation, local dynamics and regional path dependency. .

In order to address the points above, the paper is structured as follows. First, it situates this research in the existing debate on urbanisation and regional performance. At the same time, it spots the gaps which this paper intends to fill. Second, it briefly presents the methodological strategy to overcome technical problems in data comparability, framed by the research approach of the TOWN project. Third, it shows how the combination of different geographies leads to a classification of NUTS3 region according to population settlement classes, which provide some insights on the different aspects of the urban structure in Europe. Fourth, it present the findings of an analysis based on population and per capita GDP changes over the period 2001-2011 compared to EU and national averages, focusing on regions characterised by a prevalence of smaller settlements. Maps and tables will support the reading of spatial trends concerning population and GDP variations. Finally, the conclusions summarise the most important insights from the material presented and the inevitable limitations of a pan-European analysis, bringing to the fore the needs for further future research.

2. Perspectives on small and medium sized towns

Attention to smaller urban areas is growing both in academic research (e.g. Bell and Jayne, 2009; Bunnell and Maringanti, 2010) and in policy fora (e.g. the policy document supported by the EU Latvian presidency: HESPI, EUKN, 2015). In spite of this, though, there is a dearth of research that takes a comparative perspective on the role and performance of towns across Europe, possibly orienting future policy initiatives. This is arguably the result of, on one hand, the overwhelming focus on larger urban areas, dictated by the 'urban studies orthodoxy obsessed by the biggest scale of cities' (Bell & Jayne, 2009: 684); and, on the other, of problems of data comparability which have constrained socio-economic profiling and dynamic analysis of the smaller urban size at pan-EU level. The few available pieces of research on urban performances beyond the level of first or second-tier cities have limited comparability due to their national or thematic scope (van Oort et al., 2014; Dijkstra et al, 2013; Capel, 2009), and tend to focus on some specific trends or territorial issues.

If studies of smaller settlements are rare, several insights and related different interpretative approaches can be detected in the wider regional studies literature which point at the relevance of this 'object of study'. They can be articulated around two main perspectives: firstly, one that encompasses several conceptual and analytical approaches to the understanding of small urban areas and their role in urban networks, in particular with regard to their relationship with larger urban cores; secondly, the analysis of specific characteristics of urban cases, and consequently also to smaller settlements.

Concerning the first perspective, there is a consistent literature dedicated to the conceptualisation and the analysis of urban polycentric structures and of the interconnection between urban areas. Within this broader view, towns and smaller urban areas are conceived as territorial features with a fundamental role –albeit generally addressed as a counterpoint of dominant urban cores within metropolitan regions. This perspective includes both the ontological investigation of the concept of polycentrism together with its normative political assumptions, and the definition of its analytical dimensions. In particular since its endorsement as one of the key EU objectives for territorial balance in the ESDP (EC-CSD, 1999), 'polycentrism' has become a dominant discourse in policy and academy (Davoudi, 2003), driving much of the academic research of 'spatial issues' (Dühr, 2005). This has led to a general recognition of smaller settlements as EU policy issue although in a relatively vague way (EC, 2007, 2008 and 2011 for examples of how the urban dimension is addressed at the EU).

In this framework, a specific attention has been paid to smaller urban areas interpreted as key territorial elements in sub-urbanisation dynamics. Their supportive role to larger urban regions and metropolitan areas (Burger et al, 2014; Bellet and Llop, 2004), and the threat of being overtaken by overgrowing metropolitan processes with deep socio-economic impacts are analytical dimensions addressed in studies that focus mainly on specific case studies.

In connection with the broader topic of the interrelatedness of urban areas, on the one hand a distinguished research agenda has focused on smaller urban areas in relation to the 'borrowing-size effect' (Meijers et al., 2015). The conceptual and analytical challenge of these studies lays on the understanding of the effects on smaller cities induced by the (physical and/or functional) proximity with larger urban areas. The assumption, suggestive but difficult to be measured, is that smaller urban areas might over-perform in terms of economic capacity, functions and presence of services due to synergies and shared catchment areas.

On the other hand, the adverse socio-economic trends interesting smaller urban areas are picked by other scientific and policy efforts, which focus on towns as areas under threat due to the drainage of population and economic activities. This literature includes insights on shrinking urban areas (Bernt, 2009; Martinez-Fernandez, 2012), on regional-economic studies of urban concentrations of economic factors, as well as studies on specific territorial features, such as market towns (Powe et al., 2009), and remote or mountain areas (Perlik et al, 2001; Zanon, 2014). Also these analyses and policy approaches are mostly referred to few cases and are overtly contingent on their national context.

The second perspective is less focused on the relationship within urban systems but rather on the specific characteristics of smaller urban areas, such as their socio-economic and political economy features (e.g. the tourism and cultural economy as key economic drivers – see Knox and Mayer, 2012), their capacity to match

global pressures with peculiar local dynamics based on 'place idiosyncrasy' (Lorentzen and van Heur, 2013), or their capacity to activate strategic planning initiatives (Elisei, 2015). These approaches adopt an epistemological focus on the smaller urban size, and offer the possibility to investigate the fine-grained structure of economic, social and policy dynamics of specific urban areas.

Finally, and somehow in between the two perspectives identified above, it is worth mentioning the topic of inner peripheral areas, which is gaining momentum at EU level. Emphasised in particular by the Italian EU presidency in 2015, and strongly connected to a national research and policy agenda (e.g. Barca et al., 2014), it focuses on areas characterised by a low degree of urbanisation and a lack of physical access to services of general interest, which is seen as a dimension of spatial injustice and an obstacle in the achievement of territorial cohesion. Here the interest is both on the identification of conditions of peripherality (or the drivers of marginalisation dynamics), and on the singular strategies to overcome such critical conditions.

These perspectives in the academic and policy literature are an important background to this paper, to which it intends to contribute with a pan-EU analysis of the socio-economic dynamics of regions characterised by smaller settlements. Theories and assumptions of background studies are used as interpretative tools when reading the evidences of territorial phenomena in our findings.

3. Methodological approach

This work adheres to a long tradition of urban studies that mainly adopts a demographic approach, followed by several national statistical institutes, to classify 'urban types' (Schnore, 1964; Bloom et al., 2010; Montgomery, 2010). The paper focuses on the regional level and its main attempt is to associate certain regional patterns of development or 'performance' with underlying urban structures, with the obvious degree of approximation when it comes to classify NUTS3 regions according to 'prevailing' population settlement types.

Using the DG Regio and OECD method presented in the document 'The New Degree of Urbanisation' (DEGURBA) (Dijkstra and Poelman, 2014), the ESPON 'TOWN' research project has identified morphological urban areas across the ESPON area (27 member-states of the EU plus Switzerland, Norway, Iceland and Lichtenstein). They are determined aggregating contiguous grid cells of 1x1 km of more than 300 inhabitants in urban morphological polygons, which are then classified according to arbitrary population size and density thresholds. It uses as a spatial base unit a database of more than 2,000,000 grid cells of 1 km² produced by GEOSTAT and the associated population data in year 2006.

The presented analysis picked all urban settlements above a threshold of 300 inh/sq.km, and classified them in three broad groups of High Density Urban Clusters (HDUC), Small and Medium Sized Towns (SMST), and Very Small Towns (VST) according to arbitrary thresholds of population size and density¹:

- HDUC: population > 50.000 inhabitants and density > 1.500 inh/sq.km.
- SMST: population between 5.000 and 50.000 inh; population > 50.000 and density < 1.500 inh/sq.km.
- VST: population < 5.000 and density > 300 inh/sq.km.

The mapping of such urban settlement classes configured an 'objective geography of the urban' which allows visual and even analytical inspection of the prevailing territorial structures of urbanisation across the European space. This classification (and the related mapping) is a first step facilitating an analysis of how the grid-based geography of polygons of urban settlements maps over the established NUTS3 geography. However, the procedure of 'scaling up' the information on urban settlement polygons (generally, the population size and density taken by polygons in different classes) to administrative levels involves a rather complex process of estimation, which has been subject to an inevitable margin of error².

