The ESPON 2013 Programme

SCIENTIFIC REPORT

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

TABLE OF CONTENTS

1. WHY DO SECOND TIER CITIES MATTER? 1-7

2. HOW DO SECOND TIER CITIES PERFORM & COMPARE WITH CAPITALS? 8-73

3. HOW DO NATIONAL & LOCAL POLICIES AFFECT SECOND TIER CITIES? 74-610

4. SECOND TIER CITIES: ROOTS OF PERFORMANCE AND PROSPECTS 611-616

5. POLICY MESSAGES: WHY INVEST BEYOND THE CAPITALS IN AN AGE OF AUSTERITY? 617-621

Annexes

1. Policies for Second Tier Cities in Europe: Approaches, Issues and Challenges
2. Competitiveness of Second Tier Cities in the Knowledge Economy Revisited
3. Performance of Second Tier Cities: What Does the Literature Tell us?
4. Review of National, Regional and City Ranking Studies
5. Bibliography
6. Questionnaire
7. Selecting Second Tier Cities
8. Boundaries
9. Indicators Developed & Datasets Provided to ESPON Database
10. Figures, Tables, Maps and Boxes
11. List of Missing Data

The ESPON 2013 Programme

1.

WHY DO SECOND TIER CITIES MATTER?

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Growing interest in capital and second tier cities

1.1 There is huge interest in the economic contribution and future of Europe's cities. Their concentration of economic, physical and intellectual resources makes many of them centres of prosperity, creativity, culture, communication and innovation - the dynamos of the European economy. Some play important roles as the command and control centres of a rapidly developing global economy. But at the same time many cities are experiencing declining economic competitiveness, growing social exclusion and physical and environmental deterioration - making them a drain on Europe's economic performance and a threat to its social stability. There is also growing interest in the economic contribution that different kinds of cities make. In particular policy makers across Europe are trying to develop ways in which capital and second tier cities can complement – rather than compete with – each other to make the maximum joint contribution to national performance. The policy debate takes different forms in different countries, depending on the relationship between the capital and second tiers. It is particularly, although not exclusively, significant in the new member states where capitals are especially dominant. It has already encouraged a more explicit and strategic territorial debate in many of those countries. But the issues are common to all countries. They have important implications for decisions about priorities and funds, at national and European level. They pose the question of why should policy makers invest beyond the capital cities in an age of austerity. This report provides some answers.

What are second tier cities?

1.2 There are many typologies of cites. All have their limitations. We chose to explore the concept of second tier cities. We define them as those cities outside the capital city whose economic and social performance is sufficiently important to affect the potential performance of the national economy. It does not imply that they are less important than the capital cities. It certainly does not mean that they are second class. And it does not mean they are the second city – because there is only one in each country. And second tier cities are not all the same – they vary enormously. Sometimes they are very large regional capitals. They can be the second city of the country with huge national significance – for example Barcelona, Munich, Lyon in this study. But many are much smaller. However, while they differ in many respects, second tier cities can play comparable national economic roles. In this study we do explore the differences between them and their different challenges. But we also examine them as a group and assess their overall national and European economic contribution. The 124 second tier cities in this study constitute almost 80% of Europe's urban population. They lie between the capital cities which contribute a huge amount to their national economy and the many smaller places which contribute rather less. They are the crucial middle of the urban system. In many, although not all, cases, second tier cities already contribute a lot to national performance. In many more cases they could contribute even more - with greater national support.

The economic and fiscal crisis makes the policy issues more pressing

1.3 The policy debate about the contribution of capital and second tier cities will become more important during the next decade as economic recession and fiscal problems threaten to undermine the real achievements made by many second tier cities in Europe recently. In the past decade, cities in many countries improved their economic performance and made a growing contribution to national economic welfare. But it was a result of high performing national economies and substantial investment of public resources. Those conditions will not be found during the next decade. Many underlying economic and social problems in cities which had been masked by the boom have already been intensified by the crisis. There is a risk that economic and fiscal problems and the competition for scarce public and private sector resources will limit the growth of second tier cities and widen gaps within them and between them and the capitals. If so, the threats to a balanced territorial system across Europe will increase. Declining public resources means it crucial that governments are more transparent and explicit about their territorial investment plans – whether they invest in

their leading or lagging cities, bigger or smaller, or capital or second tiers. All governments will need to do more with less and find the most efficient, way of addressing their problems. This obviously applies to Commission policy. At a European level, the importance of these issues has been underlined by the publication of EU2020, the 5th Cohesion report, the Territorial Agenda 2020, the work of the Hungarian and Polish Presidencies on urban and territorial policy and the Commission's proposals for the reform of structural fund after 2013. All underline the need for explicit discussions about cities and their contribution to balanced territorial development across Europe.

How does this report contribute to the policy debate in Europe?

1.4 This report addresses many of the issues. It assesses the performance of, policies for and prospects of second tier cities across Europe. It is based on a wide range of evidence: literature, interviews with policymakers and researchers, reviews of national policies, significant quantitative data about 124 secondary and 31 capital cities across 31 countries and 9 studies of second tier cities drawn from across the whole ESPON territory. The cities are: Tampere, Cork, Leeds, Barcelona, Lyon, Turin, Munich, Katowice, and Timisoara. The Scientific Report contains much more detailed evidence and analysis than is possible to present in this short report.

What are our key arguments?

1.5 The report examines five key arguments about the performance and prospects of cities and urban policy across Europe. *National policies and governance matter.* First, it argues that the performance of second tier cities is significantly affected by national government policies - implicit or explicit, direct and indirect. Explicit urban policies – those which specifically focus on particular territorial targets - as well mainstream policies for infrastructure, skills, investment, connectivity, research and development which have less explicit territorial dimensions - all affect the ways in which cities perform. The report argues that countries whose governments pay more attention to the territorial and urban impacts of those policies will have higher performing cities and national economies as opposed to those who do not. In addition, second tier cities will perform better where national, regional and local policy making systems are horizontally and vertically aligned and focus upon economic place making.

1.6 *Deconcentration of investment and decentralisation to places matter*. *But mature national-local relationships are also crucial.* The second argument is that decentralisation of decision-making and resources and deconcentration of investment will lead to more high performing second tier cities. Iinstitutional and financial decentralisation from national to regional and local levels of government will reduce the costs of overconcentration on the capital and maximise the contribution of second tier cities to national competitiveness and welfare. However, two conditions must be met for this to happen. First, national governments must provide regional and local governments the powers, resources and capacity needed to deliver these responsibilities. Otherwise they will be programmed to fail. There must be real not symbolic decentralisation. The second condition is that national governments cannot abdicate responsibility for the successful delivery of those policies. The key governance challenge is to get transparency, clarity and agreement upon the division of responsibility for the delivery of shared policy commitments. In other words it requires genuine multi-level governance. In turn that requires significant institutional and political maturity. But if those conditions are met, the benefits of a system where public and private investment and resources are spread across a range of different sized cities in a wider territory in the long run will be greater than those in a more centralised system where investment is concentrated in the capital. National economies will be more successful when the gap in economic, social and environmental performance between the capital and second tier cities is smaller. And more successful national economies will have more high performing second tier cities.

1.7 *Local factors – especially leadership - matter*. Cities are path dependent and are constrained by external factors - historical, cultural, structural, political and institutional. But those factors are not determinant. Places that start in similar economic and social positions often have very different development trajectories. The economic performance of cities will depend upon their strategic capacity to manage their constraints. Local partners and leaders can use their resources and powers to maximise their city assets and advantages to be successful. Leadership can come from a variety of sectors – public, private and third sectors – and is usually a combination of all three. Although individual players can make a difference, leadership is essentially a systemic rather than a personal quality. It will draw upon a range of assets – political, financial, territorial, institutional and intellectual. It is a process and a relationship. The scale and quality of leadership is not finite but can be increased. Leadership is the institutional mobilisation of all resources and partners to deliver successfully agreed long term ambitions through systematic, coherent strategies and policies. The key issues for leaders are vision, strategy, governance, partnership, policy capacity, learning and delivery.

1.8 *The key drivers of territorial performance are innovation, diversity, human capital, connectivity, place quality, and strategic governance capacity*. Places' performance on those drivers shapes their trajectory. In particular, national and local policies on those key drivers are crucial. The drivers that can be most directly influenced at city-regional governance level are place quality and strategic capacity. The others – innovation, major infrastructure investment, human capital, economic diversity and connectivity – are more directly influenced by national and regional policies. Influencing these drivers demands successful multi-level governance. And multi-level governance helps ensure that place-based policy making does not focus narrowly on local issues but has a wider strtageic, territorial ambitions.

1.9 *Territory and places matter more not less in a global world*. This argument underlines that globalisation makes the governance capacity of place more important. It means that governance will be increasingly multi scalar. It also means that economic governance should be located at the highest achievable spatial level – the city region or wider functional economic area. It also emphasises that second tier cities do not operate at a single spatial level. They need explicit strategies to shape the different territorial roles they play at regional, national and European level.

Context of the study

1.10 There has been a resurgence of academic interest in this area following on from the earlier, pioneering work of Alfred Marshall on localised industrial districts, Gunnar Myrdal on cumulative causation and François Perroux on localised industrial growth and growth pole development. And there has been a rediscovery of the importance of agglomeration and urbanisation economies and externalities in emerging patterns of urban and regional economic growth. A number of different theoretical frameworks currently vie for attention including, notably, export-based theories, neo-classically-based endogenous growth theory and geographical economics, institutional and evolutionary theories, and sustainable development approaches. All have different policy implications (Martin, 2005; Pike, Rodríguez-Pose and Tomaney, 2006).

1.11` Geographical economics and the so-called 'New Economic Geography' focuses, for example, on the external economies and increasing returns to scale associated with regional industrial specialisation and concentration and the urbanisation economies from agglomeration of firms from different industries that underpin the growth of urban locations (Krugman, 1990, 1991, 1993; Fujita et al, 1999; Dunanton and Puga, 2004; Kitson et al, 2004 and World Bank, 2009). The central role of geographical clusters and concentrations features in Michael Porter's highly influential work, in policy terms, on the economics of competitive advantage (Porter, 1990, 1995, 2000).

1.12 Agglomeration economies also feature in macro-structural economic transition theories which link local and regional growth potential to the transition from the macro-economic era of mass production to the current era of 'flexible specialisation' (Piore and Sabel, 1984; Storper and Scott, 1988; Scott, 1988). Central to 'flexible specialisation' is the re-emergence of 'industrial districts' made up of densely located networks of small firms better able to respond to changing markets than their mass-production predecessors.

1.13 The ESPON project on 'The Case for Agglomeration Economies in Europe' (CAEE) examined the relationship between agglomeration economies and city-regional/metropolitan governance and has produced some significant findings for our research (CAEE, 2010). First, it demonstrates how the project's three secondary city case studies have all experienced growth rates that were high in relation to both European and their national contexts. The cities were not just beneficiaries of growth but also important drivers of it. Second, it shows that agglomeration economies have become more important in Europe. Localisation economies are the advantages that firms in a single industry, or set of closely related industries gain from being located in the same location. They have lessened in relative importance to urbanisation economies that is advantages gained by firms, workers and households from city size, density and variety - as part of the broader overall shift to the 'knowledge economy'. This shift emphasises the importance of understanding 'intangible assets' in secondary city growth and we will focus on these in our analysis. Third, it emphasises that while agglomeration patterns are driven by a myriad of individual firm and household decisions there is still a role for policy in shaping the context in which those decisions are made through, for example, infrastructure, skills and education policies. This policy role is most critical at national level or with regional governments in strongly decentralised systems. Metropolitan governance, while more peripheral, still has a role to play but this more subordinate role needs to be more carefully specified. Again we will this policy dimension in our analysis.

