

CAEE

The case for agglomeration economies in Europe

Targeted Analysis 2013/2/1

Final Report | 30 June 2010



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Table of contents

A	Executive summary	5
B	Report	
	Introduction and purpose of the study	16
	The 'new' agglomeration and spatial economic change	21
	The evolution of metropolitan/city-regional governance in and for the case study areas	41
	Has metropolitan/city-regional governance made a difference?	49
	Implications for future policy, institutional design and research	56
C	Scientific report (Appendices)	
C1	Investigating Agglomeration Economies in a panel of European Cities and Regions	
C2	Greater Manchester case study	
C3	Dublin case study	
C4	Barcelona case study	
C5	Lyon case study	
C6	Histories of metropolitan/city-regional governance in the case study areas	

Executive summary

The CAEE study

1. This report sets out the findings from the CAEE study, whose primary purpose was to examine the relationship between agglomeration economies and city-regional/metropolitan governance. Any attempt to examine this relationship has to address significant conceptual as well as empirical challenges. However these challenges are worth facing because of the importance of linking together two vigorous debates that have taken place, in academia and policy-making circles, largely independently, in recent years. The first focuses on the importance of 'new' agglomeration economies to patterns of European spatial economic change and especially the apparent 'stretching' of national and international urban hierarchies (i.e. growing differences in the economic performance of urban areas). The second concerns claims that are made for the emerging importance of governance arrangements for 'natural economic areas' in facilitating effective adaptation to economic change.
2. In bringing these two debates together, the CAEE study attempted to go beyond a 'black box' approach to the relationship between agglomeration economies and city-regional/metropolitan governance, which has identified an association between superior economic performance and the existence of a city-regional/metropolitan unit or tier of governance *of any sort*. Instead, it focused on assessing which characteristics of city-regional/metropolitan governance, if any, enable and shape agglomeration economies and with what effect. It was only by attempting to

understand *what* city-regional/metropolitan governance comprises and *how* it matters that the study could improve upon existing knowledge and fulfil its aspiration to inform debates about policy choices and institutional design. In adopting this focus, the research team was careful not to assume that the field of metropolitan/city-regional *governance* is defined entirely by metropolitan/city-regional *institutions*. Whilst institutions at this scale are important to varying extents, their competencies and capacities differ widely across, and even within, national contexts and their scope and influence depends, in all cases, on relationships with other levels of government (local, regional, national, international) and between public agencies and non-statutory interests and organisations.

3. In broad terms, the study had two main tasks. One involved a 'wide and shallow' analysis of the importance of agglomeration economies to changes in national and European urban hierarchies. The other, focused upon case study metropolitan areas/city-regions centred upon Barcelona, Dublin, Lyon and Manchester, comprised an examination of: the impact of the 'new agglomeration' on the internal geography of economic activity, the evolution of metropolitan/city-regional governance over time, and the extent to which these governance arrangements have contributed, as part of a broader set of public sector interventions, to reshaping the environment in which agglomeration economies are realised.

The 'new agglomeration' and spatial economic change

4. The study identified a close correlation between metropolitan areas/city-regions in Europe (or rather the best proxies that are available from standard data sources) which are characterised by intense concentrations of employment and Gross Value Added and those that have experienced highest net wealth creation in recent years. It also confirmed that the case study areas, centred upon Barcelona, Dublin, Lyon and Manchester, and especially the core areas that contain the central cities, experienced economic growth rates, during the decade that preceded the global downturn, that were high by European standards and stood out within their national contexts. The case study areas were not simply beneficiaries of a sustained period of national economic expansion, they were important drivers of that growth. As a result, they further strengthened their positions within their respective national urban hierarchies.

5. The study also found evidence of a positive relationship between employment density and labour productivity over time which has strengthened over the last decade. Whilst it is difficult to test 'localisation' and 'urbanisation' economies – the two principal forms of agglomeration identified in the conceptual literature – directly, the results are also consistent with the commonsense claim that localisation economies were more important in the earliest period covered by the study's econometric analysis (the 1980s) but that urbanisation economies, which are often argued to be more relevant to service sector activities, have become more important in the later period. In other words, a growing productivity premium

appears to be attached to urban employment density and diversity.

6. The shifting balance between urbanisation and localisation economies is broadly reflected in the changing geography of economic activity in each of the case study areas. The highest rates of economic growth, as measured by employment change, tend to be found in relatively high value service sector activities at the core of each of the conurbations whilst older manufacturing industries tend to survive in pockets in smaller urban centres at the metropolitan periphery. Higher value manufacturing activity and some of the more routine service sector activities – particularly those requiring extensive land – tend to cluster around key transportation infrastructures, often on the fringe of the core urban area.

The evolution of metropolitan/city-regional governance

7. Each of the case studies is characterised by substantially different experiences with the development of metropolitan or city-regional governance arrangements which vary according to: the national institutional context within which they operate; the degree to which they are institutionalised; the powers, competencies, capacities and resources that any such institutions or group of institutions possess; the extent to which governance at the metropolitan/city-regional scale focuses on policy co-ordination between different levels of government as opposed to service delivery, and; the degree to which the primary responsibilities of governance arrangements at the metropolitan/city-regional scale is seen

to revolve around the management of economic change and its social, environmental and spatial consequences.

8. The one constant, across each of the case study areas, is the gradual, if sometimes faltering, development of stronger metropolitan/city-regional governance arrangements – but not necessarily dedicated institutions - over the long term, stretching back over a 20-40 year period. This has been driven partly by the greater complexities brought about by suburban sprawl and the decentralisation of economic activity, partly by the demands created by the transition to a knowledge-based economy and partly by growing awareness of the interconnected fortunes and different potentials of areas within the metropolitan areas/city regions. In other respects, though, the case study areas occupy different positions on a variety of continuums, e.g. centralised/decentralised (with Ireland at one end and Spain at the other), simple/complex institutional framework (where the Irish and UK division of labour between different tiers of government are less complex than those between the multiple levels found in France and Spain).

How has metropolitan/city-regional governance made a difference?

9. Were we to rank our various case study areas according to the longevity, consistency, capacity and influence of the inter-municipal governance arrangements that have been created at or for something approximating the metropolitan or city-regional scale over the last 30-40 years, Lyon would appear at the top, followed by Manchester, Barcelona and Dublin. This stark summary, however, simplifies a complex picture within which the direction of travel – towards greater integration and coherence – is similar but the routes through which it has

been approached vary widely, as do the factors that encourage or discourage success in this respect.

10. Irrespective of the levels of autonomy and influence possessed by metropolitan or city-regional institutions, two things are clear. First, and most obviously, none of the institutions have a strong and direct influence over patterns of spatial economic change and agglomeration, not least because decisions within the public sector as a whole can only ever shape the context in which choices by firms and households are made. The patterns produced by locational preferences that are relevant to different sorts of economic activity are the largely unintended consequences of myriad firm-level choices, not the designs or preferences of public policy-makers.
11. Second, in relation to the key contributions that interviewees identified as having shaped the business environment, in the widest sense, most powerfully – corporate tax policy, critical communication infrastructures, the availability of skilled or high potential labour (including the presence of research intensive higher education institutions), international connectivity through a globally connected hub airport, the clarity, decisiveness and speed of public planning processes – even the strongest metropolitan/city-regional institutions are ‘bit part players’ that can only influence public sector choices within these areas at the margin.
12. In one sense, the line of causality that it is implied when the question ‘what impact have metropolitan/city-regional institutions had upon agglomeration economies?’ is posed also works in the opposite direction, and the forms of governance

described in this report can be interpreted as partial, and inevitably incomplete, attempts to assemble the capacity, autonomy and forms of influence that make it possible to deal more effectively with the challenges that new patterns of economic change throw up. This is not to argue, however, that there are not elements of the processes of institutional development and policy integration examined by the study that are more effective and provide potentially valuable lessons.

13. Taken as a whole, the evidence from case study work suggests that an 'ideal type model' for a policy regime built upon exploiting and managing agglomeration processes more effectively would have a number of key characteristics, as follows.

- A supportive national context which provides clarity about overall understandings of, and aspirations for, patterns of spatial development and links them to core investment plans and choices
- Strong technical capacity at the metropolitan/city-regional scale for the purposes of strategic analysis and programme delivery (directly or through partner organisations)
- Metropolitan/city-regional institutions or networks that seek and achieve significant 'vertical' influence, at higher levels of government (regional/national), and are able to shape policy agenda and encourage policy integration
- A compelling, broadly shared and evidence-based narrative which provides the basis for collective, strategic priorities and aspirations and is clear about the

relationship between the metropolitan and city-regional scales

- Strong political leadership (at metropolitan/city-regional or central city level), able to construct strong 'horizontal' connections across municipal authorities and with other public and private stakeholder organisations, and
- An ability to recognise and deal with the environmental and social implications of pursuing strategic development ambitions.

Implications for policy, institutional design and research

14. The ideal type model elaborated above provides a check-list of actions that can guide processes of institutional development and policy change *if* priority is given to adjusting to the effects of the new agglomeration trends identified by the study. Doubts remain, however, about whether this is a feasible expectation.
15. The trends identified by the study intensified during a period of global economic expansion and are likely to continue through the re-adjustment process that is resulting from the 2008 global financial crisis (and its extensive knock-on effects) and into the next period of economic upturn. Should this expectation be realised, policy-makers will increasingly need to recognise that, whatever form a 'post-financialization' growth model takes in Europe, it is likely to be more dominated by a smaller number of key metropolitan areas and city-regions than was the case during the late industrial era. This will pose acute policy challenges at European, national and regional levels which are likely to see an increase in the

tension that already exists between non-spatial, competitiveness-based policies, which have tended to drive or be driven by agglomeration processes and challenges, and spatial development and cohesion policies whose implicit mission, traditionally, has been to resist them.

16. Resolution of this tension will not be easy but the outcome will not necessarily be regressive *if* it is based upon the effective management of agglomeration processes rather than a policy framework that ignores or attempts to counter their significance. Indeed, it could be argued that a policy regime that supports productivity improvement in areas of high potential in order to secure the means to support sustainable growth and adjustment in areas with lower potential has greater long-term prospects for success. At both the European and national level, however, it will mean developing policy instruments and institutional arrangements that 'go with the grain' of the agglomeration processes identified in the study and build on the capacity and potential of a wide range of 'second tier' metropolitan areas and city-regions such as our case study areas.
17. A potentially rich research agenda arises from these observations about the way in which the autonomy, capacity and influence of metropolitan areas/city-regions can be built in order that they can make a full contribution to European competitiveness and territorial balance in the future. Three lines of inquiry, however, might be of particular interest and could build usefully on the approach to agglomeration analysis adopted by the CAEE project.

18. The first addresses an issue that is ostensibly technical, but affects the capacity of researchers to make greater sense of contemporary European spatial development patterns. This study has hopefully demonstrated the advantages of taking an interdisciplinary approach to the complex interaction between economic, institutional and policy processes but it was constrained by the paucity of data available at the appropriate scale. Some attempt to fill this gap through a focused attempt to define the 'areas of influence' around key European cities more effectively, drawing on various 'flow' data such as that used for the METROBORDER project, is needed to give greater specificity and dynamic understanding to established notions such as MEGA regions. Such a project would enable better quality comparative work but it would mean relaxing the demand, often placed on quantitative European spatial research, that an appropriate classification system should cover all of Europe and avoid any spaces in or overlap between units of analysis. The ostensible comprehensiveness and neatness produced by this requirement, judging by the experience of this study, tends to be achieved at the expense of sophisticated understanding.
19. A more speculative project, designed to transcend the relatively unimaginative approach to 'spatial futures' that are commonly employed in economic and employment forecasts, would comprise a more qualitative, scenario-based exploration of the potential, flexible future uses of urban space that is not dominated by limiting assumptions derived from current lifestyles and practices (e.g. that urban workforces will travel to work, full time, in a single job, located in a fixed workplace, for a fixed number of hours per day, largely from within a defined travel-to-work area). If

agglomeration economies continue to intensify, there will be a need to consider radically different options for the more flexible and intensive use of urban space that have yet to be explored systematically.