After having been characterised and classified according to the prevailing type of settlements this regional typology has been cross-tabulated with 'performance' indicators. The identification of regions that are predominantly characterised by smaller settlements cannot depict the precise role of an individual SMST. However, the analysis of the general performance of these regions (measured in the time span of the first

decade of 2000s) indicates the socio-economic changes in smaller urban settlements areas as opposed to regions that are characterised by different degrees of urbanisation.

4. Urban settlements in Europe: typologies and territorial trends

Figure 1 presents a regional typology that classifies regions according to their prevailing settlement structures, i.e. the class of urban settlements where the relative majority of the population lives, among SMST, HDUC, VST or other settlements. The underlying population count shows that in a 'representative' NUTS3 region, taking the average values across the ESPON area, HDUC, SMST, VST and other residual settlements will respectively host the 31.7%, 28.0%, 19.5%, and 20.8% of the population; that 'average' region will therefore be classified as a region with 'HDUC as predominant population settlement type'.

In spite of the obvious approximated character of this classification (we only know which settlement type prevails in population terms, neither the population distribution nor its territorial structure), it provides a broad illustration of the diversity of population structures in different regions across the European space. Thus, it is possible to distinguish three main types of prevailing urban settlement structures at national level:

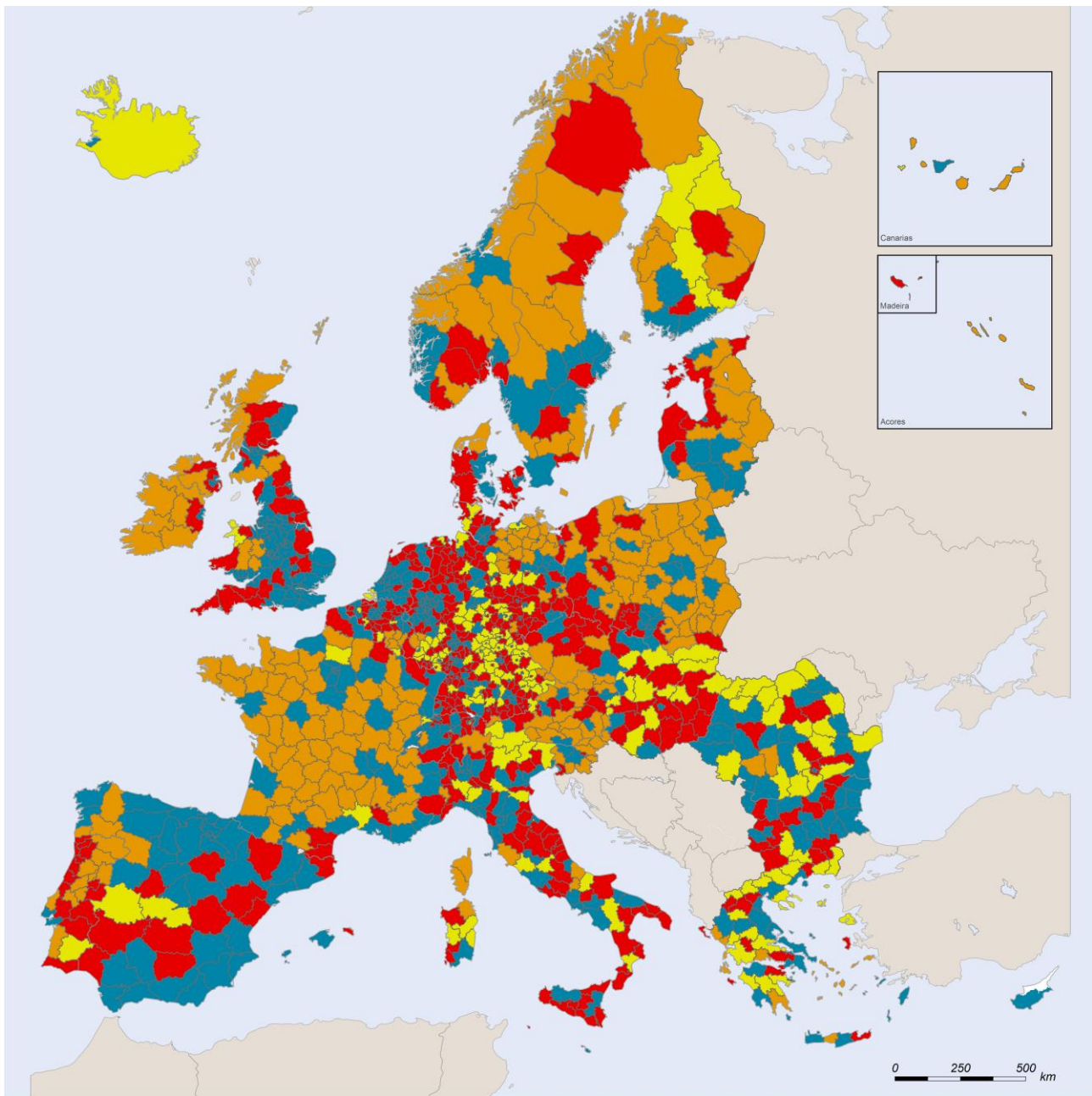
- Countries with a clear prevalence of high-density population clusters as the 'modal' type of urban settlement in their NUTS3 regions, as Belgium, Switzerland, Greece, the Netherlands, Spain, the UK, as well as smaller island states as Malta and Cyprus;
- Countries with an overrepresentation of population living in smaller settlements, like France, Hungary, Ireland, Lithuania, Luxembourg, Norway and Slovakia;
- Countries showing a more balanced distribution of population between different urban settlement types, such as Austria, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, Italy, Latvia, Poland, Portugal, Romania, Sweden and Slovenia.

The first group includes both countries that have strongly polarised settlement structures with a prevalence of metropolitan areas (e.g. Switzerland, UK, and the Mediterranean islands) and countries with large portions of territory characterised by high-medium density sprawl (as in the case of the Flemish part of Belgium and many Mediterranean coastal regions). The second group encompasses those countries in which the presence of large portions of territory characterized by smaller population settlements overtakes the few larger urban areas. This is, remarkably, the case of France and its historically centralized urban system. Finally, the third category includes those EU countries that present diversified settlement structures.

The map hints at different geographical types as well as at the historical circumstances of the urbanisation processes characterising each country, encased in specific institutional frameworks (Antrop, 2000; Jordan-Bychkov & Bychkova Jordan, 2002; Pumain, 2000). In a way, it confirms the assumption that the process of nation building in Europe can be seen as a history of the subordination of cities and their absorption into national urban hierarchies (Harding & Blokland, 2014). This can be seen in the different structures in neighbouring countries such as France, with its prevailing mono-centricity, and other countries with an historical polycentric structure, such as Italy and Germany. At the same time, institutional arrangements, different land use policy and uneven growth pressure on settlements may induce divergent spatial developments (Vasanen, 2012), also within the same country, such in the case of Belgium, with its clear difference in urban structures between Flanders and Wallonia.

Such nuances can also be detected in regions that have a similar urban structure that pre-date modern national states and that have been disjoined by the definition of administrative borders. It is the case of most cross-border areas between Germany and Poland, and between Austria, Czech Republic, Slovakia, and Hungary. However, the pre-National State territorial patterns has (re)emerged in recent decades due to the progressive weakening of national borders and the effects of increasing trans-border flows and activities. It is the case of the central areas of Europe (between France, Belgium and Germany), the eastern region through the former border between the EU-15 countries and ECE such as the German-Polish one, and in the polycentric systems between Vienna, Bratislava and Brno.