1.14 Institutional and evolutionary theories of regional economic development have focused on the institutional arrangements and 'softer' factors like networking, trust and social capital that together provide externalities that encourage the emergence and subsequent growth of local and regional economies (Grabher, 1993; Maskell, 2002; Amin and Thrift, 1995). This literature has introduced the important concept of 'path dependency' and explored the factors enabling the shifting of development trajectories (Arthur, 1996; Simmie, 2006). Innovation, knowledge and learning have also become central ideas in institutional and evolutionary approaches to local and regional economic development focusing on how localities and regions can produce, absorb and make use of innovations and knowledge through learning (Pike, Rodríguez-Pose and Tomaney, 2006). Technological transfer and spillover underpin the development of regional innovation systems (Cooke and Morgan, 1998) and 'innovative milieux' (Camagni, 1996). Recent thinking emphasises the need to integrate understanding of both the emergence of technologically-based clusters and the specific role of policymaking - i.e. focusing on both evolutionary and constructive forces in cluster formation (Sölvell, 2009).

1.15 An emerging strand of literature emphasises the sustainability – in socio-economic and environmental terms - of local and economic development (Baker et al, 1997, Morgan, 2004). And there is growing interest in the links between urban growth and climate change. Air and noise pollution has always been treated as agglomeration diseconomies but the latter are now being extended to include wider environmental impact. 'Strong' versions of sustainable development challenge the very notion of growth and its spatial concentration.

1.16 The debates have tended to polarise with little interchange of ideas between, on the one hand, the formal modelling of economists developing 'geographical economics' and the so-called 'New Economic Geography' and, on the other, economic geographers and economic sociologists focusing more on evolutionary approaches that highlight the social and

institutional advantages of successful cities and regions (Sunley, 2000; Boschma, 2004; Boschma and Martin, 2010). And it is difficult to see how any consensus can be achieved given the very different theoretical frameworks and assumptions that the different approaches use (Jovanović, 2009).

1.17 We favour the evolutionary approach with its stress on the long-term historical trajectories of urban economies and the 'path dependent' nature of local economic development (Martin and Sunley, 2006 and 2009). A powerful argument has been made that the long-run evolutionary trajectories of cities rests on the interrelationships between the concepts of path dependence and local innovation systems, which provide the key dynamic of change (Martin and Simmie, 2008). And the developing work around urban and regional competitiveness (Camagni, 2002; Martin, 2004; Simmie, 2005;) emphasises the role of innovation alongside other key drivers of urban competitiveness including connectivity, human capital and quality of place as illustrated in the Figure 4.2 below. We agree with the arguments of ESPON's FOCI project that it is essential to take a broad approach to understanding the competitiveness of cities that integrates both urban specific factors and more classical competitiveness factors (FOCI, 2010). While we focus on the competitiveness of secondary cities, we also recognise the need to address the tensions and relationships between economic competitiveness and social cohesion (Ache et al, 2008; Power et. al, 2010; Musterd and Murie, 2010) and between economic competitiveness and environmental objectives (Haughton et al, 2010) for a fuller understanding of both the processes at work and the needs of policy.

1.18 We also argue that urban regional resilience must be seen as fundamentally conditioned by the building blocks and drivers of regional economic growth and competitiveness: innovation, infrastructure, sectoral mix and economic diversity, skilled and adaptable workforce, connectivity, place quality and strategic governance capacity. (Begg, 2002; Camagni, 1995; Pike, Rodríguez-Pose and Tomaney, 2006). The OECD's research on regional economic growth and regional development policy is important in this context. It has shown that regional growth is driven principally by such endogenous factors as the level and quality of human capital, infrastructure, innovation, the way labour markets function and the quality of institutions alongside factors like distance to markets and accessibility (OECD, 2009a&b&c, 2010 and 2011a&b). It has also shown how critical are the relationships between these endogenous factors (Garcilazo, 2010; Thompson, 2011). Thus, human capital and innovation can be seen positively to influence urban and regional growth in their own right. But infrastructure provision only influences growth when human capital and innovation are present. Infrastructure is a necessary but not sufficient condition for growth. Similarly accessibility influences regional growth. But this is conditional on the presence of innovation, infrastructure, human capital and agglomeration. And the relative weight of all these different factors depends, inter alia, on the level of development of individual regions. Importantly, there is no single path to growth. Opportunities for growth exist in all regions.

So how does this report deal with these issues?

1.19 The report has five sections. First, it assesses the economic performance of second tier cities and the gaps between them and capital cities in different states. Second, it describes the urban policy debate in different countries. Is the debate essentially about economic competitiveness or social cohesion? Do policy makers recognise the nature of the gap between the capital and other second tiers cities? Has government begun to target the economic importance of second tiers cities? It exemplifies those debates with a detailed discussion of the experiences of nine second tier cities. Third, it identifies the key messages about cities' performance and prospects. Finally it identifies key messages for policy makers at all levels of governance across Europe. Given the complexity of the relationships, the range of places and the quality of available data, the report does not claim to provide absolute proof of the arguments. But it presents a lot of persuasive evidence that policy makers should take these issues very seriously and examine how their decisions affect second tier cities. It shows that policy makers at least must be more explicit in

their territorial investment decisions in future. It suggests the more they can help second tier cities, the more they can help the nation – and Europe. And it suggests that in age of austerity there is a serious case for investing beyond the capitals.

The ESPON 2013 Programme

2.

HOW DO SECOND TIER CITIES PERFORM AND COMPARE WITH CAPITALS?

Jay Karecha, Richard Meegan, Michael Parkinson

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

CONTENTS

1.	Our approach	10
2.	Cities in national decision-making systems	13
3.	Urbanisation and population change	17
4.	Productivity and economic performance	23
5.	Employment	47
6.	Performance on drivers of competitiveness	53
7.	Second tier cities in the recession	65
8.	Key messages	72

1. OUR APPROACH

1.1 This section presents the results of our quantitative analysis of the performance of second tier cities across the ESPON territory. It does five things. First it first shows how we defined and indentified the second tier cities. It next identifies the data we collected to measure their economic performance. Third it shows how we grouped those cities according to their state decision-making systems. Fourth it presents the quantitative evidence about the performance of 124 second tier cities and 31 capitals on population, GDP, employment and unemployment and the key drivers of competitiveness. It identifies some key changes since the recession of 2007. Finally it identifies some of the key messages that have emerged from the analysis.

How do we define second tier cities?

1.2 There are many typologies of cites. All have their limitations. We chose to explore the concept of second tier cities. We define them as those cities outside the capital city whose economic and social performance is sufficiently important to affect the potential performance of the national economy. It does not imply that they are less important than the capital cities. It certainly does not mean that they are second class. But it does not mean they are the second city – because there is only one in each country. And second tier cities are not all the same – they vary enormously. Sometimes they are very large regional capitals. They can be the second city of the country with huge national significance – for example Barcelona, Munich and Lyon in this study. But many are much smaller. However, while they differ in many respects, second tier cities can play comparable national economic roles. In this study we do explore the differences between them and their different challenges. But we also examine them as a group and assess their overall national and European economic contribution. The 124 second tier cities in this study constitute almost 80% of Europe's urban population. They lie between the capital cites which contribute a huge amount to their national economy and the many smaller places which contribute rather less. They are the crucial middle of the urban system. In many, although not all cases, second tier cities already contribute a lot to national performance. In many more cases they could contribute even more - with greater national support.

How many second tier cities do we study?

1.3 We identified a clear set of principles to guide us in deciding which places across Europe we should include in our study. We recognise that no system is perfect. Every classification has problems of, for example, over-bounding, under-bounding and data gaps. We tried to balance economic significance with territorial representation. In particular we have used the boundaries that best fit the policy agenda. For this reason, we have used the boundaries developed by the OECD and DG Regio on metro regions, especially since these boundaries are used in the recent 5th Cohesion report. We wanted our work to complement not contradict that approach.

1.4 There was a slight tension in deciding the absolute number of cities we should study. On one hand we wanted to focus on places which really matter in functional terms to the performance of Europe. On the other we wanted to have good geographical representation and balance. The former pushed us to a smaller number of places, the latter to a larger. We decided to reflect the request for territorial representation. We adopted a simple population criterion adapted by country size and, in the larger countries, the scale of their urban systems.

1.5 Our starting point was the OECD/DG-Regio list of 255 metro-regions across 30 countries which was based upon aggregated NUTS3 areas. Our first decision was to include all available metro-regions in the 22 countries with populations of fewer than 15 million where defined metro-regions numbered five or less. In the eight largest countries France, Germany, Italy, Netherlands, Poland, Romania, Spain and the UK – with populations up to 85 million the number of metro-regions was high, 200 in all. Since our focus is on the larger places in each of the countries, we decided to reduce the number of cities listed on the basis of population. We ranked cities in descending order of population size and grouped them according to cumulative percentage shares of the total metropolitan population excluding the capital. In this way, we could group second tier cities in terms of their relative importance in their different national urban systems. We used a 66.7% cut-off. This gave a good balance between including places that really matter and territorial coverage. In addition we added a small number of places which were just excluded by the 66.7% population rule but whose significance suggested they should be included. In addition to address the territorial representation theme we have decided that every country should have the capital and the next biggest city. Table 1 and Map 2 show the final list of 31 capitals and 124 second tier cities.

What data did we collect?

1.6 Getting comparable data across different cities and countries over time is very difficult. The quality and range of European data is still limited. We collected robust quantitative evidence which will paint an accurate picture of the position across all second tier cities and also allow us to tell a coherent story about the economic, social and environmental trajectories of our case study cities and assess likely future performance. We collected indicators which were available to assess cities' performance on the key drivers of competiveness, that is – innovation, economic diversity, skills and human capital, connectivity, place quality and strategic decision-making capacity.

1.7 So we used data drawn from EUROSTAT, DG Regio and other ESPON studies for the following indicators:

- Population (2000-7)
- Total GDP (2000-7 & 2007-10)
- GDP per capita (2000-7)
- GDP per person employed (2000-7)
- Total employment (2000-7)
- Employment by sector (2000-7)
- Employment rate (2008)
- High level of education (2008)
- Unemployment rates (2000-2009)
- Patent applications (2006-7)
- Potential accessibility: air (2006)
- Net migration rates (2007)

1.8 This study attempts to be as systematic and robust as possible using authoritative comparative data. However, a series of data limitations at European wide level presents challenges. In particular there are challenges about boundary definitions across the ESPON territory and also availability of data below national level for the non EU countries. In the case of Cyprus, Luxembourg and Malta NUTS 3 boundaries refer to national level so it is not possible to report data about second tier cities. In the case of Iceland and Switzerland data on the issues we are discussing are not routinely available from EUROSTAT at the appropriate second tier city level. This explains why these countries are not found in all of the tables and figures in this report. Further detail can be seen in Annexes 7 and 8.