20. Third, and partially related, there is a case for going beyond the analysis of the 'governance of economic competitiveness' that effectively lies at the heart of the CAEE project and to consider whether the creative processes involved in the vertical and horizontal alignment of policies by and through metropolitan/city-regional institutions and networks are being, or can be, mobilised and adapted in order to pursue low carbon futures. There is already significant research on (a) bargaining processes with respect to carbon emissions targets at the international scale, and (b) sub-national responses to the challenge of climate change adaptation and mitigation through the application of environmental regulations. Given that environmentally sustainable futures will be an increasingly important policy goal, however, and in view of the fact that there is a growing recognition that emissions targets can only be achieved through fundamental behaviour change by organisations and citizens, a review that approaches the sub-national governance of climate change mitigation and adaptation using an inter-disciplinary methodology similar to the one employed for CAEE would be enlightening.

1. Introduction and purpose of the study

The CAEE study forms part of the ESPON 2013 programme devoted to 'targeted analyses based on user demand'. The 'users', in this instance, are four key policy-making and delivery bodies based in Manchester (UK), Barcelona (Spain), Dublin (Republic of Ireland) and Lyon (France) which, under the leadership of the Commission for the New Economy in Greater Manchester, developed the initial CAEE study framework as a way of further exploring their interests in the impact of 'agglomeration economies' within and beyond the territories they cover and the extent to which the beneficial impacts of recent patterns of agglomeration have been shaped, and might be managed more effectively, by public policies and programmes and particularly by institutions and partnership arrangements operating at, or for, metropolitan areas or city-regions.

As noted in the study's earlier reports, neither 'agglomeration' nor 'metropolitan/city-regional governance' are straightforward concepts. The value of looking at them in relationship to one another, however, merits the conceptual and methodological effort involved in that it potentially links together two vigorous but largely independent debates that have taken place, in academia and policy-making circles, in recent years. The first focuses on the importance of 'new' agglomeration economies – that is, changes in the extent to which economic activities group together in particular places - to patterns of European spatial economic change and especially the apparent 'stretching' of national and international urban hierarchies (i.e. growing differences in the economic performance of urban areas). The second concerns claims that are made for the importance of governance arrangements for 'natural economic areas', as

opposed to more arbitrarily-defined administrative 'units', in facilitating effective adaptation to economic change.

These claims are supported, but not proven, by a small economics literature¹ that posits and identifies positive correlations between variations in economic performance and the presence or absence of a tier or unit of governance that is organised at the metropolitan/city-regional scale. According to such accounts, metropolitan/city-regional tiers or units of governance should be more effective in promoting and capturing the positive externalities of economic dynamism and growth because they can lower the transaction costs of forming a 'growth promotion club', identify and deliver strategic development policies more easily and encourage efficiency, integration, transparency and speed of decision making in relevant policy spheres (e.g. with respect to infrastructure, public-private investment and land use). Existing accounts, however, contain little empirical evidence to demonstrate that this is the case.

In bringing these two debates together, the CAEE study attempted to go beyond a 'black box' approach to the positive correlation identified in the literature which tends to assume that beneficial economic effects are generated by city-regional/metropolitan tiers or units of governance *of any sort*. Instead, the study attempted to assess which characteristics of city-regional/metropolitan governance, if any, enable and shape agglomeration economies and with what effect by examining the

¹ See, principally, Cheshire, P.C and, Gordon, I.R. (1996), Territorial competition and the logic of collective (in)action, *International Journal of Urban and Regional Research*, 20: 383-399 and Cheshire, P.C. and Magrini, S. (2009) 'Urban growth drivers in a Europe of sticky people and implicit boundaries' *Journal of Economic Geography* 9:1 85-115

experiences of the metropolitan areas/city-regions focused on our case study cities, each of which is characterised by very different forms of cross-jurisdictional governance, comprising various institutions, elected and non-elected, and different sorts of relationship between agencies and tiers of government. It was only by attempting to establish *what* city-regional/metropolitan governance comprises and *how* it matters that the study could hope to improve upon existing knowledge and fulfil its aspiration to inform debates about policy choices and institutional design.

In collaboration with the Steering Group, the initial study framework was developed into a work programme designed to address a number of core questions, as follows:

- Can it be shown that differential agglomeration economies have reshaped national and European urban hierarchies and to what extent have they privileged the larger, more dense, economically diverse and highly connected cities and metropolitan areas such as our case study areas?
- How have agglomeration economies shaped the geography of economic activity *within* our selected metropolitan areas and city-regions?
- What institutional capacity and levels of autonomy are present within the case study areas at the metropolitan/city-regional scale and how have these changed over time?
- Is there evidence to suggest that public policies and public expenditure have played a key role in promoting and shaping the pattern of agglomeration economies?

- To what extent have metropolitan/city-regional institutions and forms of governance contributed to the total public sector effort?, and
- What lessons can be learned from the experience of metropolitan or city-regional governance arrangements in the case study areas, how transferable are they, and how might their capacity to understand, promote and manage the benefits of agglomeration economies develop in future?

This final report addresses these questions, drawing upon the detailed scientific evidence presented in Appendices C1-C6. It proceeds in five further sections. Section 2 reviews the evidence, at European and national scales, that new agglomeration economies have resulted in a 'stretching' of urban hierarchies, whereby the larger, denser, most economically diverse and well-connected metropolitan areas/city-regions have experienced stronger economic performance. It also briefly examines the impact of these more generalised changes on the geography of economic activity at the individual metropolitan/city-regional scale.

Section 3 reviews the evolution of metropolitan/city-regional governance arrangements in each of the four case study areas, paying attention to the degrees of autonomy, capacity and influence of institutions and networks created at (or for) these scales through top down and bottom up reforms. Section 4 attempts to link the two preceding sections together, with reference to the case study work, by assessing the extent to which public policies and the activity of public agencies *in general* can feasibly claim to have shaped agglomeration economies before describing the way in which the institutions and

governance arrangements described in Section 3 have contributed to this process. Section 5 identifies the main implications of the study findings for policies at European, national and metropolitan/city-regional levels and for approaches to institutional development. It also assesses challenges for future research in this field.

2. The 'new' agglomeration and spatial economic change

There are two alternative approaches to the notion of 'agglomeration', that is, the tendency for economic actors to group together, geographically, in order to gain competitive advantage, rather than disperse, as most traditional economic theory suggests they should. Each is associated with rather different assessments of the in-principle ways in which the co-location of economic activity benefits firms and households [see Appendix C1]. Agglomeration analysts speak, on one hand, of 'localisation economies', whereby firms are argued to benefit from localised supply chains, technological and knowledge 'spill-over' effects and the creation of pools of specialised labour skills whose attributes are well matched to the needs of a particular industry or set of related industries.

On the other, they refer to 'urbanisation economies' and make claims about the advantages gained by households as well as firms, regardless of sector, from intense concentrations of economic activity. Urbanisation economies are partially based on economies of scope which offer agents located in densely populated markets the opportunity to take advantage of positive externalities, such as those associated with knowledge spillovers across as well as within industries, the presence of a more extensive division of labour or increasing returns owing to firm-level economies of scale and improved firm-worker matching. The variety of employment opportunities available within extensive, dense labour markets also maximise the possibility of job-switching and career acceleration and provide workers with insurance against under- and unemployment.

In principle, we might expect to find examples of localisation and urbanisation economies across all types of economic activity (and even in non-market sectors given that the attractiveness of places to public sector labour migrants or commuters is inevitably influenced by the density, range and level of public employment available). Broadly, however, localisation economies have generally been associated with manufacturing sectors whilst urbanisation economies, at least in recent years, have been thought of as more relevant to service sector activity. The corollary of this, in a period in which there has been a substantial shift, in Europe, from an industrial to a knowledge-based economy, at least in terms of employment numbers, is the working assumption that urbanisation economies have become more important over time.

The study's econometric analysis [see C1] attempted to assess the importance of both forms of agglomeration economies by looking at the relationship between employment density and labour productivity. The broad context for this analysis, however, is one in which it is apparent, from basic indicators, that recent trends in wealth generation in Europe have been dominated by key metropolitan areas and city-regions. This is demonstrated in a series of figures, below. The first two show the concentrations of Gross Value Added (GVA) in European NUTS 3 areas (typically bigger than the administrative areas covered by cities but smaller than regions or other intermediate tiers of government) as at the last recorded data point, 2006, and the increase in real GVA² over the previous decade for the same areas.

² The Europe-wide maps are not comprehensive because the study used 'real' NUTS 3 GVA data, supplied under license from Cambridge Econometrics, which is adjusted for differential national inflation rates. This data is superior for cross-country comparisons but is not available for all European countries.

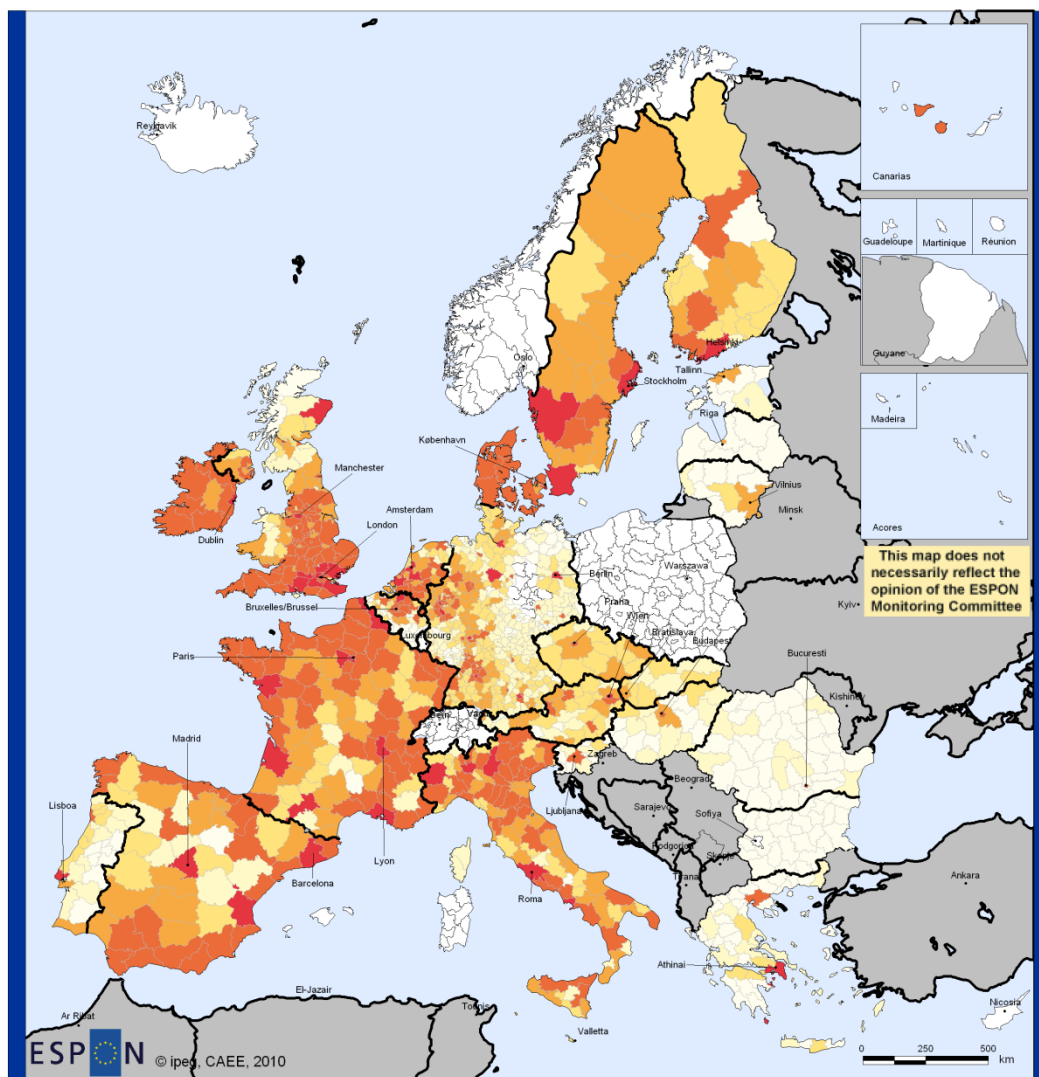
Figures 1 and 2 show that the CAEE case study areas appear within the top 8% of European NUTS 3 areas on both measures and the high degree of co-occurrence, amongst and beyond the case study areas, between areas that are characterised by high concentrations of GVA and high net increases in GVA provides one indication of the importance of key metropolitan areas and city-regions to patterns of economic growth in the period leading up to the global financial crisis. The effect of high net GVA increases in already GVA-rich areas, of course, is to widen the performance gap between these and other areas.