Figure 1 - Regional typology according to prevailing population settlement types



Prevailing population settlement type

- High Density Urban Clusters as the prevailing type of population settlement
- Small and Medium Towns as the prevailing type of population settlement
- Very Small Towns as the prevailing type of population settlement
- Other population settlements as prevailing type
- NO DATA

Thus urbanisation structures reflect a combination of historical processes that have variously affected most European countries over the last 100-200 years, as well as recurrent features of small and medium settlements that can be seen as characteristic of the European space as a whole. Among the former, we devise both country-specific patterns and others that are trans-national in nature, hinting at processes of

industrialisation in the 19th century and of suburbanisation in the 20th century. For much of this period settlements located in the proximity of national borders experienced the effects of a peripheral location.

Among the latter, more general patterns and constraints highlight a specific role of smaller settlements in areas (regions across the Alps, in the interior of France, in North-Eastern Spain, and in Eastern Europe), in which the bulk of the population is rather dispersed in 'very small towns' (with less than 5.000 residents), or in 'other settlement types' (areas characterised by sparse settlements that do not reach the 300 inhabitants per km² threshold). Also the central region of Europe, partly overlapping with the 'Pentagon', which appears as the most densely populated area of the European space, maintains a strong base of SMSTs. This region covers an area that stretches from the South of England across the Benelux countries and West of Germany to North and North-East Italy. At the same time, other important clusters of SMSTs (and conversely of 'red' regional types in Figure 1) are found in the industrial belt of South-Eastern Germany and Poland, and throughout the Western Mediterranean arc from Spain to Italy, behind the coastal regions strongly affected by high density urban sprawl that changed size and morphology of urban areas.

5. Regional performances

Regions with different degrees of urbanisation

In order to assess the performance of regions characterised by different population settlement structures, and specifically those which over-represents the 'smaller urban size' versus those in which the population is mainly concentrated in HDUC, we introduce a more simplified classification, which just looks at groups of regions that can be unequivocally characterised in terms of one of these two 'typical' settlement structures. Thus we can distinguish two groups of regions with unequivocally different 'degrees of urbanisation', and one with an intermediate one:

- Regions where **less than the 30% of the population lives in HDUC**; thus, more that 70% of population lives in smaller population settlements, including – but not exclusively – SMST;
- Regions where **more than the 70% of the population lives in HDUC**, thus characterised as featuring a high degree of urbanisation;
- Regions where the **HDUC population is between 30% and 70%** - thus regions that do not have a clear-cut population settlement structure, preventing further considerations on the association between settlement structure and regional performance.

This classification, in other words, allows us to focus on regions that are more likely to be characterised by a prevalence of smaller settlements, so as to get more insight on geographical and socioeconomic types that are more likely to be associated with this kind of population structure, and eventually assess their performance comparing it with that of regions that are characterised by a higher degree of urbanisation.

As shown in **¡Error! No se encuentra el origen de la referencia.**, the majority of NUTS3 regions are included in the category of having less than the 30% of the population in 2006 living in high-density urban clusters. The distribution per country illustrates how many of the NUTS3 regions within that country have a population structure fitting the three classes introduced here; only in Cyprus, Spain, Lithuania, the Netherlands and the UK most of the NUTS3 regions feature a higher degree of urbanisation. **¡Error! No se encuentra el origen de la referencia.** maps out this regional classification. We purposefully highlight Class 1 regions characterised by a prevalence of smaller population settlements.

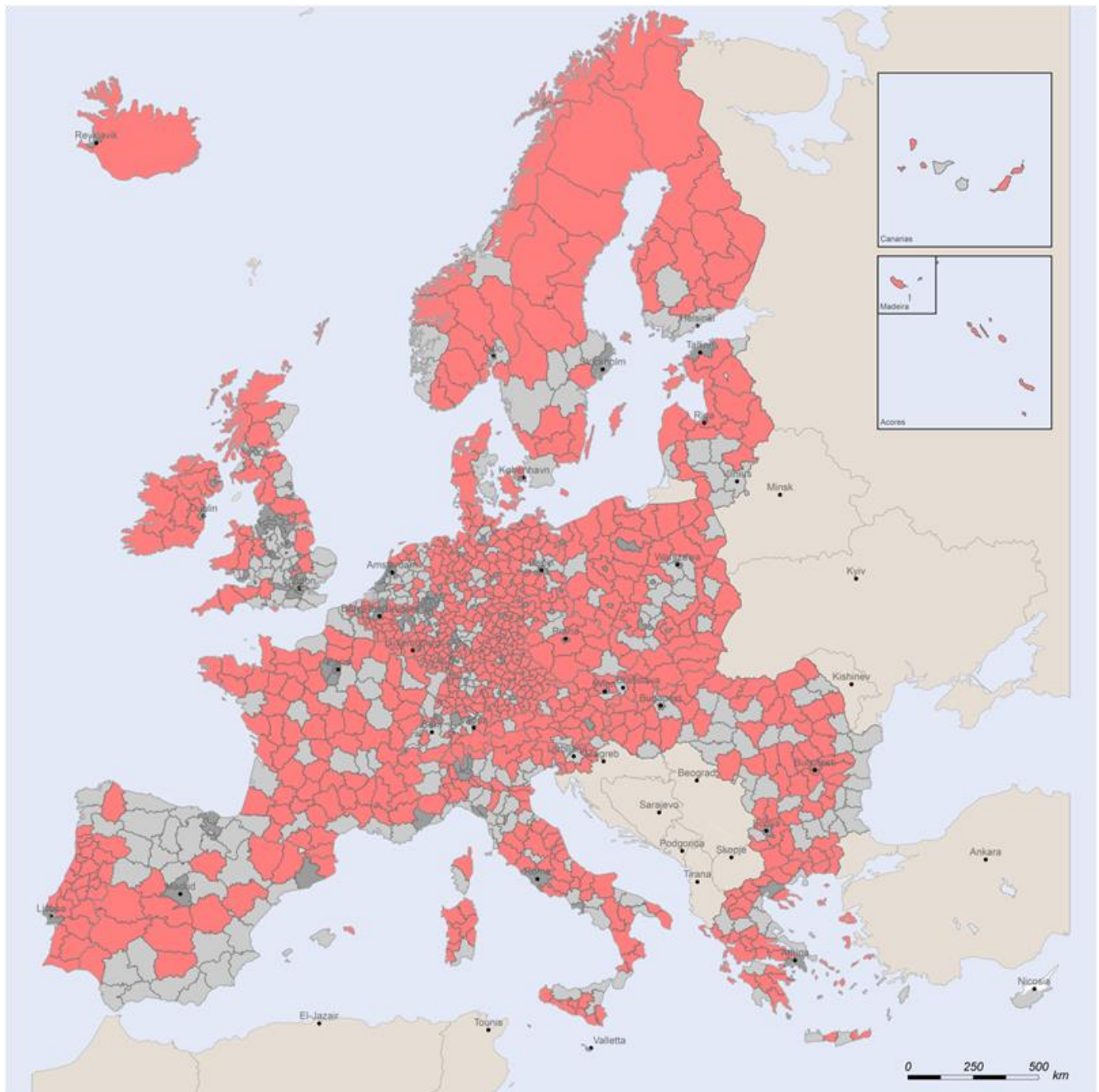
When compared to **¡Error! No se encuentra el origen de la referencia.**, the class of regions characterised by a lower degree of urbanisation almost replicates the three types of regions in which the prevailing population settlement was not of the HDUC type (red, yellow and orange types in **¡Error! No se encuentra el origen de la referencia.**); however the aggregation of these categories offers the

opportunity to analyse their relative performance and compare that with that of regions characterised by a high degree of urbanisation. Of course, it is also evident the approximation of this aggregation³.