Table 1: Capital and second tier cities in study

COUNTRY	CITIES	COUNTRY	CITIES	COUNTRY	CITIES	COUNTRY	CITIES	COUNTRY	CITIES
Austria	Vienna	France (cont.)	Lens - Liévin	Hungary (cont.)	Gyor	Poland (cont.)	Krakow	Switzerland	Zurich
	Linz		Bordeaux	Iceland	Reykjavik		Gdansk		Geneva
	Graz		Rouen	Ireland	Dublin		Wroclaw		Bern
	Salzburg		Nantes		Cork		Lodz		Lausanne
	Innsbruck		Grenoble	Italy	Rome		Poznan		Basel
Belgium	Brussels		Toulouse		Milan		Kielce	UK	London
	Antwerp		Strasbourg		Naples		Wloclawek		Manchester
	Liege		Metz		Turin		Bydgoszcz		Birmingham
	Gent		Nice		Bari		Szczecin		Bradford-Leeds
	Charleroi		Toulon		Palermo		Lublin		Glasgow
Bulgaria	Sofia		Montpellier		Brescia	Portugal	Lisbon		Sheffield
	Plovdiv		Rennes		Catania		Porto		Liverpool
	Varna	Germany	Berlin		Salerno	Romania	Bucharest		Newcastle u Tyne
Croatia	Zagreb		Düsseldorf-Ruhrgebiet		Florence		Iasi		Nottingham
	Split		Frankfurt am Main		Bologna		Craiova		Cardiff
Cyprus	Nicosia		Hamburg		Genoa		Constanta		Bristol
Czech Republic	Prague		Köln-Bonn	Latvia	Riga		Cluj-Napoca		Leicester
	Ostrava		Stuttgart		Daugavpils		Timisoara		Edinburgh
	Brno		Munich	Lithuania	Vilnius	Slovakia	Bratislava		Belfast
	Plzen		Bielefeld		Kaunas		Kosice		
	Hradec Kralove - Pardubice		Hannover		Klaipeda	Slovenia	Ljubljana		
Denmark	Copenhagen		Nuremberg	Luxembourg	Luxembourg		Maribor		
	Aarhus		Bremen	Malta	Valletta	Spain	Madrid		
	Aalborg		Mannheim	Netherlands	Randstad North		Barcelona		
	Odense		Leipzig		Randstad South		Valencia		
Estonia	Tallinn		Dresden		Eindhoven		Seville		
	Tartu		Chemnitz		Arnhem		Malaga		
Finland	Helsinki	Greece	Athens		Heerlen		Murcia		
	Tampere		Thessalonica		Enschede		Bilbao		
	Turku	Hungary	Budapest	Norway	Oslo		Cádiz		
France	Paris		Debrecen		Bergen		Coruña		
	Lille		Miskolc		Stavanger	Sweden	Stockholm		
	Marseille		Szeged	Poland	Warsaw		Gothenburg		
	Lyon		Pecs		Katowice-Zory		Malmo		

2. CITIES IN NATIONAL DECISION MAKING SYSTEMS

2.1 One of our key arguments is that the structure of national decision making is important to the performance and prospects of cities. So we have developed a classification of European states which attempts to reflect distribution of powers and responsibilities between national and urban governments and the degree of decentralisation of those responsibilities from national or local administrations. We distinguish between four broad typologies of state organisation and grouping of countries according to state system that add an explicit governance dimension to the broad territorial grouping that we are also using in our research.

2.2 We distinguish in Table 2 between federal and unitary Member States with the latter divided into three giving the following broad typology:

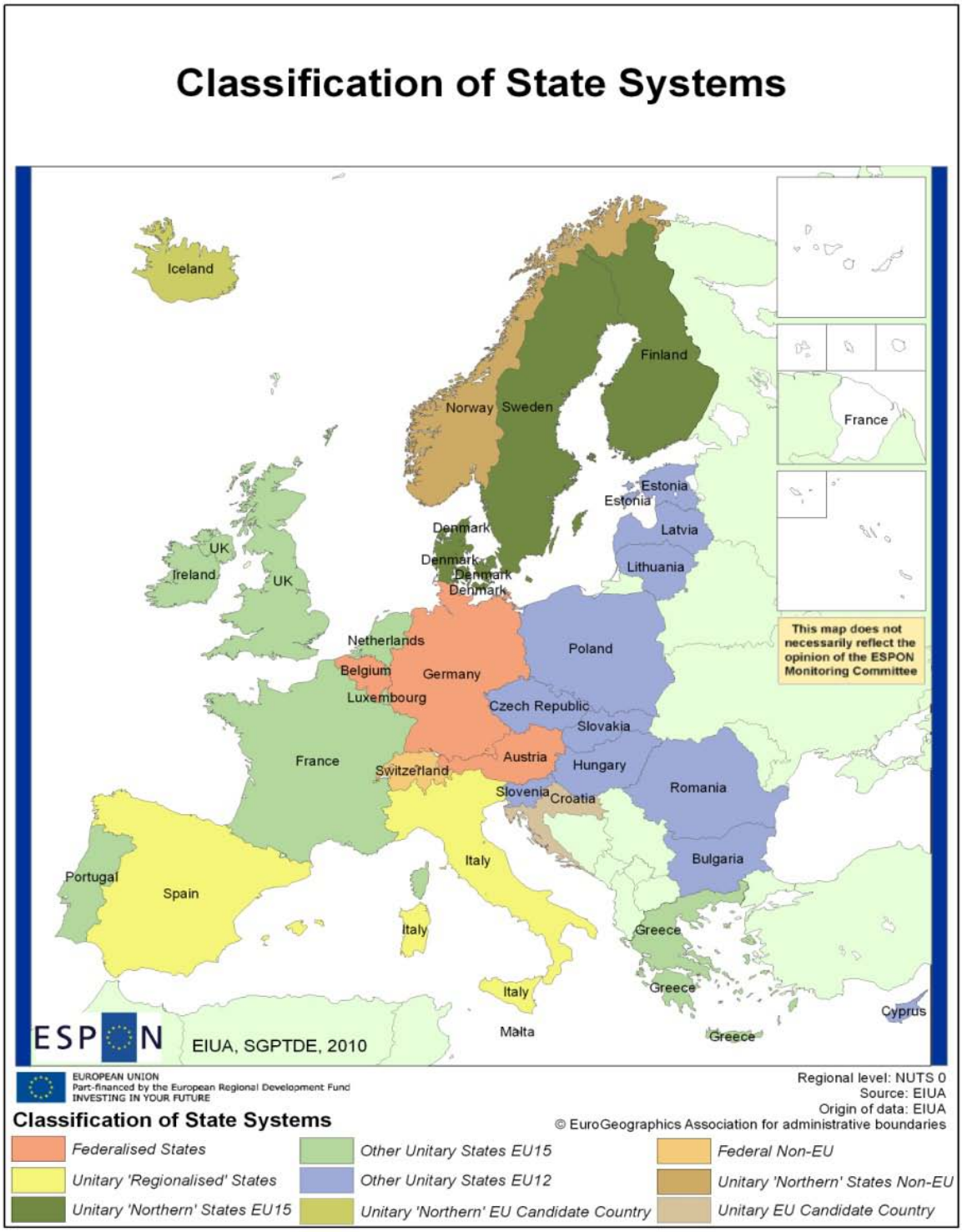
- **Federalised states (Austria, Belgium and Germany)**: characterised by a central government and regional authorities both with own legislative and administrative competences that are exercised independently and recognised by the Constitution. For our data analysis, we will also include Switzerland, a non-EU Member State, in this group as part of the wider ESPON territory.
- **Unitary 'regionalised' states (Italy and Spain)**: unitary countries that have established an intermediate level of government with a wide set of competences. What sets them apart from traditional unitary states is their high degree of regionalisation.
- **Unitary 'Northern' states (Denmark, Finland and Sweden)**: unitary countries in which local governments have a wide range of responsibilities in relation to regional development. Iceland, an EU candidate country and Norway, a Non-EU Member State, also fall in this group for our data analysis as part of the wider ESPON territory.
- **Unitary States (in both the EU15 - France, Portugal, the UK, Greece, Ireland, The Netherlands and Luxembourg and the EU12 - Czech Republic, Hungary, Poland, Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Malta, Romania, Slovakia and Slovenia)**: where central government is predominant, although there is considerable historical variation between them, not least in relation to the degree of decentralisation - which is relatively high in some countries such as the Netherlands, Slovenia and Lithuania and very limited in others like Ireland, Greece, Bulgaria, Romania and Malta. Croatia, an EU candidate country, is also included.

2.3 The distinction between 'old' and 'new' member states captures the state restructuring being experienced by the former socialist states of Eastern Europe. With the exception of the former GDR, which has been integrated into Germany's Federal System, all of these previously highly centralised socialist states have developed unitary political systems albeit with varying degrees of decentralisation of competences. (see Map 1).

Table 2: State system grouping

STATE SYSTEM GROUPING	CHARACTERISTICS	COUNTRIES
Federalised states	Central and regional authorities with independent legislative & administrative competences recognised by Constitution	• **EU 15**: Austria Belgium, Germany, • **Non-EU**: Switzerland
Unitary 'regionalised' states	Intermediate government with wide set of competences and high degree of Regionalisation	• **EU15**: Italy, Spain
Unitary 'Northern' states	Local governments with wide range of responsibilities for economic development	• **EU 15**: Denmark, Finland, Sweden • **Non-EU**: Norway • **EU Candidate Country**: Iceland
Other Unitary States	Central government dominant. Considerable variation in terms of decentralisation. Distinction between 'old' and 'new' member states captures state restructuring in former socialist states	• **EU 15**: France, Greece, Ireland, Luxembourg, Netherlands, Portugal, UK • **EU12**: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia • **EU Candidate Country**: Croatia

Map 1: Classification of state systems



2.4 Table 3 summarises the different features and trends in competences and local autonomy of the different groups of states.

Table 3: Summary of features of the different state systems: trends in competences and local autonomy

Group of countries	Features	Trends in competencies	Local revenues & autonomy
Federal states (Austria, Belgium, Germany)	Constitutionally recognised, shared powers between central and sub-central levels (states)	Not significant changes, reinforcement of federal organisation in Belgium	Medium
Unitary 'Northern' states (Sweden, Finland, Denmark)	Centralised states with strong local autonomy	Rationalisation and unification of some local tiers (counties, municipalities aggregated into regions)	High
Unitary regionalised states (Italy and Spain)	Strong autonomy of intermediate levels (regions)	Fast devolution and tendency to introduce federal agreements	Medium-high and increasing
Other unitary states – 'old' Member States (France, Greece, Ireland, Luxembourg, Netherlands, Portugal, UK)	Different institutional forms with more (UK, Netherlands, France) or less power to local government (Portugal, Greece)	On-going but slow devolution and reorganisation in UK and France. Slow-down or devolution halt in Portugal and Greece	Medium (high in France)
Other unitary states – 'new' Member States (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, Cyprus, Malta)	States undergoing restructuring; limited power to local government	Re-establishment and reinforcement of local governments; some more articulated devolution process in Poland	Medium low

Source: Ismeri Europe and Applica (2010)

Cities in broad geographical groupings

2.5 The state systems and the cities within them are distributed across Europe in six broad geographical groupings (Map 2):

- North: the 'Nordic' Unitary states of Denmark, Finland, Iceland, Norway and Sweden;
- Central: the Federal state states of Austria, Germany (the latter incorporating the former unitary socialist state of the German Democratic Republic) and Switzerland;
- Central East: the former socialist unitary states of Czech Republic, Hungary, Poland, Slovakia and Slovenia;
- South: the regionalised states of Italy and Spain and the unitary states of Cyprus, Greece, Malta and Portugal;
- South East: the former socialist unitary states of Bulgaria, Croatia and Romania
- West: the Federal state of Belgium and the unitary states of France, Ireland, Luxembourg, Netherlands and the United Kingdom