The same figures also illustrate continued disparities between Europe's western and Scandinavian 'core' and its southern and eastern peripheries and the continued importance of national economic performance to sub-national growth (as illustrated, for example, by high levels of net GVA growth across Ireland and low levels of growth across Portugal and much of eastern Europe during the period). The variegated pattern of net GVA growth in other countries (e.g. Germany, Italy), which appear because national economic performance was neither strong enough to place the majority of NUTS 3 areas in the highest band by European standards nor sufficiently weak to place them in the lowest band, reminds us, however, that sub-national variations remain strong. This is more readily apparent if the focus shifts to variations within individual countries.

Figures 3-10 present similar pairs of maps for each of the countries within which our case study areas sit. Because the range of values in each case is narrower than is the case at the pan-European scale, they present a higher resolution picture of the 'weight' and growth performance of our case study areas relative to national comparators.

Figure 1

Gross Value Added, 2006



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 EUROPEAN UNION
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 Regional level: NUTS 3
 Source: Cambridge Econometrics, 2009
 Origin of data: Eurostat, 2009
 © EuroGeographics Association for administrative boundaries

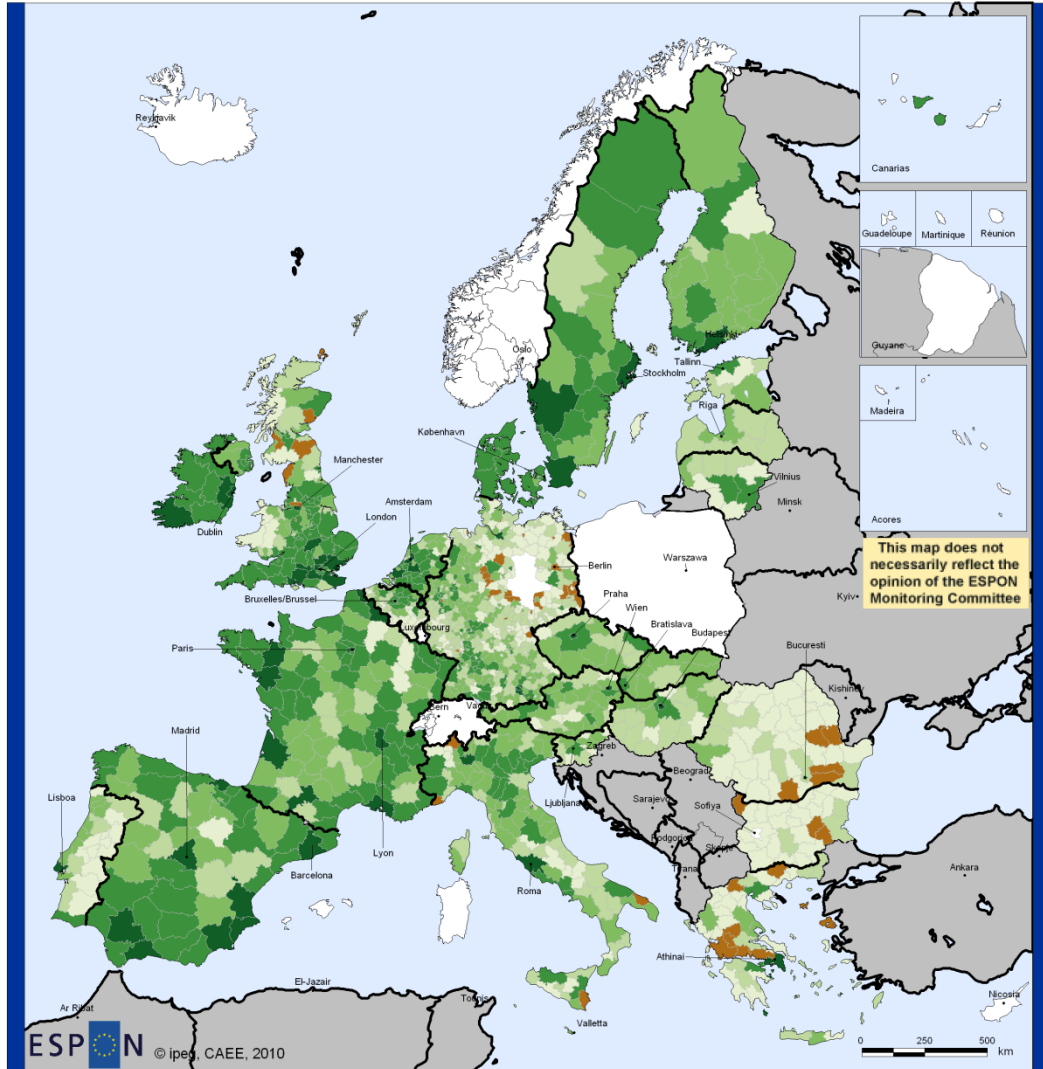
Gross Value Added 2006 (at constant 2000 prices)

Figures in millions of Euros

- €27,500m and above
- €8,000m to €27,500m
- €4,700m to €8,000m
- €2,700m to €4,700m
- €1,450m to €2,700m
- €0 to €1,450m
- No data available

Figure 2

Absolute Change in Gross Value Added, 1996 to 2006



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EUROPEAN UNION
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INVESTING IN YOUR FUTURE

Regional level: NUTS 3
Source: Cambridge Econometrics, 2009
Origin of data: Eurostat, 2009
© EuroGeographics Association for administrative boundaries

Change in GVA 1996 to 2006 (at constant 2000 prices)
Figures in millions of euros

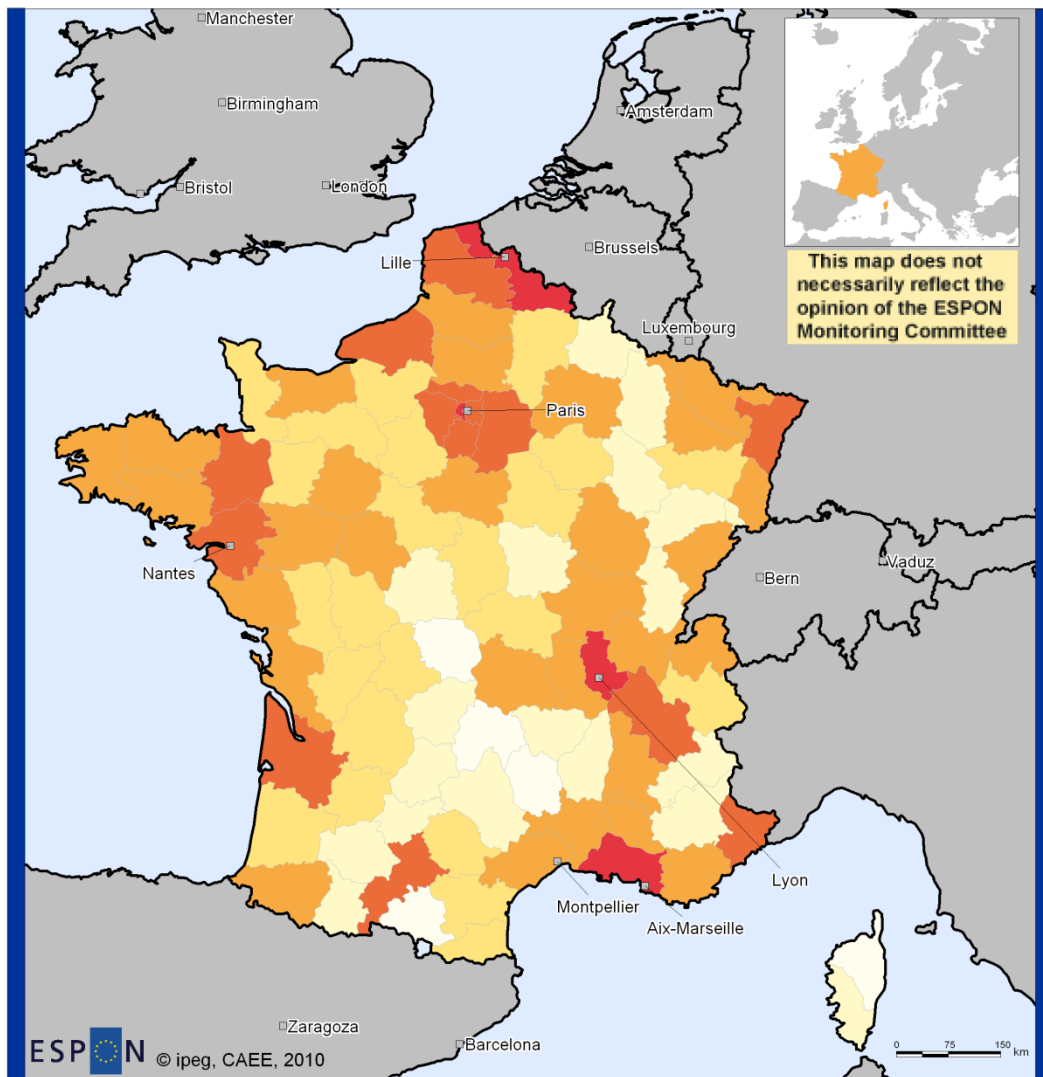
- €6,500 and above
- €1,400m to €6,500m
- €640m to €1,400m
- €260m to €640m
- €0 to €260m
- €2,250m to €0
- No data available

Whilst the effect of grouping NUTS 3 areas together in various sub-national 'bands' is to downplay the marked differences between 'primate' cities (Paris, Dublin, Madrid and Barcelona, London) plus their hinterlands and other high performing areas within their respective national contexts, Figures 3-10 nonetheless demonstrate that a combination of high GVA concentration and high net levels of recent GVA growth have enhanced the positions of our case study areas within national urban hierarchies. The effect has been to reinforce Lyon's position (and, to a lesser extent, those of Aix-Marseille and Lille) within the 'second tier' of the French urban hierarchy, beyond Paris (Figures 3 and 4), to strengthen Dublin's role as the dominant metropolitan area within Ireland (Figures 5 and 6), and to confirm Barcelona's place alongside Madrid as the key metropolitan growth area in Spain (Figures 7 and 8).

Manchester stands in relation to London and the 'super region' that surrounds it in much the same way as Lyon does to Paris. Greater Manchester, comprising two NUTS 3 areas, is unique amongst the case studies, however, in the contrasting fortunes that are found between its northern and southern 'wings'. Figure 9 confirms that Greater Manchester South, which contains the administrative City of Manchester, has the highest concentration of GVA in the UK outside London and the extensive group of high GVA areas that surround the capital. It also confirms that Greater Manchester North and, even moreso, Cheshire, immediately south of Manchester, have comparatively high levels of GVA. As Figure 10 shows, however, whilst net GVA growth in Greater Manchester South between 1996 and 2006 was at a level comparable to that found in the more extensive high growth area surrounding London and that of Cheshire was comfortably above the national average, Greater Manchester North was one of only seven NUTS 3 areas in the UK that saw net GVA decline during the period.