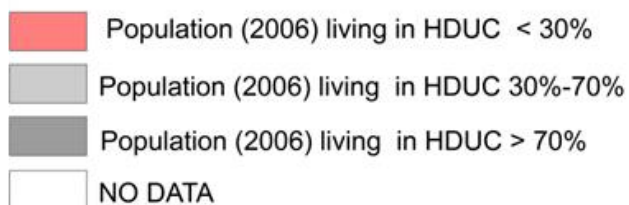
Table 1 - Regional typology based on degree of urbanisation

Country	Predominant settlement type in terms of population hosted						
	Pop in HDUC 2006 < 30%		Pop 2006 in HDUC 30%-70%		Pop 2006 in HDUC > 70%		Total
	Count	Country %	Count	Country %	Count	Country %	Count
AT	27	77.1%	6	17.1%	2	5.7%	35
BE	31	70.5%	7	15.9%	6	13.6%	44
BG	14	50.0%	13	46.4%	1	3.6%	28
CH	13	50.0%	9	34.6%	4	15.4%	26
CY	0	.0%	1	100.0%	0	.0%	1
CZ	10	71.4%	3	21.4%	1	7.1%	14
DE	260	63.1%	50	12.1%	102	24.8%	412
DK	6	54.5%	3	27.3%	2	18.2%	11
EE	3	60.0%	1	20.0%	1	20.0%	5
EL	37	72.5%	12	23.5%	2	3.9%	51
ES	20	33.9%	33	55.9%	6	10.2%	59
FI	15	78.9%	4	21.1%	0	.0%	19
FR	63	65.6%	25	26.0%	8	8.3%	96
HU	15	75.0%	4	20.0%	1	5.0%	20
IE	7	87.5%	0	.0%	1	12.5%	8
IS	1	50.0%	0	.0%	1	50.0%	2
IT	62	56.4%	37	33.6%	11	10.0%	110
LI	1	100.0%	0	.0%	0	.0%	1
LT	4	40.0%	6	60.0%	0	.0%	10
LU	1	100.0%	0	.0%	0	.0%	1
LV	5	83.3%	0	.0%	1	16.7%	6
MT	1	50.0%	0	.0%	1	50.0%	2
NL	11	27.5%	18	45.0%	11	27.5%	40
NO	14	73.7%	4	21.1%	1	5.3%	19
PL	40	60.6%	16	24.2%	10	15.2%	66
PT	28	93.3%	0	.0%	2	6.7%	30
RO	26	61.9%	15	35.7%	1	2.4%	42
SE	14	66.7%	6	28.6%	1	4.8%	21
SI	9	75.0%	3	25.0%	0	.0%	12
SK	7	87.5%	1	12.5%	0	.0%	8
UK	33	23.7%	38	27.3%	68	48.9%	139
ESPON SPACE	778	58,1	315	23,5	245	18,3	1338

Figure 2 - NUTS3 Typology based on degree of urbanisation



Typology based on degree of urbanisation



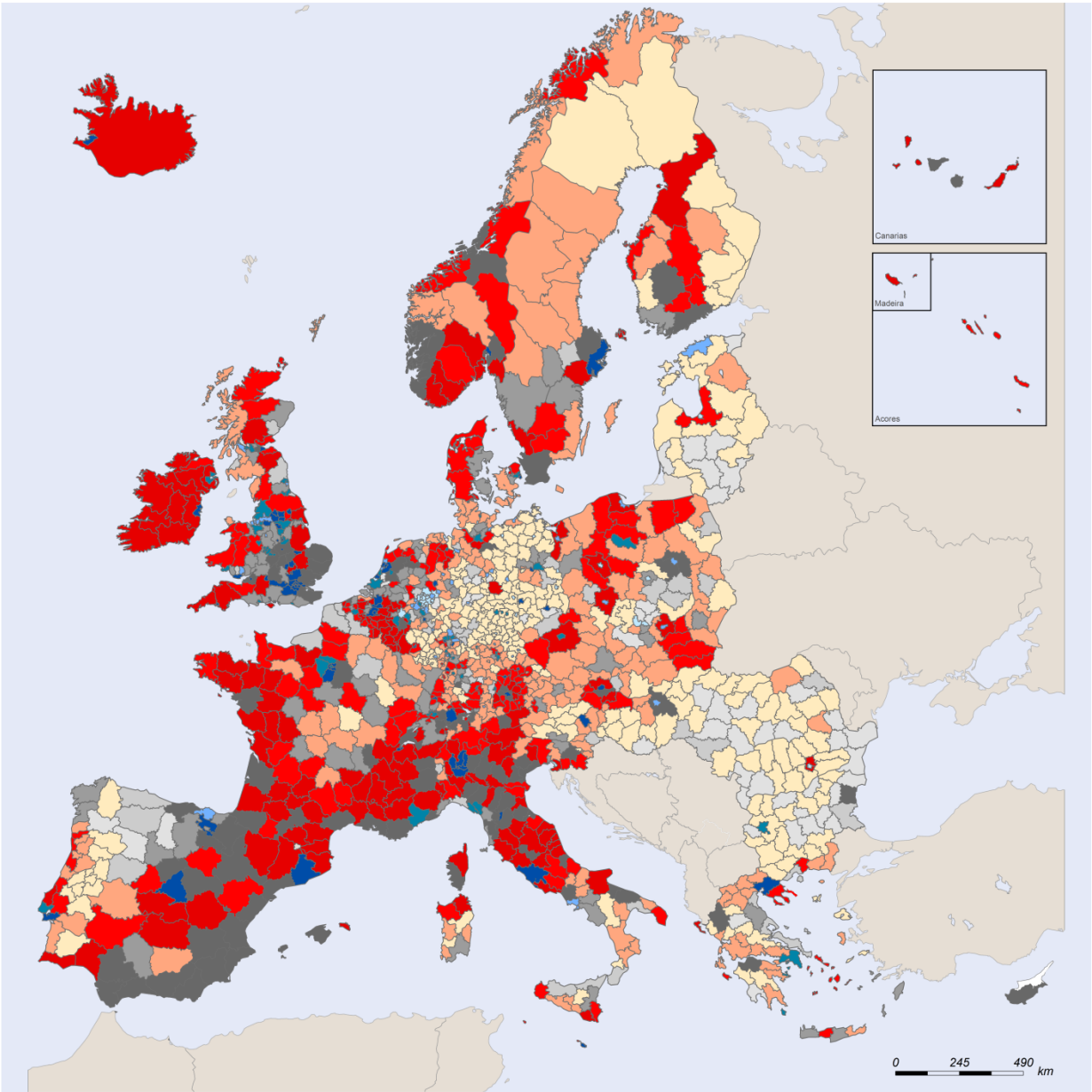
The next step in this analysis focuses on the performance in terms of growth rates of population and per capita GDP in regions characterised by different 'degrees of urbanisation' as set out in the typology of Figure 2. The growth rates are generally calculated over the 2001-2011 period, and p.c. GDP is considered in current market prices⁴. Performances are expressed both in terms of deviations from the global average, which

captures macro-trends across the ESPON area, and in terms of deviations from the national average, which puts in evidence the local trends isolating them from the wider regional effects.

Socio-economic performance at the EU scale

The regional scores of population growth across the wider EU context hints at the well-known trend of a shift of population from the East and the North to South and the West of Europe (or high out-migration rate of the former, and high in-migration rate of the latter) having taken place during the 2000 decade, which is illustrated in the map of **¡Error! No se encuentra el origen de la referencia..** This pattern can be further explained with the enlargement of the EU to the east and the contextual extension of the Schengen ‘free mobility’ area, and with the effects of external migration mainly from the Northern African and Middle-Eastern countries. The few exceptions regard those areas affected by structural economic weakness such as the Italian *Mezzogiorno*. The maps captures the extreme attractiveness of the European ‘sunny belt’ in the first part of the 2000s for a wide range of migrant collectives (Russo *et al.* 2012) which remains relevant despite the counter-trend in the last part of the decade due to the economic downturn that hit most of the regions which had previously over-performed in terms of attraction of migrants and workers (Smith & Atkinson, 2011; Russo et al., 2014).