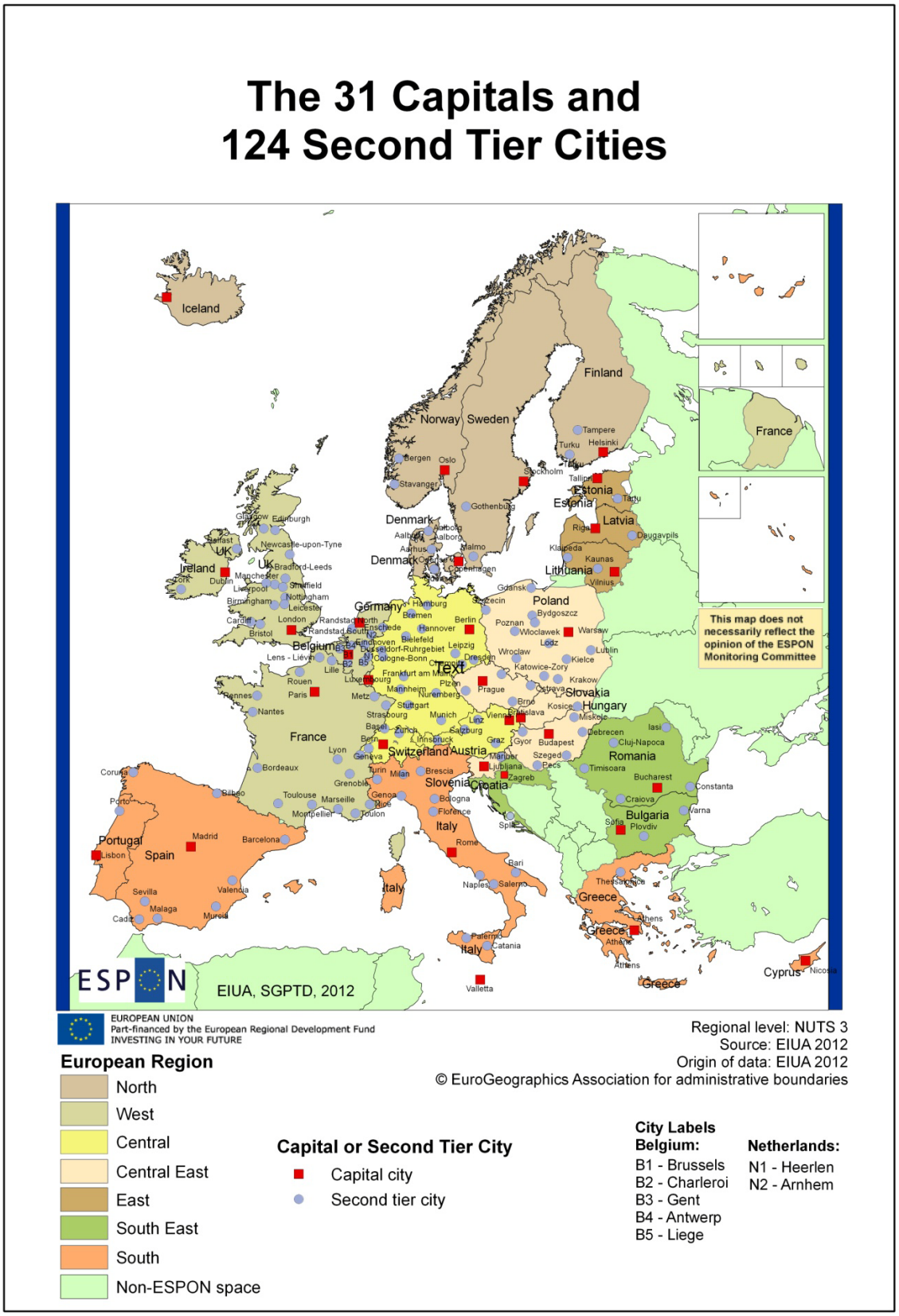
Key messages – second tier cities picking up, catching up, staying up with capitals

2.6 The main focus of our analysis was to identify the relative performance of second tier cities, identifying which are catching up to and which are falling behind their respective capitals. We have also grouped city performance data by type of governmental system and European region to consider whether the performance of second tier cities is affected either by the degree to which the governance system of their respective countries is decentralised or by their location. We also collected data that would allow us both to test and explore patterns of performance against key drivers of urban competitiveness.

2.7 We present the results of our data collection and analysis for capital and non-capital cities under six main headings:

- ❖ Population – urban structures, scale and change
- ❖ Economic significance – total GDP
- ❖ Performance – GDP per capita and GDP change
- ❖ Productivity – employment change and GDP per person employed
- ❖ Unemployment – rates and change
- ❖ Economic drivers: innovation, skills, leading employment sectors and connectivity

Map 2: 31 Capital cities and 124 Second Tier cities in this study



3. URBANISATION AND POPULATION CHANGE

Population decline in eastern Europe and growth just about everywhere else

3.1 The cities we are comparing are located in, and contributing to population patterns that vary across Europe. Growth in population over the period 2000-2007 ranges, in twenty-two of the thirty one countries, from just 0.1 percent (Germany) to nearly 15 percent (Ireland). In the other nine countries – all former socialist states in eastern Europe – population has fallen; relatively slightly in Slovakia, Croatia and Poland, much more pronounced in Bulgaria, Latvia, Romania and Lithuania and at rates in between these two groups in Estonia and Hungary. Economic transition for these economies has been accompanied by varying levels of decline in population.

Differing degrees of urbanisation

3.2 Table 4 sets the context. It ranks countries by total population in 2007 and shows population change between 2000 and 2007 and the proportion of total population accounted for in 2007 by the metropolitan region classification (NUTS3) we are using.

Table 4: Population change by country 2000-2007 and total and metropolitan region population, 2007

Rank by size	Country	Population change (%) 2000-2007	Total population 2007 ('000)	Metropolitan Region (NUTS3) population 2007 as % total
1	Germany	0.1	82,263	63.5
2	France	5.0	63,758	64.2
3	United Kingdom	3.5	60,975	72.2
4	Italy	4.3	59,375	58.0
5	Spain	11.4	44,874	74.2
6	Poland	-0.4	38,116	58.9
7	Romania	-4.0	21,538	32.7
8	Netherlands	2.9	16,378	66.1
9	Greece	2.5	11,193	46.3
10	Belgium	3.7	10,622	55.7
11	Portugal	3.7	10,608	38.5
12	Czech Republic	0.5	10,323	61.9
13	Hungary	-1.5	10,056	53.8
14	Sweden	3.1	9,148	51.0
15	Austria	3.8	8,315	46.2
16	Bulgaria	-6.5	7,640	31.4
17	Switzerland	5.1	7,551	61.1
18	Denmark	2.3	5,460	67.7
19	Slovakia	-0.1	5,397	25.6
20	Finland	2.2	5,289	45.5
21	Norway	4.8	4,706	41.1
22	Croatia	-0.2	4,436	35.9
23	Ireland	14.7	4,357	53.8
24	Lithuania	-3.5	3,376	56.4
25	Latvia	-4.0	2,276	63.6
26	Slovenia	1.5	2,019	41.0
27	Estonia	-2.2	1,342	64.7
28	Cyprus	13.0	784	100.0
29	Luxembourg	9.5	480	100.0
30	Malta	5.2	410	92.3
31	Iceland	10.7	311	62.5

Population change – changing balance between capitals and second tier cities

3.6 Figure 2 shows population change in capital and second tier cities by country and state system – arranged, from left to right, by national rates of change. It illustrates clearly the serious challenges facing the former socialist states of Eastern Europe, clustered to the left of the diagram. The differing performance of capitals and second tier cities across Europe and state systems are also highlighted.

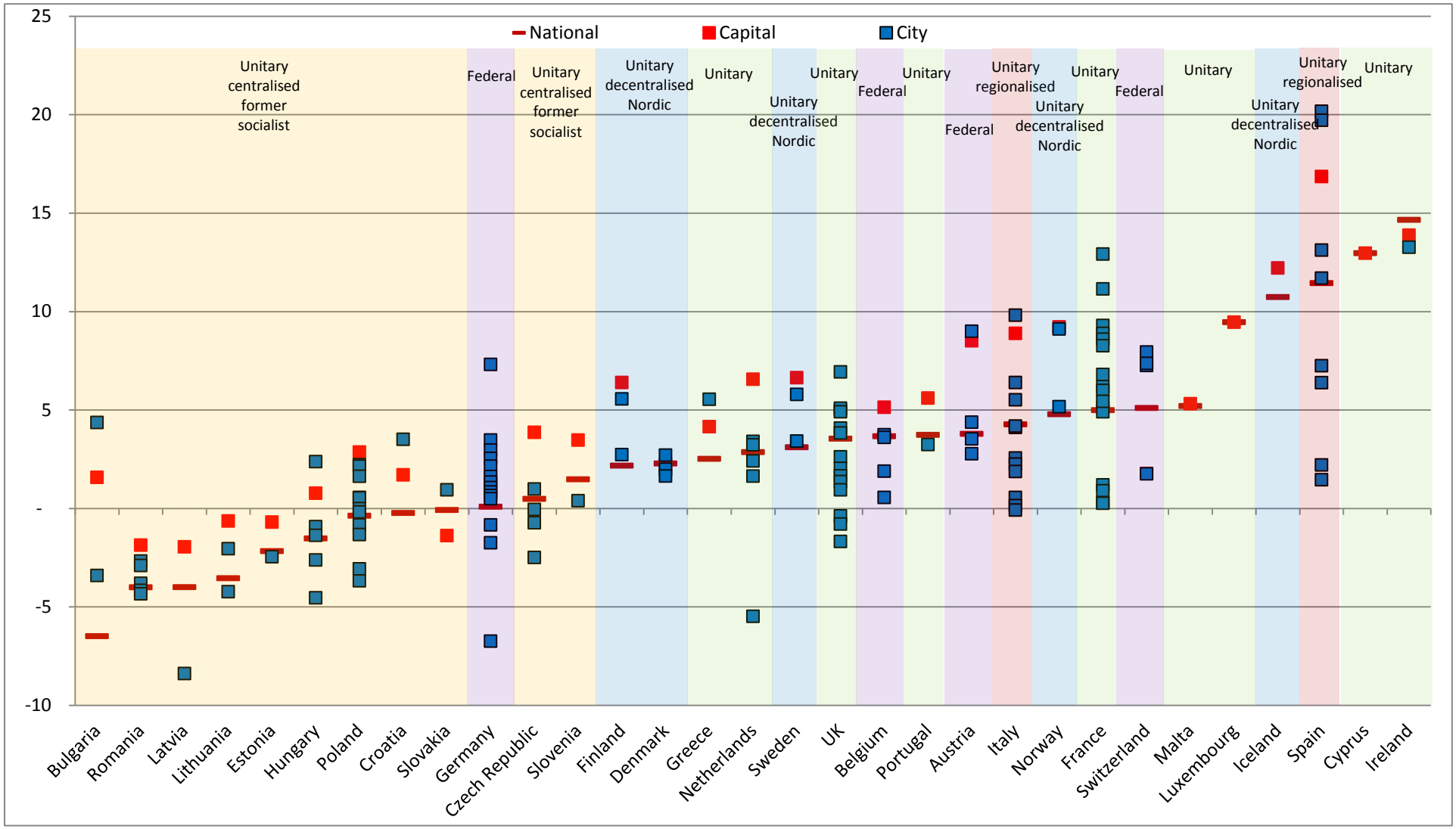
3.7 Table 6 attempts to summarise this complicated picture by listing, for each country and regional grouping, the changing shares accounted for by capital and leading second tier cities of total population in both 2000 and 2007. It is an indication of how the overall balance between capitals, second tiers and other parts of countries has shifted over the period in the different states.

3.8 Of the 27 countries that have one or more second tier cities, the change in the share of the latter remained stable in three, increased in eleven and fell in thirteen. Just over half of countries have seen second tier cities hold their own or slightly improve their relative position. There remain, however, notable territorial and internal differences.

3.9 Second tier city shares increased in all three of the **Central Federal states** (Austria, Germany and Switzerland) but declined in Federal Belgium in the West. In Austria, this was driven by the principal second tier, Graz, which saw its population increase faster than the capital, Vienna. In Germany, population increased faster in six second tier cities (Munich, Hamburg, Cologne-Bonn, Stuttgart, Nuremberg and Bremen) than in the capital Berlin. Population in the other second tier cities either increased less than the capital (Frankfurt am Main, Dresden, Hannover, Mannheim and Bielefeld) or actually declined (Leipzig, Dusseldorf-Ruhrgebiet and Chemnitz).

3.10 In the **Nordic states**, Finland, Norway and Sweden saw second tier cities increase their share of population, while the share remained stable in Denmark. In Finland, both second tier cities, Tampere and Turku, saw population grow over the period but neither grew faster than the capital, Helsinki. The same pattern can be seen in Norway where both Stavanger, especially, and Bergen saw their population increase but neither faster than the capital, Oslo, and also in Sweden where population growth in Malmo and Gothenburg was lower than in Stockholm. In Denmark however, the leading second tier, Aarhus, saw population increase at a faster rate than in the capital, Copenhagen.

Figure 2: Population % change 2000-7 by state system, ordered by national



Source: DG-Regio

3.11 The **unitary states** provide a mixed picture. In West Europe, only France saw its second tier cities maintain their relative share while the share fell in Ireland, Netherlands and the UK. France stands out, with ten of its fifteen second tier city regions – in declining order, Toulouse, Montpellier, Toulon, Rennes, Nantes, Bordeaux, Grenoble, Nice, Marseille and Lyon – all growing faster than the capital region, Paris. Cork's population increase was below that for Dublin in Ireland and none of the second tier cities in the Netherlands grew faster than the capital city region Randstad North with one, Heerlen, actually seeing its population fall over the period. Only Bristol and Leicester saw population growth above that for London and of the eleven other principal second tiers, three, Glasgow, Belfast and Liverpool saw their populations fall.