Figure 3

Gross Value Added, 2006



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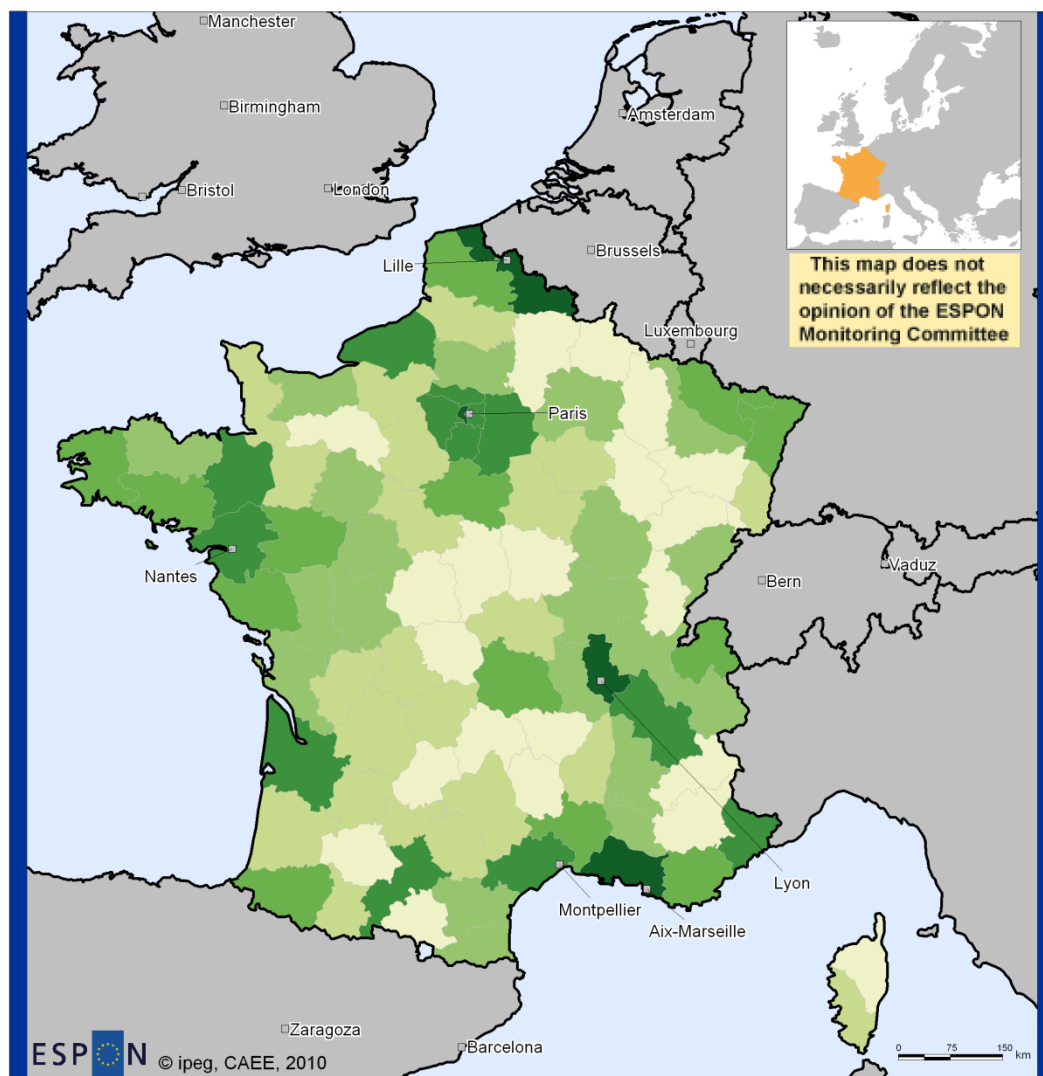
Regional level: NUTS3
Source: Cambridge Econometrics, 2009
Origin of data: Eurostat, 2009
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Gross Value Added 2006 (at constant 2000 prices)
Figures in millions of euros

€40,000mn and above	(5)
€20,000mn to €40,000mn	(15)
€10,000mn to €20,000mn	(29)
€5,000mn to €10,000mn	(23)
€2,500mn to €5,000mn	(19)
€0 to €2,500mn	(5)

Figure 4

Absolute Change in Gross Value Added, 1996 to 2006



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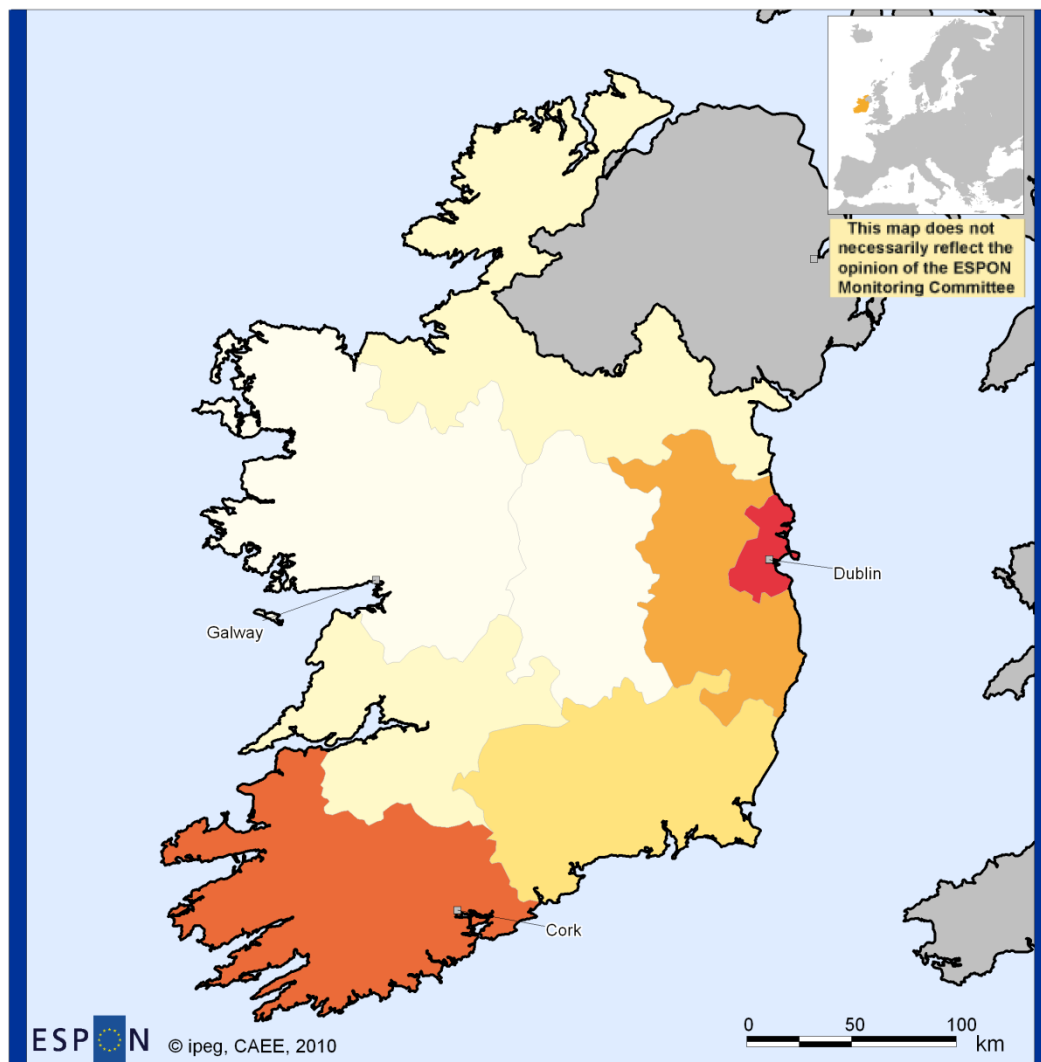
Regional level: NUTS3
Source: Cambridge Econometrics, 2009
Origin of data: Eurostat, 2009
© EuroGeographics Association for administrative boundaries

Change in GVA 1996 to 2006 (at constant 2000 prices)
Figures in millions of euros

- €8,000mn to €100,000mn
- €4,000mn to €8,000mn
- €2,500mn to €4,000mn
- €1,500mn to €2,500mn
- €800mn to €1,500mn
- €0 to €300mn

Figure 5

Gross Value Added, 2006



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Regional level: NUTS 3
Source: Cambridge Econometrics, 2009
Origin of data: Eurostat, 2009
© EuroGeographics Association for administrative boundaries

Gross Value Added 2006 (at constant 2000 prices)
Figures in millions of euros

- €30,000mn and above
- €13,000mn to €30,000mn
- €11,600mn to €13,000mn
- €11,000mn to €11,600mn
- €10,000mn to €11,000mn
- €0 to €10,000mn

Figure 6

Absolute Change in Gross Value Added, 1996 to 2006

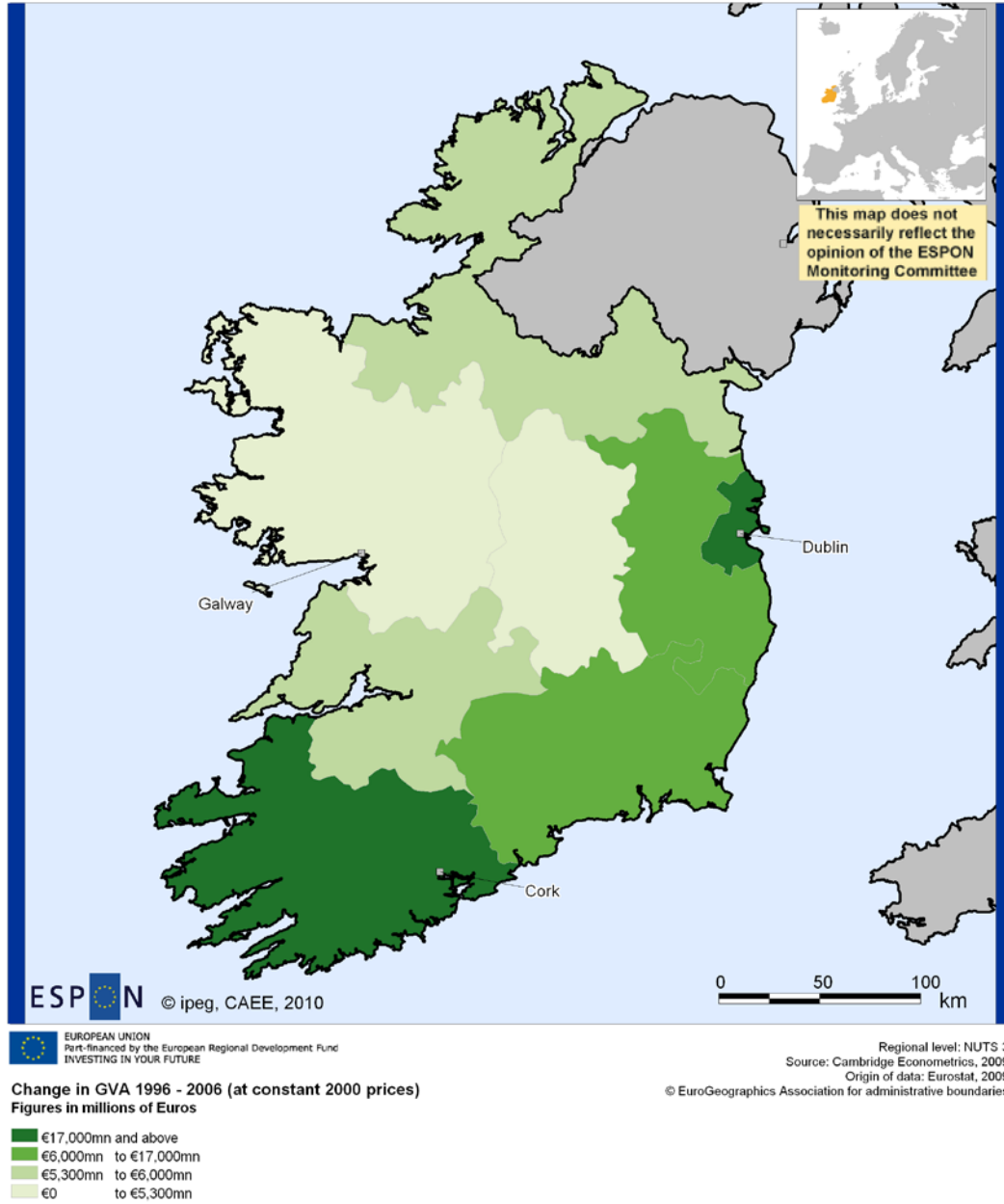
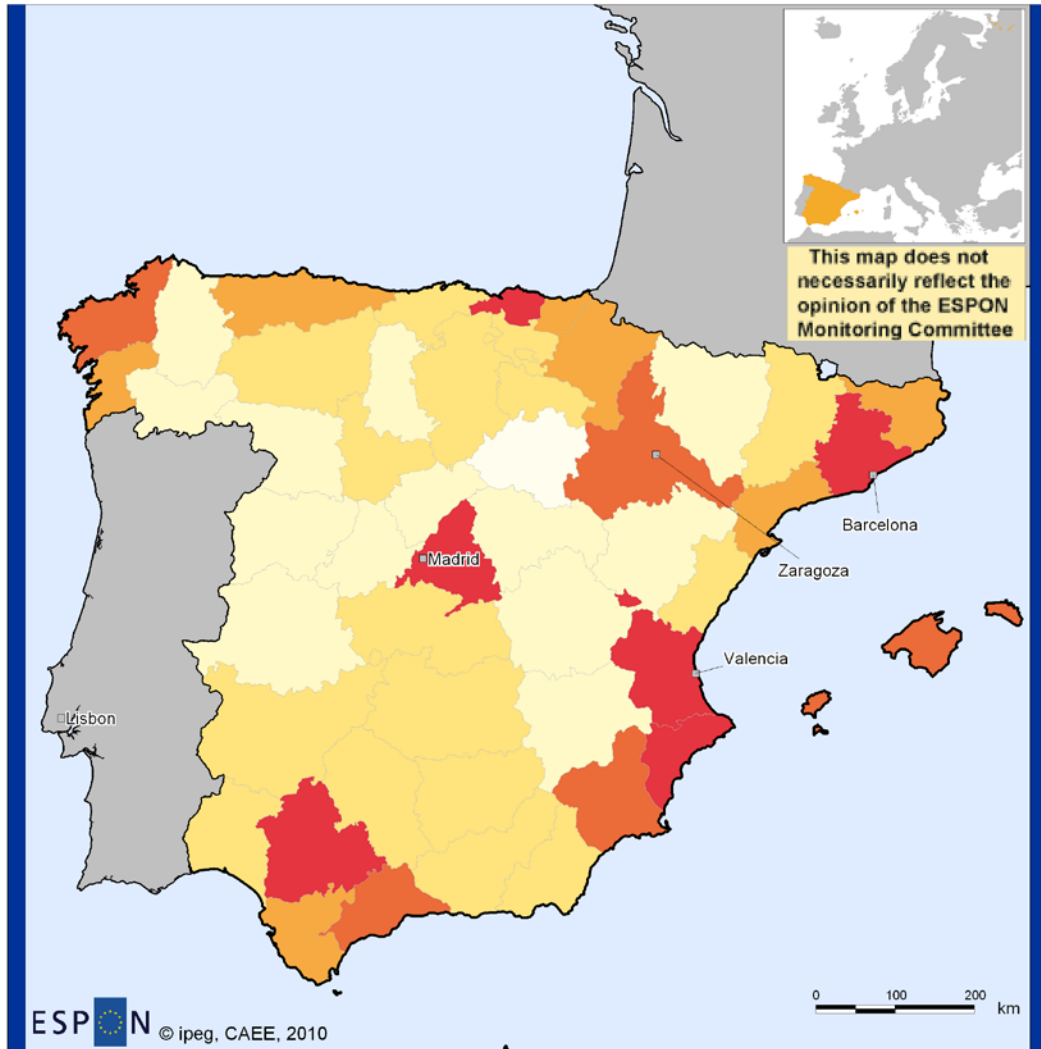