Figure 3 – Population growth scores in regional types by degree of urbanisation (dev. from EU average)



Typology based on population change rates 2001-2011 as a difference from the EU-27 average

		DEGREE OF URBANISATION TYPOLOGY (2006)		
		Pop. living in HDUC <30% of NUTS3 population	Pop. Living in HDUC >30% < 70% of NUTS3 population	Pop. Living in HDUC >70%of NUTS3 population
POPULATION PERFORMANCE (growth of population 2001-2010 compared to EU average)*	Very low (1st q.le of distribution)			
	Low (2nd q.le of distribution)			
	High (3rd q.le of distribution)			
	Very High (4th q.le of distribution)			
	Pop. Growth data not available			

* Population growth rates based on change rate between 2001 and 2011, as difference from change in same indicator for the whole EU27. Whenever either of these data are not available, most recent and older available year within the 2001-2011 range have been used.

However this map allows going beyond such general trends, differentiating by regions with different ‘degrees of urbanisation’. Even if population appears to have grown more in more urbanised regions in the 2000 decade (**¡Error! No se encuentra el origen de la referencia.**), it cannot be argued that this uneven population dynamics indicates a wider trend of population shift from smaller settlements to larger urban areas. On the contrary, it seems that at least in a large part of the central and southern Europe, regions characterised by a lower degree of urbanisation have performed well in retaining or attracting population. In particular, they had a decidedly important role in the Mediterranean Arc, especially in coastal and inland regions in Spain, France, Greece and Italy.

Table 2 – Average population growth of NUTS3 regions as classified by degree of urbanisation, in EU and national contexts

Typology based on degree of urbanisation	Population growth in NUTS3, 2001-2011 (mean)	Dev. of population growth rates from EU-27 average (mean)	Dev. of population growth rates from national average (mean)
Pop in HDUC 2006 < 30%	0.55%	-2.92%	-1.55%
Pop 2006 in HDUC 30%-70%	3.84%	0.40%	0.64%
Pop 2006 in HDUC > 70%	3.38%	-0.02%	0.74%
TOTAL	1.84%	-1.61%	-0.62%

In general, Table 2 shows how regions characterised by a lower degree of urbanisation grew significantly less than the two other groups, but this can be attributed to the weight of the negative impact of depopulation that occurred in the Eastern countries, which were strongly characterised by depopulation in rural areas and regions with smaller settlements, except of the very high results of the regions surrounding larger urban areas, as can be seen in **¡Error! No se encuentra el origen de la referencia.**

However, the distribution of per capita GDP growth rates presents significantly different insights. In line with what reported in **¡Error! No se encuentra el origen de la referencia.**, which provides the main average values across the ESPON area, it now appears that less urbanised regions have grown in 2001-2011 on average more than those with a high degree of urbanisation (though less than regions in the ‘intermediate’ class). As will be seen later, this is the case both in terms of deviations from the EU average and within countries.

Table 3 – Average per capita GDP growth of NUTS3 regions as classified by degree of urbanisation, in EU and national contexts

Typology based on degree of urbanisation	P.c. GDP growth in NUTS3, 2001-2011 (mean)	Dev. of P.c. GDP growth rates from EU-27 average (mean)	Dev. of P.c. GDP growth rates from national average (mean)
Pop in HDUC 2006 < 30%	41.63%	31.71%	1.38%
Pop 2006 in HDUC 30%-70%	42.46%	32.86%	1.13%
Pop 2006 in HDUC > 70%	20.74%	11.18%	-3.02%
TOTAL	38.00%	28.22%	0.51%

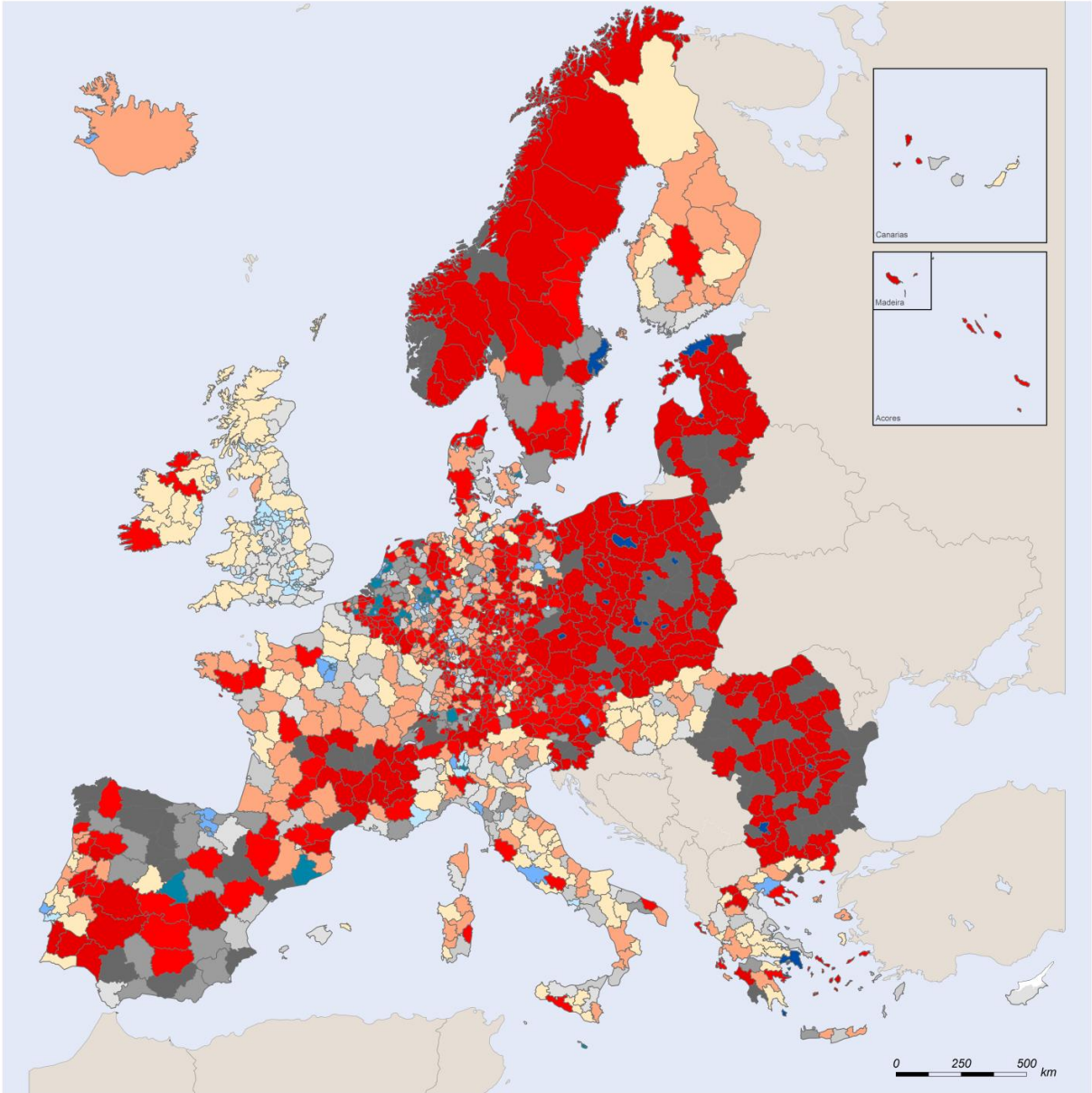
This information, together with the fact that more urbanised regions have gained population relatively to the less urbanised ones, may be indicating that the former regional types have lost some of their wealth to the latter, both in general terms and at the local scale as will be shown later. In other words, it can be deduced

that de-urbanisation has mostly concerned the wealthier classes, while the less wealthy strata of population are more likely to have engaged in inner and trans-regional migration from less to more urbanised regions.