3.12 Of the **regionalised states in Southern Europe**, the share was stable in Italy but fell in Spain. In both countries some second tier cities grew faster than their respective capitals but this was counterbalanced by lower growth rates in the other second tiers. In Italy, Brescia grew faster than Rome and in Spain, both Murcia and Malaga outgrew Madrid. The southern unitary states of Greece and Portugal each have one principal second tier. In Greece, Thessalonica grew faster than Athens but the opposite was the case in Portugal, where Porto grew less than Lisbon.

3.13 The demographic challenges facing some of the second tier cities in the **former socialist states of Eastern Europe** are evident. Of the eleven countries, only two, Bulgaria and Croatia in the South East saw the relative share of second tiers increase. In five countries, Estonia, Lithuania, Hungary, Poland and Slovakia, the share remained stable. But in Latvia in the East and the Czech Republic and Slovenia in Central East, and Romania in the South East, the share declined. And underlying all these overall patterns were quite dramatic differences in the relative performance of individual cities. In Bulgaria, the increase in the second tier cities' share reflected a 0.5% fall in second tier cities, set against a national fall of 6.5%. In Croatia the increase was due to higher growth in Split relative to Zagreb coupled with a national population fall of 0.2%. In Estonia, Lithuania, Hungary and Poland, where second tier shares remained stable, this reflected aggregate second tier city population declines that were broadly in line with national falls. In Slovakia population change was relatively static for capital, second tier and nationally meaning no overall change. In Latvia however second tier population share fell as Daugavpils declined at a rate four times the capital and twice the national. The share fell in the Czech Republic due to population declines in 3 of 4 second tier cities, while Prague grew by 4% and nationally population grew by 0.5%. In Romania, all cities lost population and all of the second tiers lost population at a faster rate than the capital, Bucharest. In contrast, some second tier cities grew in population terms in countries where the overall share of second tier cities either fell or remained stable: in the Czech Republic (Plzen), Hungary (Gyor), Poland (Poznan, Gdansk, Krakow, Bydgoszcz and Wroclaw) and Slovenia (Maribor) – however of these only Gyor grew at a faster rate than its respective capitals and in countries with more than one second tier city any growth was outweighed by population loss in other second tier cities.

Table 6: Share (%) of total population - capitals and principal second tier cities, 2000 and 2007

Regional grouping/ political system/ country	Capital cities Share (%)		Principal second tier cities Share (%)		Change in share of principal second tier cities 2000-2007		
	Total Population 2000	Total Population 2007	Total Population 2000	Total Population 2007	Increase	Stable	Decrease
Central: Federal states							
Austria	26.2	27.4	18.6	18.8	✓		
Germany	6.0	6.1	38.4	38.9	✓		
Switzerland	13.1	12.7	47.8	48.4	✓		
Northern (Nordic) Systems							
Denmark	33.5	33.5	34.2	34.2		✓	
Finland	26.8	27.9	17.3	17.6	✓		
Iceland	61.7	62.5	-	-			
Norway	21.8	22.7	18.1	18.4	✓		
Sweden	20.4	22.7	18.1	18.4	✓		
West: Federal Belgium and unitary states							
Belgium	31.8	32.2	23.7	23.5			✓
France	18.2	18.2	31.5	31.6		✓	
Ireland	39.5	39.3	14.8	14.6			✓
Luxembourg	100.0	100.0	-	-			

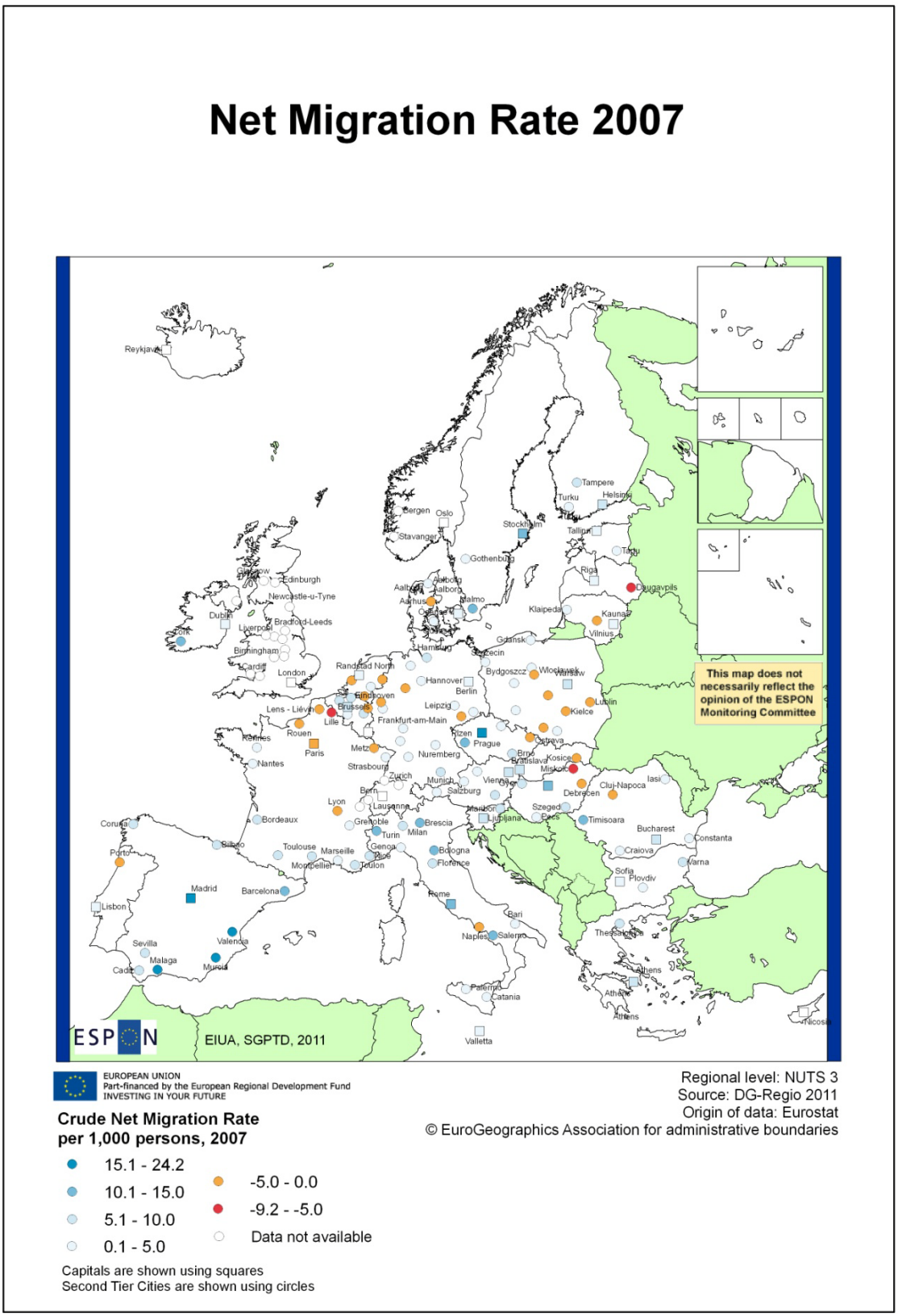
Netherlands	21.2	22.0	33.5	33.0			✓
United Kingdom	23.6	24.0	30.8	30.4			✓
South: Regionalised states							
Italy	6.5	6.8	37.5	37.4		✓	
Spain	13.0	13.6	35.7	35.5			✓
South: Unitary states							
Cyprus	100.0	100.0	-	-			
Greece	35.6	36.2	9.9	10.2	✓		
Malta	92.2	92.3	-	-			
Portugal	25.9	26.4	12.1	12.1		✓	
East: Former socialist states – unitary							
Estonia	38.4	39.0	25.9	25.8		✓	
Latvia	47.2	48.2	16.2	15.4			✓
Lithuania	24.4	25.1	31.2	31.2		✓	
Central East: Former socialist states – unitary							
Czech Republic	22.4	23.1	39.3	38.7			✓
Hungary	28.0	28.7	25.2	25.1		✓	
Poland	8.1	8.3	35.0	34.9		✓	
Slovakia	11.4	11.3	14.2	14.3		✓	
Slovenia	24.6	25.1	16.1	15.9			✓
South East: Former socialist states - unitary							
Bulgaria	14.9	16.2	14.3	15.2	✓		
Croatia	24.6	25.0	10.4	10.8	✓		
Romania	10.2	10.4	18.3	16.8			✓

Note: changes of +/- 0.1% are classed as 'stable'

Net migration – capital dominate but a significant number of second tier cities are also attractive to migrants

3.14 Map 3 shows net migration data in 2007. Only one capital city – Paris – had a negative migration rate, underlining the continuing pull of capitals. But a significant number of second tier cities were also attractive to migrants. Three quarters of the second tier cities (77) had positive net migration rates in 2007. And 32 of these had rates above their capitals. All 10 capital cities in Central, East and South Eastern Europe for which we have data had positive net migration rates. There is a general pattern of the capitals pulling away from the second tier cities with a few notable exceptions.

Map 3: Net Migration Rate 2007



4. PRODUCTIVITY AND ECONOMIC PERFORMANCE

Weight of cities – total GDP

4.1 Capitals dominate their national economies. The total GDP of the capitals exceeds that of their leading second tier cities in all countries except Germany and Italy. Nevertheless, the upper echelons of total GDP rankings also include a number of very significant second tier cities. 12 of the top 28 European cities in terms of GDP are leading non-capital cities. But half are German. The performance of second tier cities matters a great deal to the EU's economic weight and prosperity. Map 4 maps capital and leading non-capital cities according to total GDP in 2007. It highlights the importance of the core pentagon area of Europe (London, Paris, Hamburg, Munich and Milan) together with a limited number of outliers. The gap in GDP between the capital and other leading cities is often large.

4.2 The map and Figures 3-6 show the extent of the gap between the GDP of the capital and the leading non-capital city. Germany and Italy are the only member states where the largest second tier has a GDP which exceeds that of the capital. In Germany's case this reflects its relatively balanced urban system in which six cities are of major economic importance alongside a capital that has seen its growth historically constrained. Italy by contrast is dominated by Milan and Rome, while other second tier cities significantly trail behind in terms of GDP. Italy has much more in common with Spain, Netherlands, Sweden and Poland where the most significant second tier centre has a total GDP of between 50-80% that of the capital. In most of these countries, the gap in the GDP between of the capital and leading second tier cities and that of other cities is as significant as the gap between the capital and the leading second tier city. In eleven member countries, the largest group, the largest second tier city has a total GDP between 25 and 50% that of the capital. These include 5 EU15 countries (Ireland, Denmark, Portugal, Belgium and Austria) and 5 EU12 countries (Lithuania, Slovakia, Slovenia, Estonia and Czech Republic) and also Norway. The capitals of Croatia, Finland, Bulgaria, Romania and Greece dominate their respective urban hierarchies since the GDP of the largest second tier is less than 25% that of the capital. Capitals dominate most in countries where the largest second tier produced only 10-15% of the GDP of the capital. These include UK and France where London and Paris hold sway owing to their status as global cities and also the highly centralised Eastern states of Hungary and Latvia. In Luxembourg, Cyprus and Malta it is not possible to identify second tier level data. In Switzerland and Iceland city GDP data are unavailable. Figures 4 to 6 show in detail the performance of capitals and second tier cities on total GDP by European region and in individual country.