Figure 7

Gross Value Added, 2006



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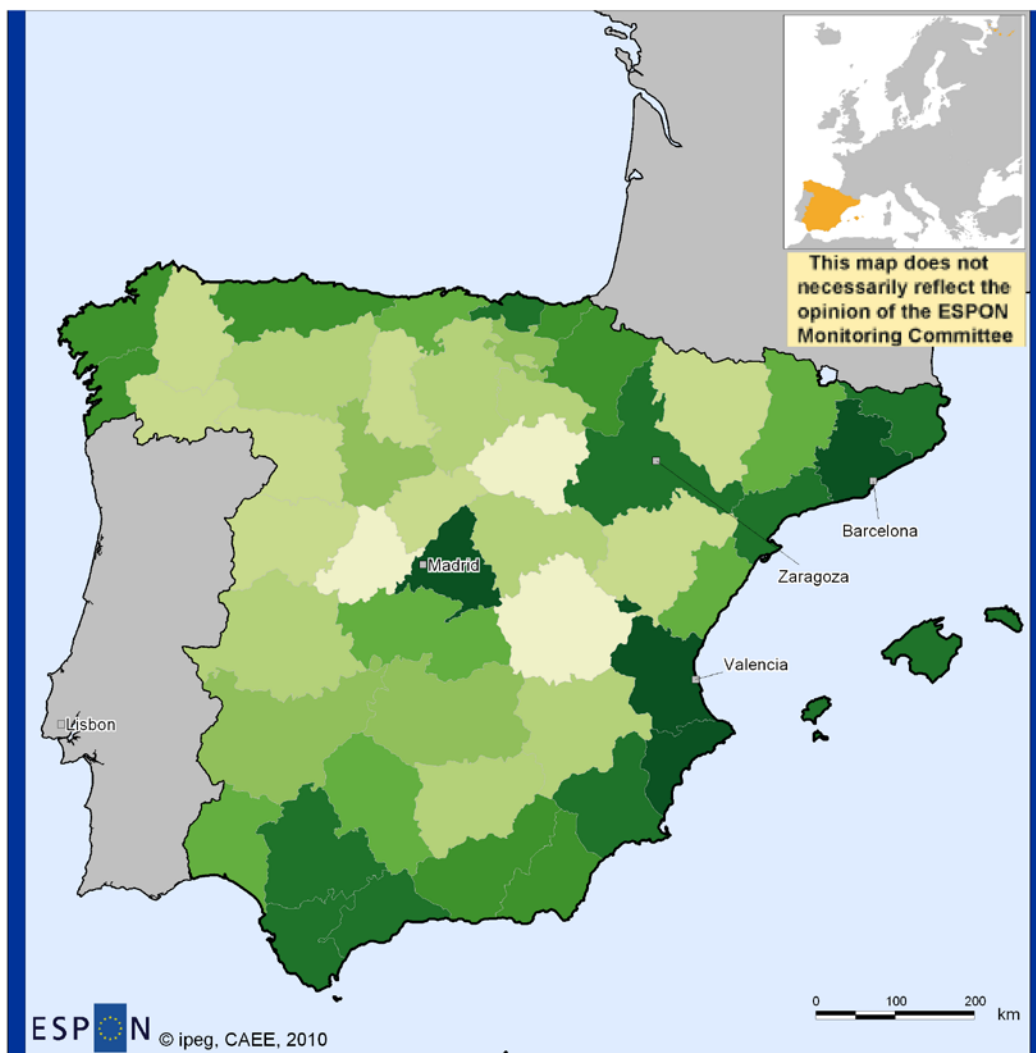
Regional level: NUTS 3
Source: Cambridge Econometrics, 2009
Origin of data: Eurostat, 2009
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Gross Value Added, 2006 (at constant 2000 prices)
Figures in millions of euros

- €20,000mn and above
- €15,000mn to €20,000mn
- €10,000mn to €15,000mn
- €5,000mn to €10,000mn
- €2,000mn to €5,000mn
- €0 to €2,000mn

Figure 8

Absolute Change in Gross Value Added, 1996 to 2006



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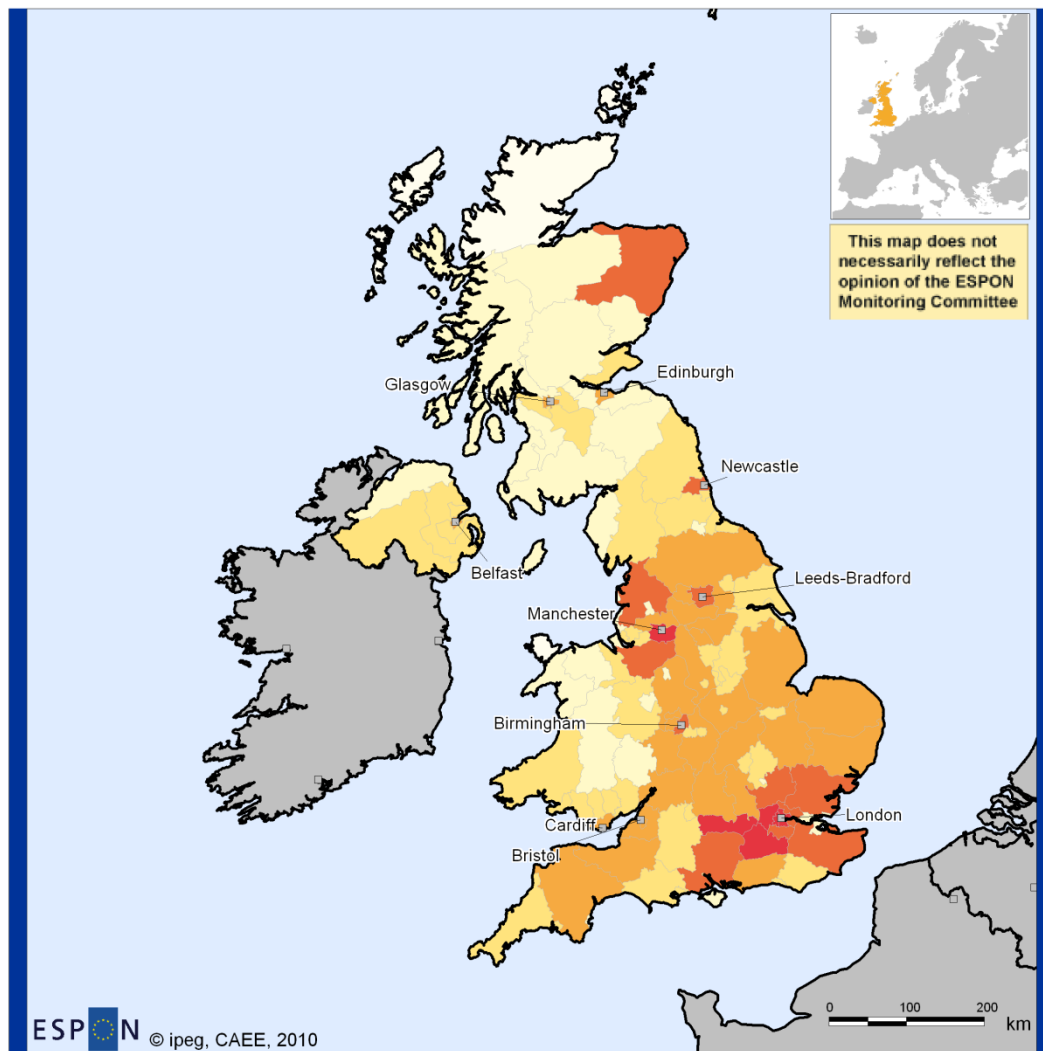
EUROPEAN UNION
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Regional level: NUTS 3
Source: Cambridge Econometrics, 2009
Origin of data: Eurostat, 2009
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- Change in GVA 1996 to 2006 (at constant 2000 prices)**
Figures in millions of euros
- €8,000mn and above
 - €4,000mn to €8,000mn
 - €3,000mn to €4,000mn
 - €2,000mn to €3,000mn
 - €1,500mn to €2,000mn
 - €1,000mn to €1,500mn
 - €450mn to €1,000mn
 - €0 to €450mn

Figure 9

Gross Value Added, 2006



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Regional level: NUTS 3
Source: Cambridge Econometrics, 2009
Origin of data: Eurostat, 2009