In terms of spatial distribution (**¡Error! No se encuentra el origen de la referencia.**), the highest growth rates of p.c. GDP during the period considered are registered in Eastern Europe and the most negative in Western Europe – except those traditional ‘lagging-behind’ regions, confirming a scenario of convergence following the situation at the beginning of the 2000s, characterised by large income gaps between the core and the periphery. Nevertheless, some core areas of the ‘old Europe’ performed above the EU average (Benelux, western-south Germany, Austria, and South France).

Moreover, this general trend can be articulated further by looking at the regional types with degrees of urbanisation, disclosing remarkable ‘deviations’. Firstly, in three macro-regions at the EU core, like western Germany, Southern France, and Austria, less urbanised regions have grown significantly more than others in this period, possibly indicating the importance of smaller urban areas within ‘diffuse’ urban polycentric structures, which have done particularly well. Secondly, also some regions with a lower urbanisation degree at the periphery (Portugal, Sweden, Norway) have been over-performing, suggesting a positive impact of national policies to support weak regional economies in the south (through EU structural funds) or to policy and fiscal support to ultra-peripheral regions in the Nordic countries.

Figure 4 – Per capita GDP growth scores in regional types by degree of urbanisation (dev. from EU average)



Typology based on p.c. GDP change rates 2001-2011 as a difference from the EU-27 average

P.C. GDP PERFORMANCE (growth of per capita GDP 2001-2011 compared to EU average)*		Pop. living in HDUC <30% of NUTS3 population	Pop. Living in HDUC >30% < 70% of NUTS3 population	Pop. Living in HDUC >70% of NUTS3 population
	Very low (1st q.le of distribution)			
	Low (2nd q.le of distribution)			
	High (3rd q.le of distribution)			
	Very High (4th q.le of distribution)			
	GDP Growth data not available			

* Per capita GDP growth rates based on change of per capita GDP in current market prices between 2001 and 2011, as difference from change in same indicator for the whole EU27. Whenever either of these data are not available, most recent and older available year within the 2001-2011 range have been used and compared to EU change rate in the same period.

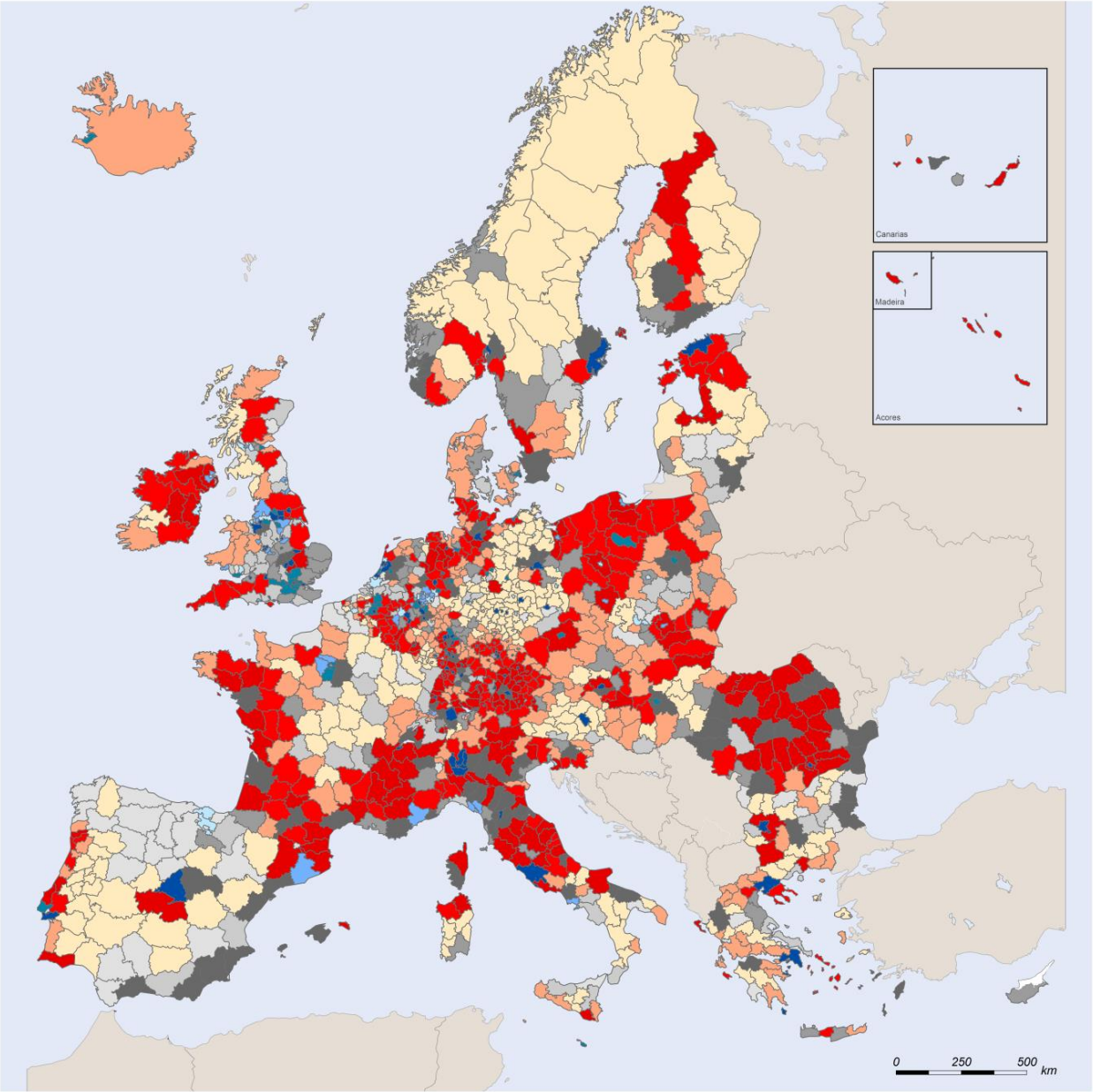
National contextualisation of regional trends

The analysis becomes richer when regional variations are compared to national averages, as in **¡Error! No se encuentra el origen de la referencia.** and **¡Error! No se encuentra el origen de la referencia.**. This perspective takes into consideration an element of contextualization, highlighting phenomena occurring within countries, eliminating the 'country effect' and picking spatial differences in more detail.

In terms of smaller settlements, there are larger areas with a strong capacity to retain population or even being growth poles. Important hot spots are found in France, where regions characterised by lower degrees of urbanisation in the south-west and around second-tier cities score significantly better than regions of the same category in the centre. Similar trends are registered in a vast stretch from southern Germany to Northern-Central Italy, in Eastern England, in the East of Ireland around the Dublin region, in northern Poland, in Finland, and in the central regions of Romania. Balancing this, cold spots – where regions with low degrees of urbanisation have lost population significantly – are observed in the West of the Iberian Peninsula, in central France, Western Austria, Eastern Germany, Western Latvia, and Bulgaria. On the contrary, Austria, Bulgaria, Denmark, Greece, Norway and Sweden the population dynamics favours more significantly more urbanised areas.

Interesting sub-macro phenomena can be read in these clusters of regions. For instance, Portugal, Spain and France show a trend of polarization with growth of their capital region and urbanised regions on the coast and a general depopulation of central regions. This shift of population toward the Western-South coasts in the Iberian Peninsula probably indicates the booming role of tourism and real-estate-related processes. Moreover, the growth of population in regions characterised by small settlements in the French western and southern coasts is substantial, which suggests that an interesting process is going on in France, possibly related to decentralization policies carried out in France in recent years and general positive trend of Southern France around the pole of Lyon.

Figure 5 – Population growth scores in regional types by degree of urbanisation (dev. from nat. average)



Typology based on population change rates 2001-2011 as a difference from the national (NUTS0) average

POPULATION PERFORMANCE (growth of population 2001-2011 compared to NATIONAL average)*		DEGREE OF URBANISATION TYPOLOGY (2006)		
		Pop. living in HDUC <30% of NUTS3 population	Pop. Living in HDUC >30% < 70% of NUTS3 population	Pop. Living in HDUC >70%of NUTS3 population
GDP Growth data not available				

* Population growth rates based on change rate between 2001 and 2011 , as difference from average change rate in same indicator for all NUTS3 regions in the country. Whenever either of these data are not available, most recent and older available year within the 2001-2011 range have been used. Whenever either of these data are not available, most recent and older available year within the 2001-2011 range have been used.