Map 4: Capital and Second tier cities – Total GDP in PPS

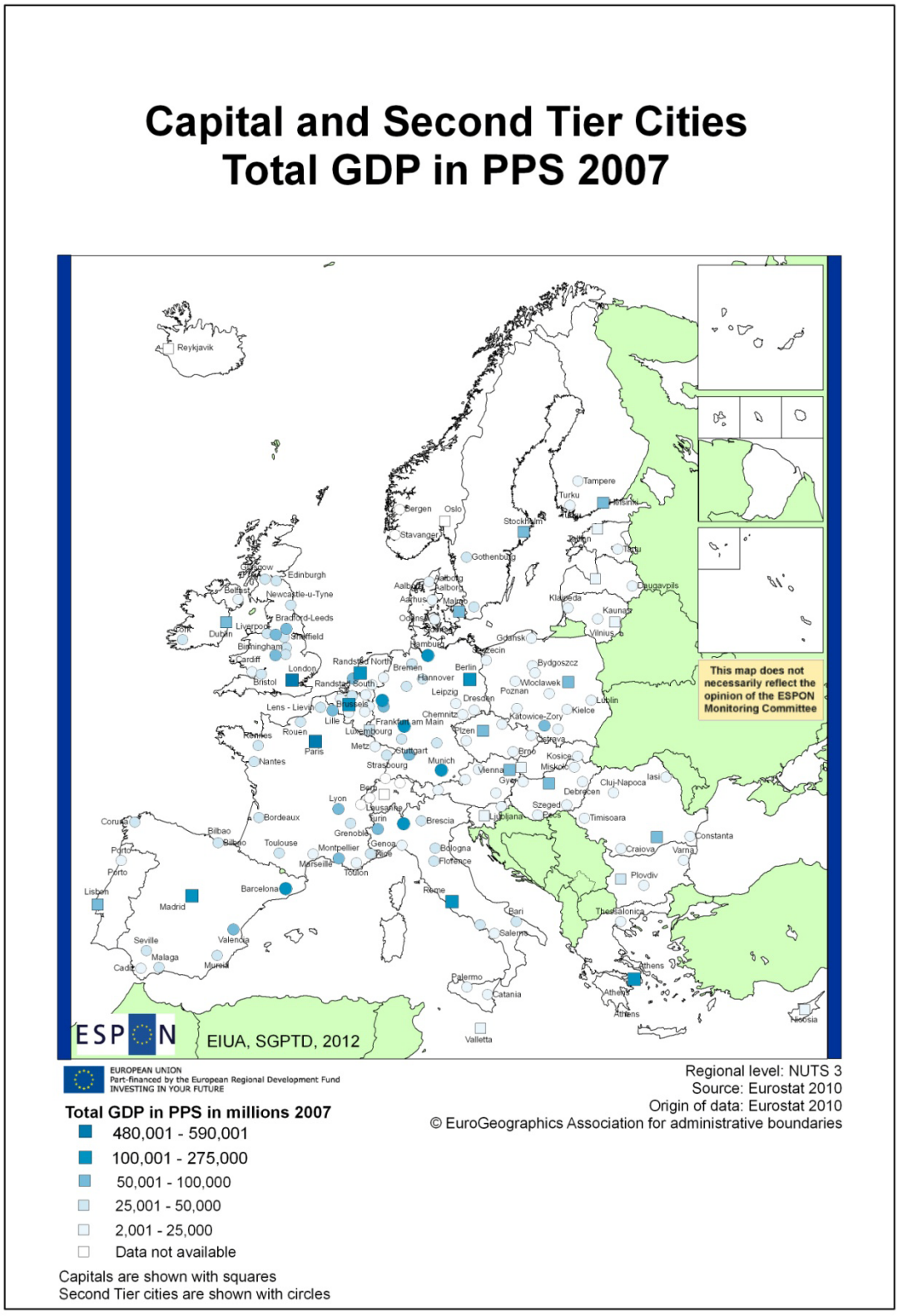
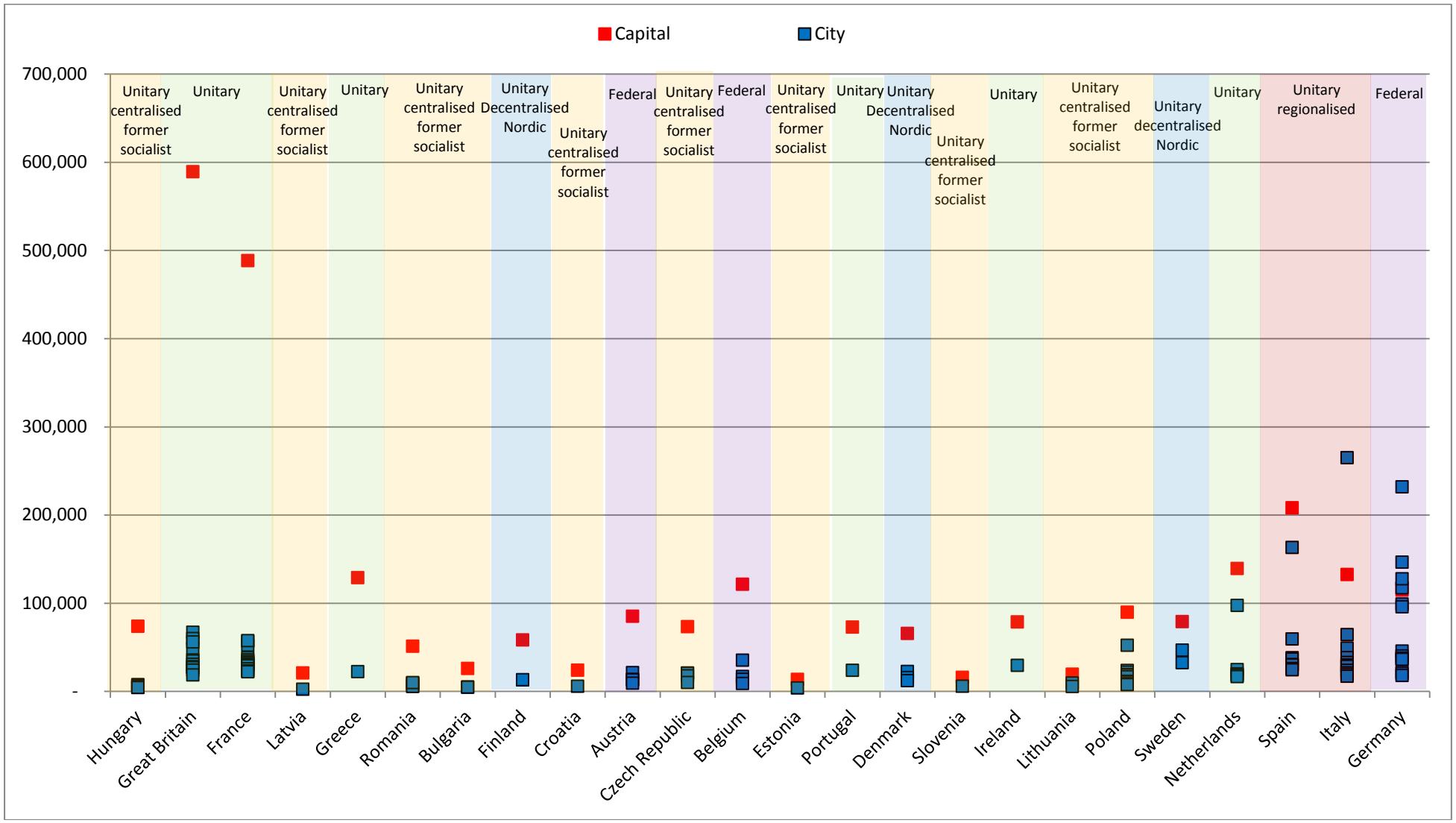
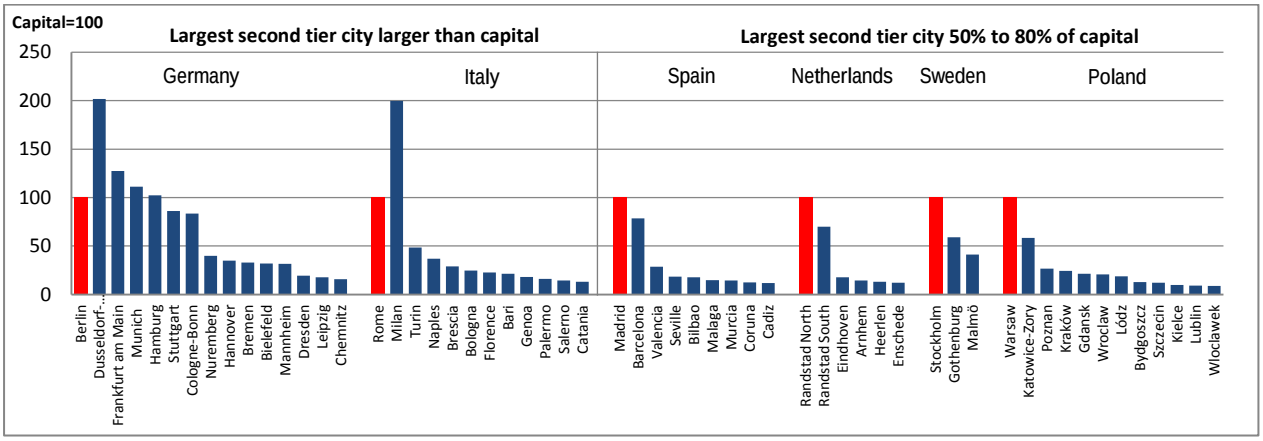
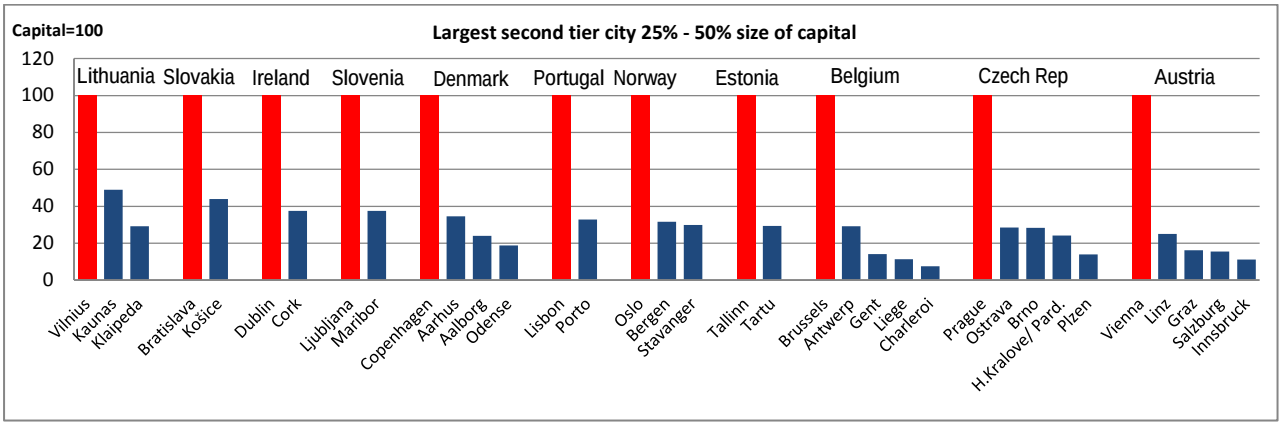


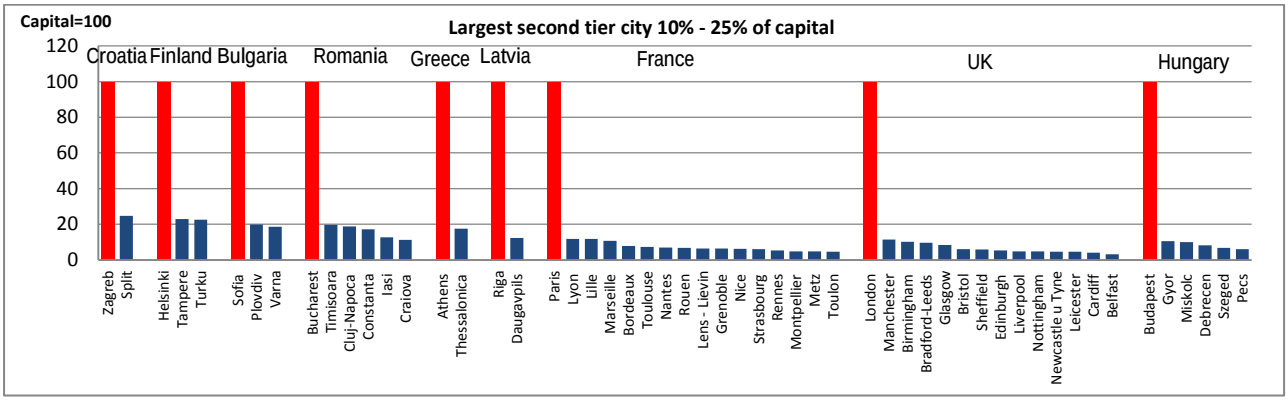
Figure 3: Total GDP in PPS, 2007, countries ordered by capital and best second tier gap (in percentage terms)