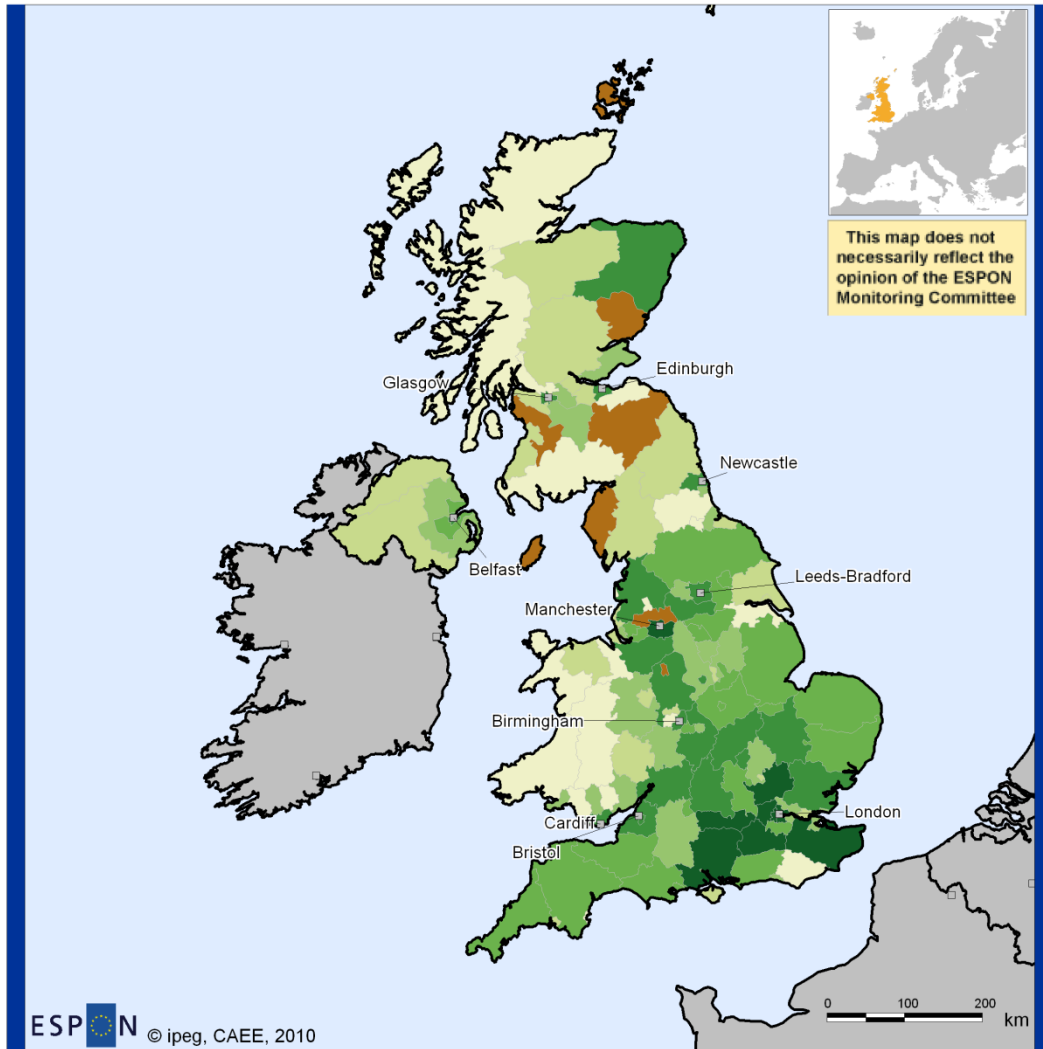
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Gross Value Added, 2006 (at constant 2000 prices)
Figures in millions of euros

- €37,500mn and above
- €20,000mn to €37,500mn
- €10,000mn to €20,000mn
- €5,000mn to €10,000mn
- €1,200mn to €5,000mn
- €0 to €1,200mn

Figure 10

Absolute Change in Gross Value Added, 1996 to 2006



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Regional level: NUTS 3
Source: Cambridge Econometrics, 2009
Origin of data: Eurostat, 2009
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Change in GVA 1996 to 2006 (at constant 2000 prices)
Figures in millions of euros

- €8,000mn and above
- €3,500mn to €8,000mn
- €1,800mn to €3,500mn
- €1,000mn to €1,800mn
- €500mn to €1,000mn
- €0 to €500mn
- €700mn to €0

The seemingly positive relationship between very high GVA growth in Greater Manchester South and high growth in Cheshire is the norm in the other case study areas, where peak level GVA growth in the NUTS 3 area containing the principal city is typically accompanied by higher than average growth in neighbouring NUTS 3 areas.

The patterns of growth illustrated above indicate a strong relationship between high GVA growth and areas of GVA concentration and are suggestive of 'spill-over effects' into NUTS 3 areas that border onto urban GVA 'hot spots'. In and of themselves, however, they do not demonstrate superior productivity, a key driver of agglomeration economies, in such areas. In principle, the patterns they describe could simply be the result of differential concentrations of employment, irrespective of labour productivity. The study therefore looked more closely at the relationship between density of employment and productivity by way of an econometric analysis.

Given that the reliability of econometric models depends upon the availability of a large number of observations, they cannot reliably be used to compare individual cases. The study therefore focused upon examining the relationship between employment density (jobs/land area) and productivity (GVA/job) in a general sense, and trying to understand how it has changed over time and how it varies between different forms of economic activity, principally manufacturing as opposed to services. Using dynamic panel techniques, this element of the study provided estimates of elasticity – which essentially describe how much a doubling of employment density would increase labour productivity – with respect to the relationship between employment density and

productivity for three periods roughly equating to the 1980s, 1990s and 'noughties'. Variations over time in 'elasticity co-efficients' tell us whether the relationship between productivity and density is strengthening or weakening, that is, whether agglomeration economies are becoming more or less important.

The additional challenge faced by such an analysis, given that the geography of data units has an important bearing on the way employment densities are calculated, is that standard data units rarely correspond very precisely with continuous built up areas (metropolitan areas) or to those areas within which economic inter-relationships between one or more core employment areas and their hinterlands are strongest (city-regions). In our cases, for example, the relatively large NUTS 3 areas centred upon Barcelona and Lyon are reasonable proxies for their respective city-regions whereas the comparable area around Dublin comprises two NUTS 3 areas – Dublin, centred upon the city and its immediate suburbs, and the surrounding Mid East – and the Manchester equivalent would ideally contain the Greater Manchester South NUTS 3 area plus parts of Cheshire and rather less of Greater Manchester North than is contained within the existing Greater Manchester NUTS 2 area. Constructing more logically comparable units for a large enough sample of European metropolitan areas and city-regions is, however, a complex research undertaking in its own right [see Section 5]. Given the resources available, the study's econometric analysis pragmatically applied the same methodology, separately, to NUTS 2 and NUTS 3 areas and to a subset of the largest NUTS 3 areas in order to incorporate all scales for which data are widely available that could approximate metropolitan areas and city-regions.

The aim was to establish the presence of agglomeration economies across Europe by estimating the strength of observed agglomeration effects and the way they have developed over time. Separate results were produced for manufacturing and service activities by assessing whether elasticities, in both cases, were more related to the presence of similar or other sectors, thereby indicating whether localisation or urbanisation economies appear to be more important within more general agglomeration patterns. The results showed little variation whichever unit of scale was used but the 'agglomeration effects' that were detected were both significantly larger than those generally estimated by previous work in this field whilst also demonstrating significant variation over time.

Over the whole period, the analysis uncovered strong evidence of agglomeration effects, over all countries, with elasticity coefficients of 13-14%. When the sample was split into three shorter time periods, the analysis identified a resurgence of agglomeration effects for the most recent period following a time in the 1990s when, at least at the NUTS 2 level, they become negative and insignificant. This resurgence was most noticeable amongst the larger NUTS 3 areas (i.e. those with more than 500,000 populations). The findings on localisation and urbanisation economies are more difficult to interpret but they suggest that, contrary to what might be expected from traditional accounts, localisation economies within manufacturing were relatively weak. Localisation economies were found to be stronger within service sectors but less important, over time, than urbanisation economies.

These findings, together with the evidence on the relationship between GVA 'weight' and growth, suggest there should be evidence of agglomeration economies within our case study areas,

reflecting new sorts of 'locational logic' practised by firms in different sectors. What would be expected, specifically, is a tendency for employment in key, high growth and high value sectors to cluster and expand in those locations that offer the best environment for them. Depending upon the scale of that growth and the capacity of the areas in which they are, or would prefer to be, located to absorb further economic activity, we might also expect, over time, to see evidence of the decentralisation or peripheral growth of lower value activities that are pushed or priced out of 'hotter' locations and/or are unwilling to pay the price of agglomeration diseconomies (congestion, high land, property or labour costs).

These expectations were broadly confirmed in the case study areas, all of which have experienced relatively similar changes in their economic geographies. Detailed analysis of the dynamic locational characteristics of a variety of key sectors within each of the case study metropolitan areas/city-regions can be found in Appendices C2-C5. Overall, however, broad similarities hold true despite an important difference between the areas focused on Barcelona, Lyon and Manchester, which have experienced a significant transition from a historically high manufacturing base to one that is more dominated, at least in terms of employment, by service sectors, and that focused on Dublin which, as a result of delayed industrialisation in Ireland, has experienced growth rather than contraction in manufacturing output and employment since the 1980s.

In broad terms, each of the metropolitan core areas analysed by the study – dominated by the central administrative city but extending beyond them in all cases – has experienced strong expansion in service sector activity covering various producer services (finance, professional and business services, high level public services) and

the consumer services (retail, cultural industries, entertainments, tourism and leisure etc.) that have long accompanied their traditional regional roles but have expanded as a result of the level of demand that a growing and relatively affluent daytime population brings. This expansion has been accommodated in part through the commercial 'densification' of city centres and the re-use of city centre fringe areas formerly devoted to industrial or port uses.

By contrast, high value manufacturing and logistics activity, along with lower value 'back office' service functions, typically group together around major public and private transport arteries on the fringe of the metropolitan area that enable ready access to the core area but avoid some of the costs (price, availability and size of suitable sites or properties, congestion and accessibility constraints) of a more central location. Depending upon the degree of internationalisation of the business in which they are involved, firms in these categories often place particular value on access to an international airport (especially in the cases of Barcelona, Dublin and Manchester). In all cases, though, case study interviews suggested that firms in both central and metropolitan fringe locations view access to a suitably skilled workforce – often the product of what in all cases are nationally significant, locally-based universities – over other locations. In short, they rely upon urbanisation economies.

By contrast, traditional industries tend to survive in pockets outside the metropolitan area, within the wider city-region, often in less accessible locations. Some of the smaller urban areas in which older industries have typically been clustered are in decline as the localisation economies that once sustained them fail to adjust to global market competition whilst others have witnessed the modernisation of traditional sectors on the basis of new products

and more specialised, niche markets. Others have been transformed by new residential development and nowadays function more as satellites or dormitories for commuters to the job-rich conurbation core or as second choice locations for households that are increasingly priced out of metropolitan housing markets.

3. The evolution of metropolitan/city-regional governance arrangements in and for the case study areas

The evidence considered in previous sections has shown that all the case study areas examined are characterised by comparatively strong economic performance in the years leading up to the recent global economic downturn. To the extent that the study has been able to analyse more recent changes, it also suggests that these areas have been more resilient, in the face of ongoing economic shocks, than those occupying lower positions within their respective urban hierarchies. This pattern of growth and resilience, in turn, has been associated with relatively similar geographical patterns of sectoral and locational change, driven by new agglomeration economies.

If the relationship between tiers/units of metropolitan/city-regional governance and economic performance were a close and direct one, we might expect some similarity in governance arrangements at this scale across the four cases and some differences in the way they are set up or function relative to others within their national contexts. The degree of similarity in these respects is assessed below. Two other possibilities should also be considered, however, namely that (a) such governance arrangements make very little difference to development patterns or (b) their contribution has to be seen in relation to other factors that shape the degree and pattern of economic change. These are considered in the next section.