The core of Europe, consisting of Belgium, western Germany and the Italian north-eastern regions, shows a general growth both of the strongly urbanized regions and of those characterized by a lower degree of urbanisation, with few and patchy exceptions. It can be argued that the general growth trend and suburbanisation processes have strongly affected the regions with smaller settlements, and it indicates a stronger role of the polycentric structure of the urban systems in these areas. However, in Italy, the traditional long-term polarised trend between population growth in the North and depopulation in the south seems more prominent than a distinction between degrees of urbanisation.

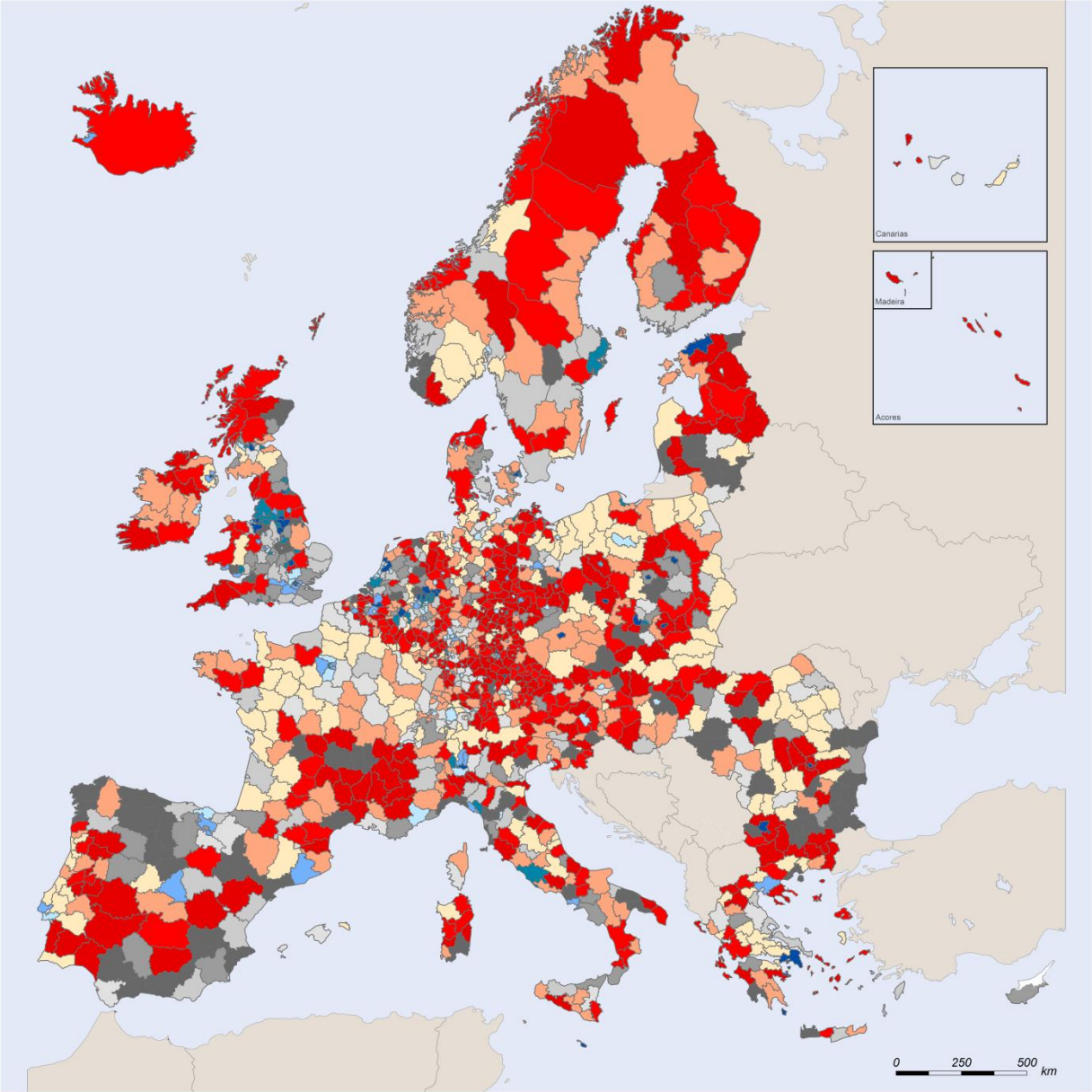
On the contrary, a strong metropolisation process has taken place in Germany's eastern regions and in the Scandinavian countries, where an important shift of population seems to have been taking place from regions with smaller settlements toward the capital and other larger urban areas. Here the polarising role of the larger urban areas seems to be determinant in attracting population from less urbanised regions but at the same time to produce suburbanisation processes of the surrounding settlements.

The eastern European regions present a nuanced picture. While a general declining trend of population except for the metropolitan areas is clear, the picture of population growth in comparison with national averages shows the importance of some regions with low degree of urbanisation. A remarkable difference is noticeable in relation to the distance to large urban agglomerations. There is a clear interdependency between metropolitan areas and more urbanised urban regions (e.g. Riga, Warsaw, Cracow, Prague, Brno, Bratislava, Budapest, Bucharest, Sofia) with their neighbourhoods characterised by smaller settlements, at a scale that goes much beyond that of 'functional regions'. Concerning these Eastern metropolitan areas, it is also necessary to mention that in most of the cases the NUTS3 administrative boundary between the core urban areas and the first belt of suburban settlements was artificially drawn for the management of the EU structural funds. Hence, the regional differences in the map are able to show the interconnected performances between the core urban area and the suburbs of the larger metropolitan regions.

All in all, there is a general evidence of strong suburbanisation dynamics around main urban poles, in particular the capital cities. The regions with smaller settlements around metropolitan areas seem the most well-performing, indicating there wide processes of suburbanisation and even sub-regionalisation. This process is predominantly evident in the surrounding of Eastern metropolitan areas, e.g. Prague, Krakow, and Bucharest, but also Madrid, Paris, London, Munich and other metropolitan areas of EU 15 show similar trend, albeit more variegated.

These phenomena suggest a combination of overall urban polarisation, suburbanisation trends of metropolitan areas and forms of borrowing size effects (Meijers & Burger, 2010). The presence of saturation effects and the emergence of negative externalities in the metropolitan areas in terms of quality and accessibility of space for further growth has probably determined differentiated (and contextualised) delocalization trends of firms and population, supported by the enhancement of mobility systems (mainly on road). Moreover, it is possible that the activities rooted in areas characterized by smaller settlements have been able to resist better and strengthen their autonomy in those areas in which networks with bigger urban areas have been established. It is a sort of long wave of 'borrowing-size' effects that affect towns neighbouring bigger urban areas, do to which they manage to achieve a virtual critical mass in terms of accessibility to services and other urban characteristics.

Figure 6 - P.c. GDP growth scores in regional types by degree of urbanisation (dev. from nat. average)



Typology based on p.c. GDP change rates 2001-2011 as a difference from the national (NUTS0) average

P.C. GDP PERFORMANCE (growth of per capita GDP 2001-2011 compared to NATIONAL average)*	Very low (1st q.le of distribution)	Pop. living in HDUC <30% of NUTS3 population	Pop. Living in HDUC >30% < 70% of NUTS3 population	Pop. Living in HDUC >70%of NUTS3 population
	Low (2nd q.le of distribution)			
	High (3rd q.le of distribution)			
	Very High (4th q.le of distribution)			
	Pop. Growth data not available			

* Per capita GDP growth rates based on change of per capita GDP in current market prices between 2001 and 2011 , as difference from average change rate in same indicator for all NUTS3 regions in the country. Whenever either of these data are not available, most recent and older available year within the 2001-2011 range have been used.