Figures 4-6: Total GDP in PPS, 2007







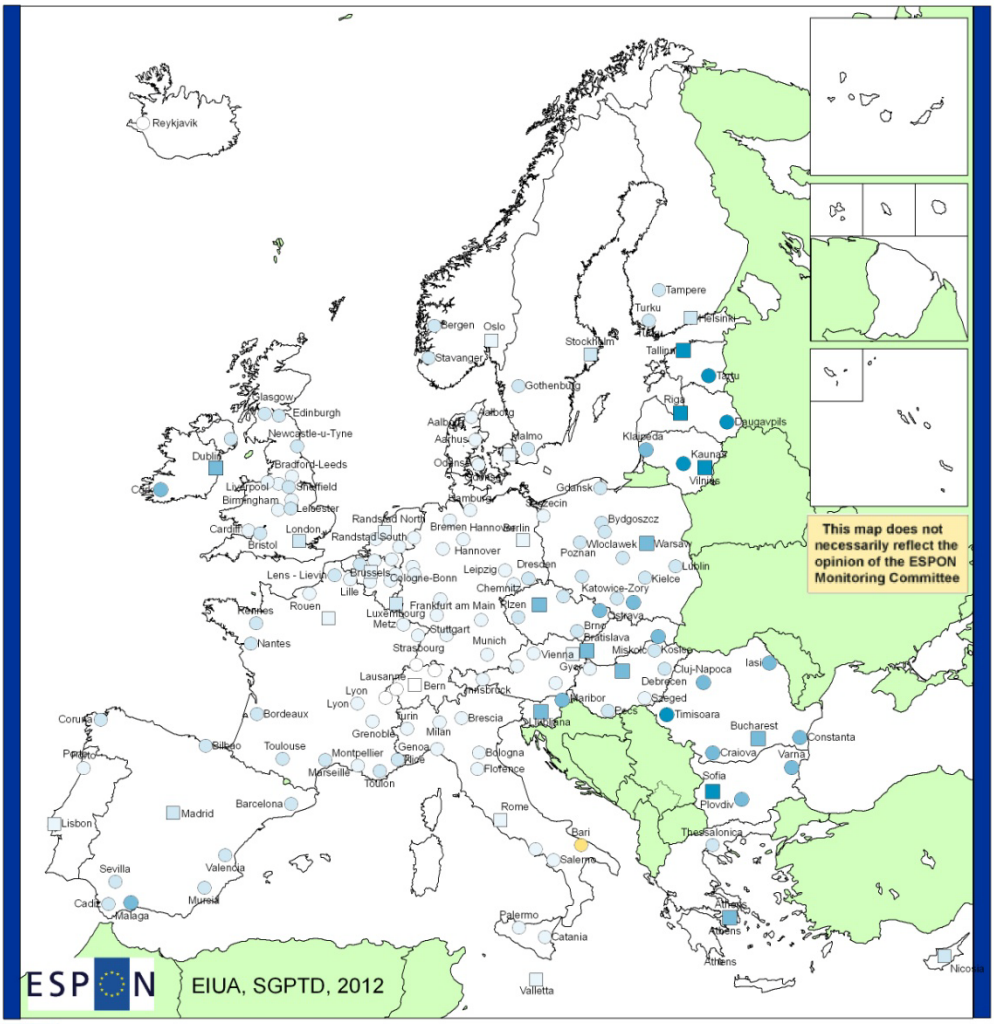
Source: Eurostat

Change in economic contribution. Second tier cities closing the gap with capitals in many but not all countries

4.7 Structurally, capitals dominate their national economies. Many strengthened their position in the boom years 2000-7. But in 16 of the 26 countries, one or more second tier cities recorded higher annual percentage growth in total GDP than their capitals. In the Federal states of Austria and Germany, all second tier cities had higher growth rates than their capitals. The relatively strong growth rates in a number of capitals and second tier cities in the Central East, East and South East, as their economies integrated into the European economy, also stand out. Indeed the highest growth rates over this period were recorded in these regions. A significant number of second tier cities in the EU are putting in strong performances (Map 5). Figures 7 to 9 again show the more detailed picture.

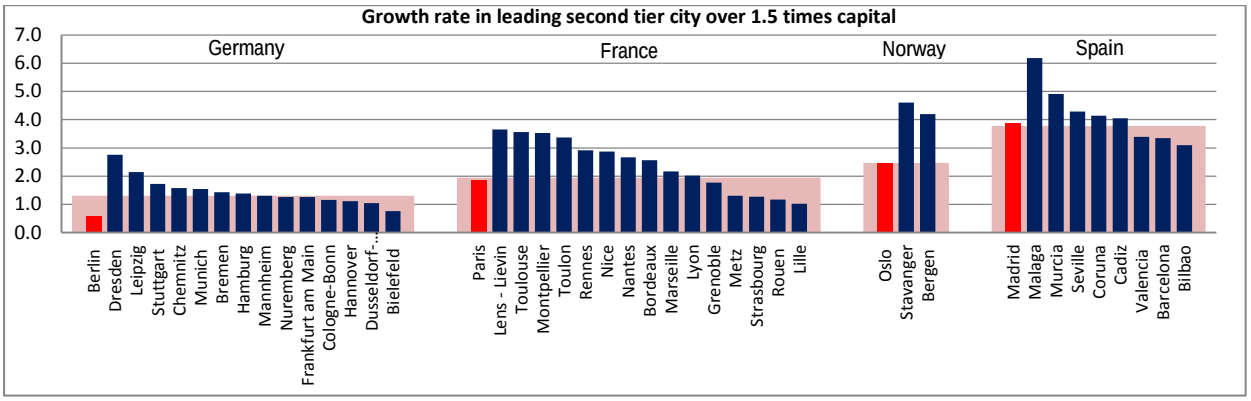
Map 5: Total GDP – average annual % change, 2000-7

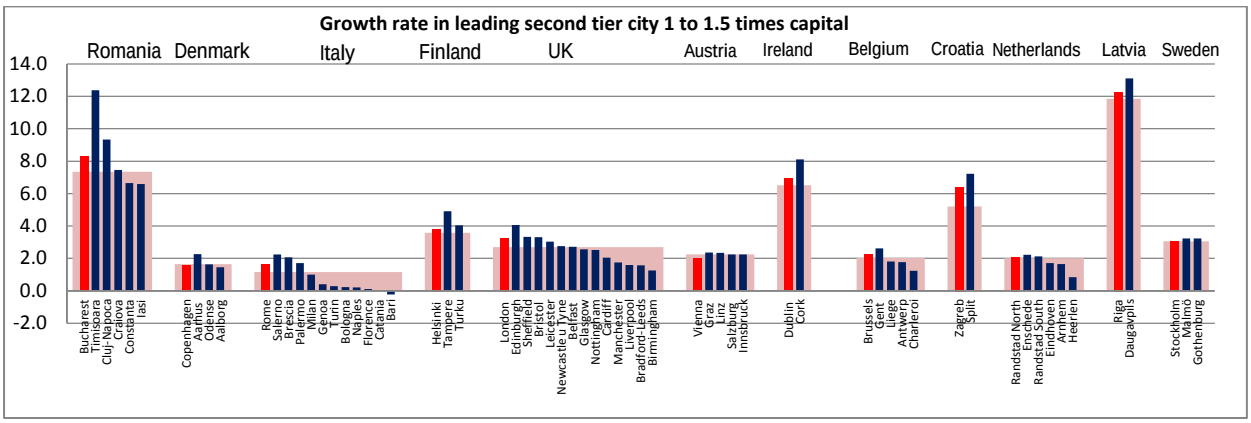
Total GDP
Average Annual % Change 2000-7