Long run changes in the evolution, role and functions of metropolitan/city-regional forms of governance for the case study areas were examined in the study's mid-term report. A summary of

the relevant historical narratives for each area can be found in Appendix C6. Detailed analyses of changes in the more recent period covered by the econometric analysis are set out in individual case study reports (Appendices C2-C5). In summary, however, and bearing in mind that all 'intermediate' levels of governance form only one part of multi-level systems in which the national and local scales are the most established – and often constitutionally protected – it might be expected that metropolitan/city-regional governance arrangements would most influence patterns of economic change where:

- They are able to co-ordinate the efforts of municipal governments most effectively; this should be easier when there is a relatively low level of fragmentation at municipal level (which reduces co-ordination costs) and municipalities have sufficient autonomy and power to 'deliver' their responsibilities with respect to agreed and co-ordinated metropolitan/city-regional activities,
- Metropolitan/city-regional governance is strongly institutionalised and can draw upon a significant level of autonomy and capacity as well as clearly recognised and effective leadership in policy spheres that manifestly influence economic development, and
- The economic importance of metropolitan areas/city-regions is recognised formally at higher levels of governance (regional and national) and/or acted upon at these scales as a result of the less formal influence that particular metropolitan areas/city-regions can mobilise.

Table 1, below, assesses each of the case study areas against these three broad criteria. It shows there to be significant variation between the case study areas but also that none of them possess the full set of characteristics that might be expected if

metropolitan/city-regional institutions were to have a strong *independent* effect on patterns of economic change.

Table 1: Multilevel contexts of metropolitan areas/city-regions

Case study	Barcelona	Dublin	Lyon	Manchester
Characteristics				
1. Municipal level				
Degree of local administrative fragmentation	High	Low	High	Low
Municipal autonomy	Medium	Low	Medium	Medium-Low
2. Metropolitan/city-regional level				
Relevant institutions	Province of Barcelona (city-region) + various metropolitan institutions & networks (variable geographies)	Dublin Regional Authority	Grand Lyon (metro) Région Urbaine de Lyon (city-region)	Greater Manchester 'family' of metropolitan institutions
Autonomy	Low	Low	Medium	Medium-Low
Capacity	Low	Low	High	Medium
Clarity/strength of leadership	Low	Low	High	Low in principal, high in practice
Economic development focus?	Variable	Yes	Yes (latterly)	Yes
3. Regional & national levels				
Recognition of city within formal spatial development plans/policies	Low	High (due to capital city status)	Medium	Low
Informal influence on regional & national policy & investments	Low, overall, but variable	Low	Medium	Medium

In broad terms, the 'direction of travel' with respect to metropolitan/city-regional institutions – towards greater institutionalisation, improved capacity and autonomy, a stronger

focus on economic opportunities and challenges, clearer leadership and greater 'vertical' and 'horizontal' influence – is similar in all cases but each case study area has reached its current (and very different) stage on this common journey via a different route. Three sets of differences are particularly apparent.

First, experiences with the institutionalisation of metropolitan/city-regional governance have proven uneven, with important variations appearing in the extent to which institutions and networks at this scale have become stronger, incrementally, over time. Indeed, in both Barcelona (in 1987, through reforms introduced by the Autonomous Community for Catalunya) and in Manchester (in 1986, following national government reforms), metropolitan authorities were *abolished*, not because they were seen as ineffective or unnecessary to the process of encouraging or managing agglomeration economies but because they were seen as threats to higher levels of government which, at that point, were controlled by political parties or coalitions different to those that wielded most influence within the metropolitan area. The subsequent development of metropolitan institutions and networks in these two cases have been encouraged to a limited extent by higher levels of government but mainly represent 'bottom up' attempts to recreate metropolitan governance capacity and influence. By contrast, the long run evolution of Greater Lyon's indirectly elected metropolitan authority ('Grand Lyon') has witnessed relatively consistent strengthening of metropolitan capacity, strategic coherence and ambition. The same can arguably be said of the much more recent and tentative development of a much weaker form of network governance for the Dublin city-region.

Second, there are significant differences in the extent to which institutions and networks at the relevant scales have been designed

specifically in response to economic opportunities and challenges. Here, there are contrasts between Barcelona and Lyon, on one hand, and Dublin and Manchester, on the other. In the former cases the continued acceptance, at national (and regional) levels, of highly fragmented local administrative systems in which the majority of municipalities tend to be small and fiscally weak has led to the development of governing arrangements which view inter-municipal co-operation as a means of strengthening public service delivery capacities rather than, or at least in advance of, the pursuit of greater economic competitiveness. In the French case, attempts to overcome the problems of administrative fragmentation without major structural reform have seen the gradual development of various sorts of 'communautés' (of which the communauté urbaine de Lyon, nowadays 'Grand Lyon', established in 1969, is one of the earliest examples).

In the Spanish/Catalan case, it is manifested in two tiers of indirectly elected government: the province, covering the Barcelona city-region (i.e. the central metropolitan area and the network of small towns in an 'outer ring' of the city-region, funded mainly by the Spanish state, and; counties, funded largely by the Autonomous Community, whose geographies split up the Barcelona metropolitan area. The main role of both of these sets of bodies is to provide technical support to the weaker municipalities rather than design and deliver development strategies for their respective areas. In the Lyon case, greater institutional autonomy and capacity plus a higher level of national support has enabled Grand Lyon, over time, to broaden its scope and assume a key role in economic development and planning. By contrast, in Barcelona, attempts to draw municipalities together on development issues have largely occurred through less formalised metropolitan bodies (including the Mancomunitat of Municipalities and the Consortium of the

Metropolitan Area of Barcelona, established voluntarily in 1988 and 2007, respectively) whose attempts to co-ordinate municipal policies and approaches to economic development at the metropolitan, as opposed to city-region, scale have been organised largely through the planning process and lobbying for the recreation of formal metropolitan governance capacity.

In the more centralised government systems of the UK and Ireland, by contrast, structural reforms that created larger local authorities and less fragmented administrative systems were carried through more easily by determined national governments. The existence of relatively large, multi-purpose local authorities in these two cases has meant that metropolitan governance arrangements have had less reason to concentrate on routine service delivery and more scope to concentrate upon strategic, development-related issues that are best addressed at a larger geographical scale. Paradoxically, however, a combination of limited fiscal autonomy at the local level and strong, constitutionally superior national governments in both cases has encouraged vertically integrated approaches to decision-making in different policy areas that are not easily co-ordinated at the metropolitan/city-regional scale.

The third important dimension within which experiences vary is with respect to the 'favourability' of the case study metropolitan areas/city-regions which can either be enshrined in formal regional or national spatial development plans and frameworks or achieved, informally, through the influence that metropolitan/city-regional institutions are able to achieve, at regional and national scales, over policy agenda and spending choices. With regard to the former, Dublin and Lyon could be argued to have advantages; Dublin by virtue of its capital status and the recognition, within national spatial planning frameworks that have increasingly been linked to

national (and European) expenditure decisions, of its critical role within the national economy; Lyon because of the reasonably consistent emphasis placed on the development of 'secondary growth poles' by elements of national government and the broader support that French decentralisation reforms and encouragement of inter-municipal co-operation has brought. By contrast, neither Spanish nor UK Governments have clearly articulated, formal policy frameworks that recognise the differential contributions of metropolitan areas or city-regions to the national economy. The favourability of Manchester and Barcelona has also been further constrained, in formal terms, by the fact that 'regional' levels of governance – the constitutionally superior Autonomous Community in the former case, various non-elected regional bodies in the latter – typically recognise the economic importance of their principal metropolitan area/city-region in theory but, in practice, have tended to view the claims of other, less vibrant parts of Catalunya and England's North West region as higher priorities.

The picture is subtly different, however, with respect to favourability that is 'earned'. The case study findings suggest that differences, here, are partly a function of leadership and partly of executive capacity. In these respects, Dublin and Barcelona are less well-placed because of the relative weakness of metropolitan/city-regional institutions and networks and the absence of clear leadership at these scales. Lyon and Manchester have tended to fare better in part because the executive capacity that has been created at the metropolitan level is more extensive. In terms of leadership, however, it could be argued that Lyon's comparatively high level of influence at regional and national levels is a *product* of prevailing governance arrangements whereas Manchester's influence has expended *despite* the context in which it has developed.

This is partly because, as noted above, the French national policy context has been more consistently supportive of inter-municipal governance and the strengthening of 'second tier' cities over a long period. Partly, though, it reflects the particular model of leadership that applies for Grand Lyon, whereby the Mayor of Lyon chairs the indirectly elected metropolitan authority, and partly the status of large city Mayors, who can simultaneously hold high office at higher levels of government within the French political system and tend, in any case, to be important figures within national political parties. By contrast, leaders of UK local authorities, even in the case of big cities, have no necessary national status and there is no convention whereby leaders of Manchester City Council are given formal oversight of the variety of institutions created at the metropolitan level. As the Greater Manchester case study (Appendix C2) explains, coherence and discipline at the intra-metropolitan scale has been created through a strong sense of interdependence between the authorities covering the core employment area at the centre of the conurbation and the most closely connected suburban areas, on one hand, and a close political relationship between the city's leadership and the long-time leader (representing the most peripheral northern metropolitan local authority) of the Association of Greater Manchester Authorities, the main umbrella organisation for the metropolitan area, on the other. Metropolitan influence at the national scale, on the other hand, has been built up largely through the City's track record in delivering economic development and regeneration projects and programmes over a 20-year period.

4. Have metropolitan/city-regional governance arrangements made a difference?

If the four case study areas were to be 'ranked' according to the longevity, consistency, capacity and influence of the inter-municipal institutions and networks that have been created at a scale approximating the metropolitan area or city-region over the last 30-40 years, Lyon would appear at the top, followed by Manchester, Barcelona and Dublin. This stark summary offers a general indication as to the comparative effectiveness and impact of the case study metropolitan/city-regional governance arrangements but it does not, in itself, explain how governance arrangements at this scale have contributed to the patterns of economic change that were described in Section 2. In attempting to identify the links involved, the case studies used a series of interviews to assess which key interventions by public agencies were perceived to have most influenced metropolitan/city-regional patterns of agglomeration and then worked backwards to identify the contributions that the particular forms of governance that had been developed in or for their areas had made to the total public sector effort.

Detailed findings for each of the case study areas are set out in Appendices C2-C5. Overall, though, they suggest that an understanding of the link between metropolitan/city-regional tiers or units of governance and the effective management of agglomeration economies which is derived from statistical correlations underplays the sheer diversity and messiness of real world institutions and relationships and the economic influence they wield. In particular, it overlooks four key factors that need to be acknowledged. First, and most obviously, the locational behaviour which collectively produces and reproduces the patterns

summarised in Section 2 is primarily the product of myriad individual firm-level and household decisions taken for a variety of instrumental reasons and not as a result of the designs or preferences of public policy-makers. It helps public policy-makers to be able to draw upon intelligence about what drives these preferences and might cause them to change but it remains the case that they cannot be shifted radically or quickly on anything more than an incremental, highly targeted and selective basis.

Second, if it is right to observe that the public sector in general can only influence locational decision-making indirectly, by contributing to the way business (and residential) environments change, this is emphatically true of metropolitan or city-regional governance arrangements which, because they are not as firmly 'embedded' as the principal institutions of government at the national and local (and, in the Spanish case, regional) scales, necessarily have to work within a context where they can, at best, only hope to influence some of the major investment and policy decisions that impact most significantly upon locational behaviour and work within the framework they effectively provide. Examples of major, 'game-changing' factors that are shaped by the public sector raised in case study interviews included preferential corporate tax regimes, critical communication infrastructures, the availability of highly skilled or high potential labour (including the presence of research intensive higher education institutions), international connectivity through a globally connected hub airport, and the clarity, decisiveness and speed of public planning processes.

Third, if the capacity to influence the geography of economic change is distributed, vertically, across different levels of government, they are also separated, horizontally, into different policy areas in which decision-making criteria rarely acknowledge, at least formally, the

spatial implications of policy choices and investments. The classic example, here, is transport investment, where major decisions are generally based on considerations of safety, speed and predictions of demand for travel rather than, for example, the effect of a new motorway on the attractiveness of employment sites in its vicinity or of 'landing' one of the stops on a high speed rail network on the locational preferences of firms that rely heavily on face-to-face meetings with clients or partners distributed over a wide national or international marketplace.