Turning to look at per capita GDP growth, again the general picture portrayed in **¡Error! No se encuentra el origen de la referencia.** changes significantly when this is compared to each country's average, as in **¡Error! No se encuentra el origen de la referencia.** This map evidences that the growth in wealth in regions with a lower degree of urbanisation in Belgium, Germany and Austria contrasts with the decrease of metropolitan regions in the same countries, including the neighbouring 'intermediate' regions (represented with shadows of grey).

Conversely, the growth in less urbanised regions in Slovakia, Hungary, Poland, Bulgaria and Greece occurs at the expenses of remote areas with low degree of urbanisation. The UK is characterised by polarization of growth in the extreme opposite regional types, i.e. in both the main urban areas and in the smaller settlements regions, at the expenses of those intermediate regions in which the population is evenly distributed in high urban clusters and smaller settlements. France comes out patchy to this respect, with a strong role of regions including the second-tier urban poles. In any case it should be pointed out how peripheral regions that are tourist destinations (both domestic and international) in core areas do particularly well: it is the case of Cornwall and the Lake District in the UK, the Southern Central region in France, the West of Germany, some provinces in Sardinia and Sicily as well as the Alpine regions in Italy.

The general picture is that of a re-equilibrium of wealth in many countries in the West and the Centre, where the less urbanised areas in the periphery do better than the core. Conversely, the breach seems to widen at the south-eastern edge of Europe, where regions characterised by lower degrees of urbanisation are left behind in a typical ongoing metropolitanisation process of these economies. Significant 'national' hot spots are thus found in the south of France, western Spain, Eastern Germany through the Polish west, the south of Norway, Estonia and Western Bulgaria; interesting local phenomena regard specific NUTS3 regions in Apulia, central Sardinia, southern Greece and northern Scotland.

CONCLUSIONS

The paper contributes to the reflection about the analytical category of 'town', combining the information on morphological structures with indicators that are generally only available at administrative levels. Leaving aside the differences in national definitions about the concept of town (which are discussed in the introduction to this special issue), the paper picks how different urbanisation patterns – and in particular those characterised by smaller settlements – are related to specific territorial trends. Though this exercise is rather limited in scope, it can arguably open the way for further research on these relationships.

This combination also evokes the integration of two epistemological approaches to the study of regional phenomena: a purely 'territorialist' approach, which interprets the urban space as bounded, coherent and discrete (for a critique, see Brenner and Schmid, 2013: 14), and a 'functional' approach, which opens up the analysis of such discrete units in regional systems whereas overall regional performance is determined by the interrelations between their components parts. It is the case of the interrelation between urban areas or metropolitan cores and their 'fringe', of urban areas within polycentric systems, and of rural 'peripheries' of strongly centralised metropolitan systems. This paper however addresses predominantly the 'intermediate' task of looking more broadly at regional performance and relating it to underlying territorial structures, with a focus on those characterised by small and medium settlements. The role of functional associations is left to the interpretative section, which complement Sykora and Mulicek's paper in this special issue that addresses it as main analytical focus.

The pan-European analysis provides insights in terms of general trends for less urbanised regions in the context of the broader trends which took place in the first decade of 2000's (the EU enlargement of the first part of the decade, the financial meltdown of the second one, the intensification of interregional and external migration, the specific dynamics of tourism as a lever of urbanisation).

Regions that are characterised by smaller settlements seem to be able to offer less spatial inertia toward larger-scale phenomena. We can read in this way the fact that the macro-dynamics of population changes

tend to prevail in comparison with regional specificities. Therefore, it seems that territorial characteristics can offer few bouncing back capacities toward macro territorial dynamics. On the contrary, larger urban areas might have a critical mass that gives higher chance to define strategies for inverting socio-economic trends, such as changes in population or productive reconfigurations. It is an example the dominance of a trend characterized by a shift of population from the East and the North to South and the West of Europe (or high out-migration rate of the former, and high in-migration rate of the latter) that affects large macro-regions characterised by smaller settlements.

However, the ‘normalisation’ of the analysis with respect to national averages allows to pick ‘local’ trends and notable national variations on such global patterns, especially in relation to suburbanisation trends, the role of peripheral regions, and the importance of proximity and functional connections with larger metropolitan areas. Together with macro scale phenomena, there is also a macro/meso regional path dependency with specific national differences, which may indicate that specific urban-systems features and national policies matter. It is the case of the different suburbanisation processes taking place around the main urban poles in Europe (southern France, northern Sweden, etc), but also the coastal dynamics in the Iberian peninsula, which is affected by national and international tourism dynamics and related processes (real-estate bubble, high-density urban sprawl, silver migration, etc).

Hence, a number of territorial phenomena stand out among the large variety of phenomena related to regional characteristics, national contexts and macro/meso dynamics. The belief that smaller settlements have uniform spatial behaviours and /or socio-economic problems across Europe is misleading. At the same time, smaller settlements are not isolated elements in spatial contexts, but rather embedded in multi-scalar dynamics. It is therefore possible to identify clusters of problems and assets that may characterise specific regions and that are the general socio-economic framework setting the limits in which specific settlements may have room for driving their own socio-economic dynamics.

All in all, the paper contributes to a better understanding of the relationship between smaller settlements and their regional context. On one hand it reaffirms the strongly ‘embedded’ nature of smaller settlements within urban systems and territorial structures characterised by macro European trends, national variations, and a certain degree of path dependency. At the same time though, it discloses a certain number of idiosyncratic local dynamics and specific territorial trends which leave ample room for tailored policy initiatives aiming at strengthening the role of smaller settlements as drivers of the overarching EU objectives of competitiveness and territorial cohesion. These results align with those produced by Smith and Hamdouch et al. in this special issue, focusing respectively on regional path dependencies and larger scale trends embedding local trajectories, and the recognition that smaller urban settlements can have a certain, albeit variable, strategic capacity to ‘autonomously’ steer their own development trajectory, depending on their institutional and functional context.

NOTES

¹ A detailed description of these classes and the conceptual and methodological issues faced in their construction is presented in the Russo *et al.*’s paper in this special issue.

² We verified that there is a certain difference between the estimated population of the grids included (completely or in part) in NUTS3 areas and the real population as provided by EUROSTAT. This difference is generally around 1-2% but in some cases – especially in cases of small NUTS3 areas where there are ‘more borders’ cutting through grid cells – the estimation error could be larger due to the approximation in attributing to bordering NUTS3 areas values of grid cells that are ‘split’ (as in the case most notably of Germany and the UK, with various sprawling urban settlements stretching over different regional boundaries). Thus they may take on larger values, leading to a sensible under- or over- estimation of the population and population density of polygons (and thus their attribution to one of the different classes that were created). In these cases, the calculation of population shares in different urban settlement classes has been re-estimated based on the ‘real’ 2006 population.

³ For instance, a region with prevailing smaller settlements of about 500,000 inhabitants may be constituted by 150,000 inhabitants living in one or two HDUC (e.g. 1 cities of 90,000 inh. and another of 60,000 inh.) integrated in a regional context in which 350,000 inhabitants may live in 7-8 SMST (e.g. amounting to 250,000 inh.), and in about 100 VSTs or other settlements (about 100,000 inhabitants). In this case, the roles of smaller settlements - or of the two large cities (HDUCs) - within the general regional data would not be ascertained. Still, the prevalence of SMSTs and VSTs offers a good approximation of the general urbanisation pattern in that region.

⁴ Using Purchase Parity Standard (PPS) per capita GDP would have produced more significant and comparable results especially at the global EU level. However, the possibility of using the EUROSTAT PPS data sets is compromised by the existence of important data gaps in the time series 2001-2011, and the difficulty of recalculating such indicator to account for NUTS3 boundary shifts that were introduced with the 2010 NUTS3 edition.

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