Fourth, and leading on from this, understandings about the nature and likely future implications of agglomeration economies remain relatively undeveloped – or at least poorly articulated - within public policy communities and are not seen as critical to many policy or funding allocation decisions. Within our case studies, the notion of agglomeration was one of the conceptual building blocks for Manchester's 2009 Independent Economic Review but even in this unusual case the extent to which the analysis the Review provided is widely understood and accepted within policy communities in Greater Manchester (and beyond) whose thinking and behaviour, in principle, would need to change in order to accommodate its messages is, as yet, questionable.

Taken together, these factors mean that the line of causality that it is implied when the question 'what impact have metropolitan/city-regional institutions had upon agglomeration economies?' is posed also works in the opposite direction. In other words, the forms of governance described in this report can be interpreted as partial, inevitably incomplete and uneven attempts to assemble the capacity, autonomy and forms of influence that make it possible to achieve greater coherence in public policy-making in relation to the economic performance and potential of complex and fragmented

territories. Metropolitan/city-regional governance, in short, is as much an *outcome* of the search for these conditions as it is a *mechanism* that can embody and intensify them.

None of these observations suggest that institutions and networks of metropolitan/city-regional governance have no impact upon agglomeration economies. Rather, the case study work suggests they have proven to be differentially important *influences* on the way public policies and investments are 'captured' and co-ordinated to the economic benefit of particular territories. Rather than repeat the case study analyses of the way in which this influencing and co-ordination role operates on a case-by-case basis, it is more helpful to summarise the various characteristics, observable from 'best practice' across the case studies as a whole, that collectively represent an 'ideal type model' for the effective promotion and management of the spatial economic re-organisation that has arisen from new agglomeration economies. These are outlined below.

(a) A supportive national/regional policy context

In principle, a supportive national (or, in strongly devolved systems, regional) context should provide clarity about high level understandings of, and aspirations for, patterns of spatial development and the roles played, within them, by leading metropolitan areas/city-regions. Such understandings should be linked, in turn, to core, long-term investment plans and choices with respect to the 'big ticket' items (road and rail infrastructure, connectivity by air, highly skilled labour supply, clustering of high level public administration, 'megaprojects') that most shape the context in which agglomeration economies are realised. It should also recognise the importance of devolved, strategic capacity at the

metropolitan/city-regional scales that is capable of co-ordinating strategies and activities.

(b) Strong technical capacity at the metropolitan/city-regional scale

Effective co-ordination of policies at the individual metropolitan area/city-region scale is impossible without strong technical and analytical support in key policy areas relating to economic development (e.g. in transport, land-use and environmental planning, labour markets and skills, sector development, inward investment, marketing). In theory, such capacity can be brought together 'virtually', across institutions, but the evidence of the case studies strongly suggests the need for independent, dedicated capacity, brought together in (ideally) one organisation that is capable of formulating a broad, future-orientated strategic overview that can be translated into a series of priorities, programmes and projects.

(c) 'Vertically' influential metropolitan/city-regional institutions or networks

Strong technical capacity is essential to realising the opportunities arising from the 'favourability' that a supportive national/regional policy context can provide. It is clear from the case studies, though, that active, focused political and executive leadership on behalf of metropolitan areas/city-regions is not only important to the way such opportunities are grasped, it can also, in part, help create those opportunities by influencing policy agenda and providing a context for policy integration where it can be demonstrated that metropolitan/city-regional aspirations can support the delivery of national/regional policy goals. Strong, accountable metropolitan/city-regional institutions clearly help, in this regard, as

does serendipity (e.g. periods in which political leadership at different levels of government is exercised by the same party). The case studies suggest, however, that leadership from the 'core city' at the centre of the metropolitan area/city-region is pivotal to any successes that are achieved in terms of 'vertical influence'.

(d) Unifying vision and narrative

The high degrees of functional and administrative fragmentation that are typically found in complex metropolitan areas/city-regions mean that strategy development processes can easily come to be seen as either exclusive and technocratic, narrow attempts at institutional power-broking or 'motherhood and apple pie' exercises that describe generalised, strategic aspirations but provide little or no indication of how they might be realised. The challenge for policy-makers, if they are to influence and gain the support of a broad range of independent stakeholders and the broader civil societies within which they sit, is to provide visions and narratives for metropolitan areas/city-regions that are rooted in evidence and a realistic analysis of specific strengths and opportunities but are also aspirational and capable of providing a common reference point for a variety of future development efforts. Ideally, they also need to be clear about the relationship between the metropolitan area and the broader city-region.

(e) Strong 'horizontal' connections across metropolitan areas/city-regions

The importance of strong and consistent leadership on behalf of metropolitan areas/city-regions in influencing higher levels of government applies equally to 'horizontal' connections, both between municipalities and to key public and private organisations

and agencies whose support is needed to realise strategic goals and development opportunities. The evidence from the case studies is that 'development coalitions' with non-municipal bodies and businesses tend to be driven primarily by individual municipalities in relation to specific, localised opportunities but that metropolitan/city-regional institutions and networks are, or can be, important both in shaping the context within which such opportunities are pursued and, where sufficient capacity exists, in being an active partner in strategically important schemes.

(f) Recognising and dealing with the environmental and social implications of development

The metropolitan and city-regional governance arrangements examined by the study have largely been developed in response to strategic economic challenges and opportunities (or have evolved in order to take on such a role). Their long term sustainability and legitimacy, however, depends on their ability to support patterns of spatial development that serve environmental and social as well as purely economic goals. This is recognised to differing degrees across the case study areas and raises a variety of complex co-ordination issues about how metropolitan/city-regional governance arrangements relate to policy-making (e.g. with respect to climate change mitigation and adaptation) and service delivery (e.g. in housing and education) that tend to be dealt with at different scales. In some cases, however, there is evidence to suggest that a more holistic approach to economic development is emerging which focuses more specifically on the economic opportunities that a transition to low carbon future brings and takes on strategic responsibilities in relation to promoting public service modernisation in 'social' as well as economic and related fields.

5. Implications for future policy, institutional design and research

The ideal type model elaborated in the previous section provides a check-list of actions that can guide processes of institutional development and policy design *if* priority were to be given to adjusting to the effects of the new agglomeration trends identified by the study. The key question, however, is whether that is a feasible expectation. There are two considerations, here. One is whether the patterns of spatial economic change identified by the study are likely to persist in the future. The other concerns the extent to which the implications of current or future spatial economic development patterns are likely to shape policy-making processes. These two issues are linked but they are not the same.

Beginning with the first of these issues, it is clear that the spatial development trends identified by the study intensified during a period of global economic expansion and look set to continue through the re-adjustment process that is resulting from the 2008 global financial crisis (and its extensive knock-on effects). Whether they will continue into the next period of economic upturn, however, is a critical issue. On one hand, the study found evidence to support the view of critics who argue that the conditions which underlay the pre-recession 'growth model' were unsustainable and are unlikely to be recreated. Some of the 'boom' conditions that characterised rapid metropolitan growth in the case study areas were, without question, sustained by a variety of factors – liquidity in global financial markets, cheap credit, speculative real estate investments, high levels of consumer spending and strong growth in the business services industries that facilitated each of these economic drivers - that will not play such a strong role in the future.

At the same time, however, the boom period, whilst it clearly accelerated patterns of change, can be seen as simply the latest phase in a more fundamental re-orientation of the European space economy which will inevitably slow as a result of the recession and the recovery period but will not go into reverse. The implication of this interpretation is that the importance of agglomeration economies will continue to grow and that the stretching of urban hierarchies that has accompanied structural change will continue.

Should that be the case, whatever form a 'post-financialization' growth model takes in Europe, it is likely to be dominated by a smaller number of key metropolitan areas and city-regions than was the case during the late industrial era. This will pose acute policy challenges at European, national and regional levels which are likely to see an increase in the tension that already exists between non-spatial, competitiveness-based policies, which have tended to drive or be driven by agglomeration processes and challenges, and spatial development and cohesion policies whose implicit mission, traditionally, has been to resist them.

Resolution of this tension will not be easy. Indeed, it may not be faced, for a variety of political, economic and social reasons. The evidence from our study suggests that governments at all scales find it difficult to face the consequences of agglomeration economies and the uneven spatial development patterns to which they give rise. Their 'normal' response is twofold. On one hand they continue with policies that are underpinned by notions of fairness and equal access to services. On the other, they deliver 'place blind' policies that sometimes respond to the dilemmas created by agglomeration (e.g. road congestion, house price inflation) and sometimes actively drive them. Moving from such a policy stance to one that overtly acknowledges that governments

make spatial development choices is a huge challenge but the outcome will not necessarily be regressive *if* it is based upon the effective management of agglomeration processes rather than a policy framework that ignores or attempts to counter their significance. Indeed, it could be argued that a policy regime that supports productivity improvement in areas of high potential in order to secure the means to support sustainable growth and adjustment in areas with lower potential has greater long-term prospects for success. At both the European and national level, however, it will mean developing policy instruments and institutional arrangements that 'go with the grain' of the agglomeration processes identified in the study and build on the capacity and potential of a wide range of 'second tier' metropolitan areas and city-regions such as our case study areas.

A potentially rich research agenda arises from these observations about the way in which the implications of future agglomeration patterns can be faced more overtly within policy process and the role that greater autonomy, capacity and influence on the part of key metropolitan areas/city-regions can play in ensuring they make a full contribution to European competitiveness and territorial balance in the future. The dilemma that currently arises is that there is relatively little research that can help to understand the current and future challenges arising from agglomeration forces in a structured way. Three lines of related inquiry might usefully serve this purpose and could build usefully on the approach to agglomeration analysis adopted here.

The first addresses an issue that is ostensibly technical, but affects the capacity of researchers to make greater sense of contemporary European spatial development patterns. This study has hopefully demonstrated the advantages of taking an interdisciplinary

approach to the complex interaction between economic, institutional and policy processes but it was constrained by the paucity of data available at the appropriate scale. Some attempt to fill this gap through a focused attempt to define the 'areas of influence' around key European cities more effectively, drawing on various 'flow' data such as that used for the METROBORDER project, is needed to give greater specificity and dynamic understanding to established notions such as MEGA regions. Such a project would enable better quality comparative work but it would mean relaxing the demand, often placed on quantitative European spatial research, that an appropriate classification system should cover all of Europe and avoid any spaces in or overlap between units of analysis. The ostensible comprehensiveness and neatness produced by this requirement, judging by the experience of this study, tends to be achieved at the expense of sophisticated understanding.

A more speculative project, designed to transcend the relatively unimaginative approach to 'spatial futures' that are commonly employed in economic and employment forecasts, would comprise a more qualitative, scenario-based exploration of the potential, flexible future uses of urban space that is not dominated by limiting assumptions derived from current lifestyles and practices (e.g. that urban workforces will travel to work, full time, in a single job, located in a fixed workplace, for a fixed number of hours per day, largely from within a defined travel-to-work area). If agglomeration economies continue to intensify, there will be a need to consider radically different options for the more flexible and intensive use of urban space that have yet to be explored systematically.

Third, and partially related, there is a case for going beyond the analysis of the 'governance of economic competitiveness' that effectively lies at the heart of the CAEE project and to consider

whether the creative processes involved in the vertical and horizontal alignment of policies by and through metropolitan/city regional institutions and networks are being, or can be, mobilised and adapted in order to pursue low carbon futures. There is already significant research on (a) bargaining processes with respect to carbon emissions targets at the international scale, and (b) sub-national responses to the challenge of climate change adaptation and mitigation through the application of environmental regulations. Given that environmentally sustainable futures will be an increasingly important policy goal, however, and in view of the fact that there is a growing recognition that emissions targets can only be achieved through fundamental behaviour change by organisations and citizens, a review that approaches the sub-national governance of climate change mitigation and adaptation using an inter-disciplinary methodology similar to the one employed.

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