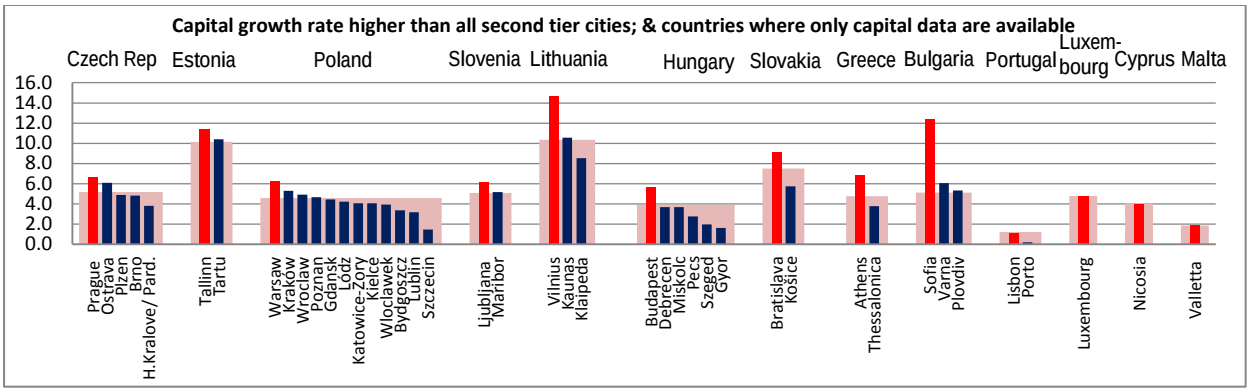


4.8 The charts that follow present above data country by country.

Figures 7-9: Total GDP Average Annual % Change 2000-7





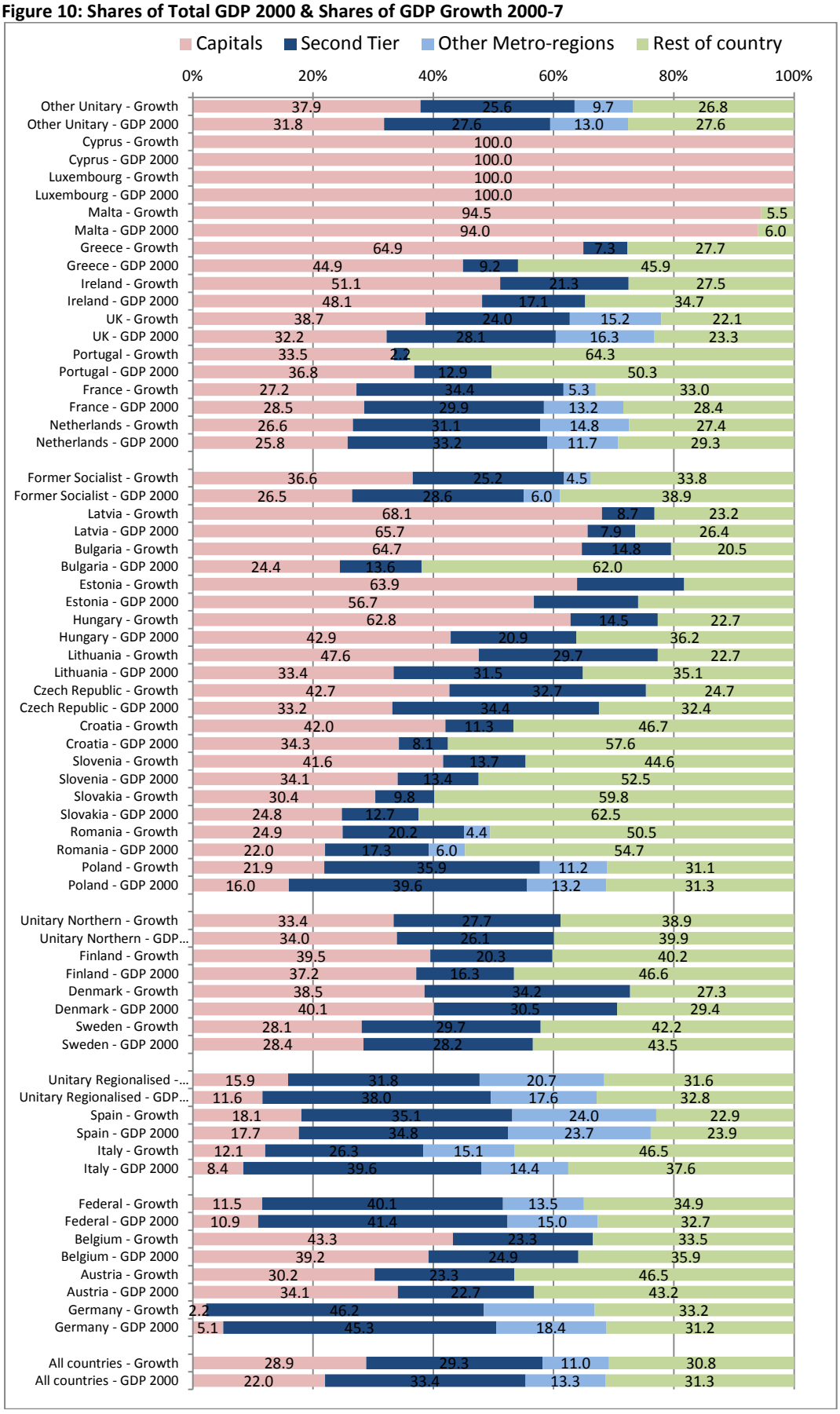


Source: Eurostat

Total economic weight – changing balance between capitals and second tier cities

4.9 We analysed the sources of growth in GDP in the boom years 2000 to 2007. Capitals accounted for 29% of GDP growth. Second tier cities accounted for a similar 29%. Other metropolitan regions accounted for a further 11%. Non-metropolitan regions accounted for the remaining 31%. Figure 10 summarises this picture by country and state system. In France and the Netherlands, second tier cities accounted for the largest shares of national GDP growth. In the other Unitary South and West countries, the capitals had the largest shares with the exception of Portugal. The continuing dominance of capitals in the former socialist countries stands out. Only in Poland, did second tier cities account for a larger share than the capital. And in Croatia, Slovenia, Slovakia and Romania non-metropolitan regions continue to overshadow second tier cities. In the Nordic states, the balance between capital and second tier cities is more even. In the two regionalised states of Italy and Spain, second tier cities had larger shares than their capitals. In the Federal countries, the position of Germany really stands out, with its second tier cities accounting for 46% of GDP growth.

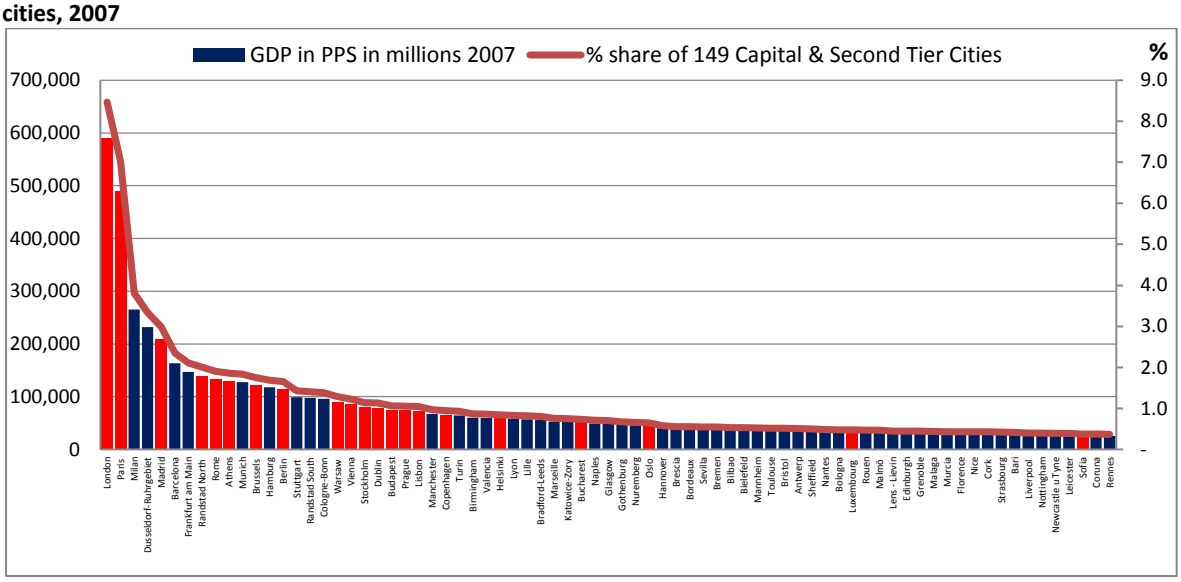
Figure 10: Shares of Total GDP 2000 & Shares of GDP Growth 2000-7



Source: Eurostat

4.10 Half of our capital and second tier cities account for 84% of the total GDP generated by our cities. Europe's two global cities – London and Paris – together account for 16% underlining their scale and global significance, see Figure 11.

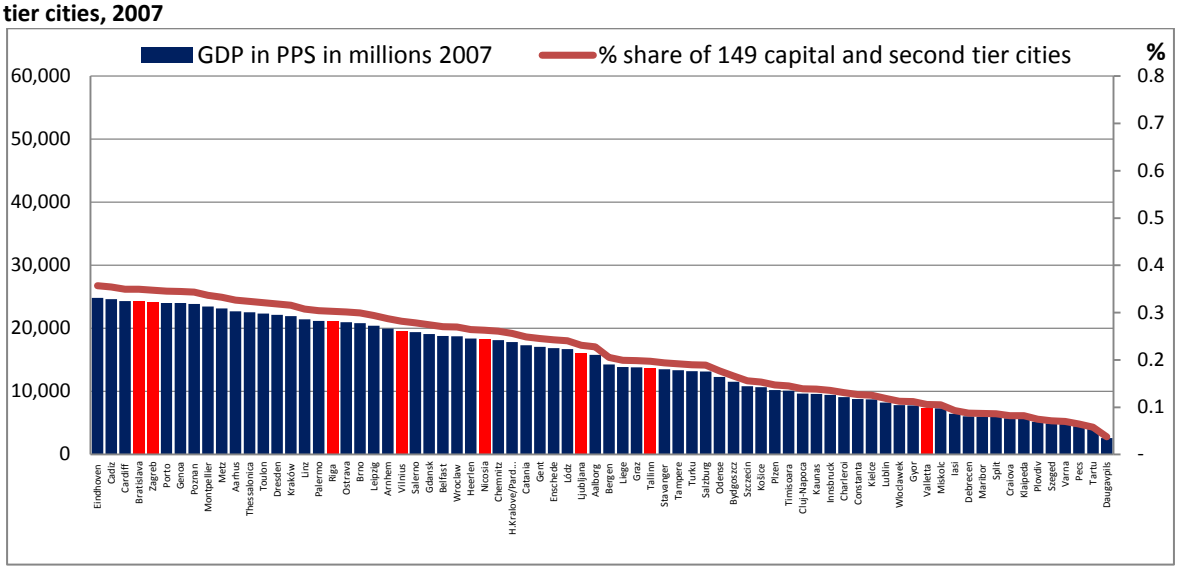
Figure 11: Total GDP in PPS in millions & as percentage share %, largest 75 of 149 capital & second-tier cities, 2007



Source: Eurostat

4.11 The other half of our cities contribute just 16% of the Total GDP, with 8 capitals included in this group, see Figure 12.

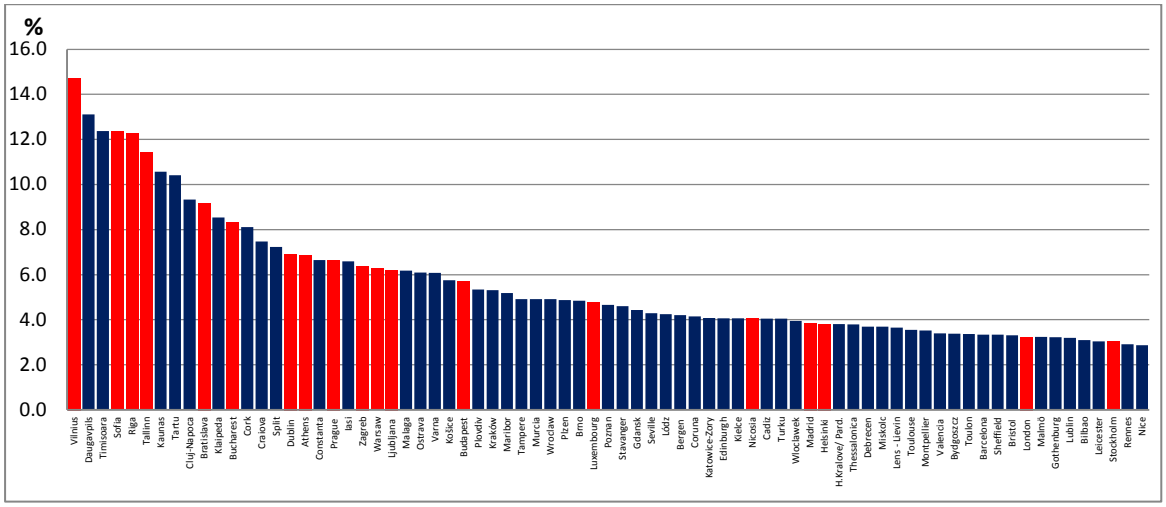
Figure 12: Total GDP in PPS in millions & as percentage share %, smallest 74 of 149 capital and second tier cities, 2007



Source: Eurostat

4.12 The figure below (Figure 13) shows the cities that have experienced the highest growth rates 2000-7. A number of cities in the East, South East and Central East are among the fastest growing as are a number of the smallest cities. However of the top 23, 12 are capitals.

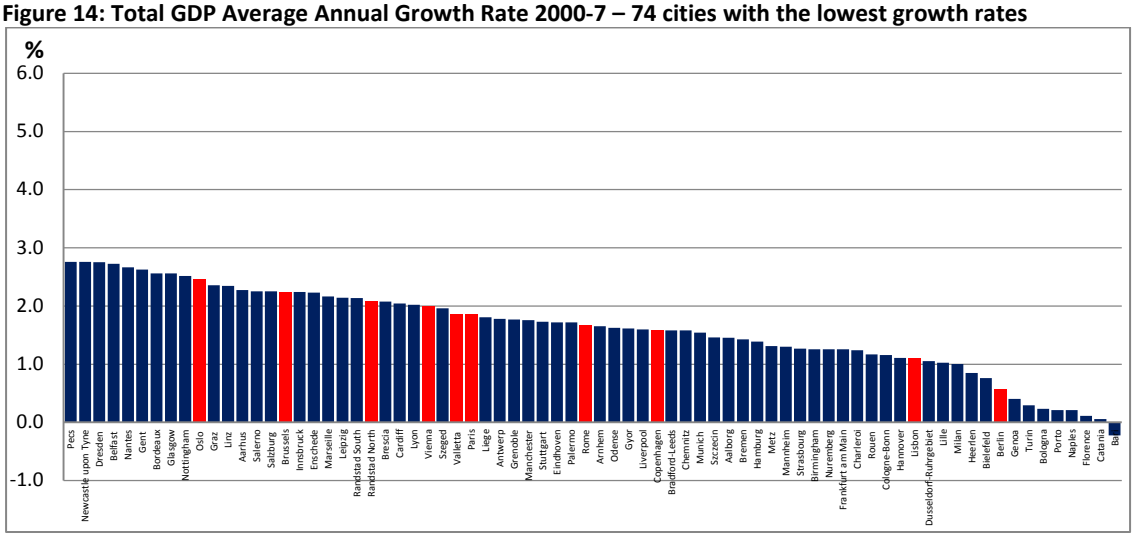
Figure 13: Total GDP Average Annual Growth Rate 2000-7 – 75 cities with highest growth rates



Source: Eurostat

4.13 Many of the major Western and Central capitals such as Brussels, Randstad North, Vienna, Paris, Rome and Berlin are among the group of slower growing places, see figure below, Figure 14.

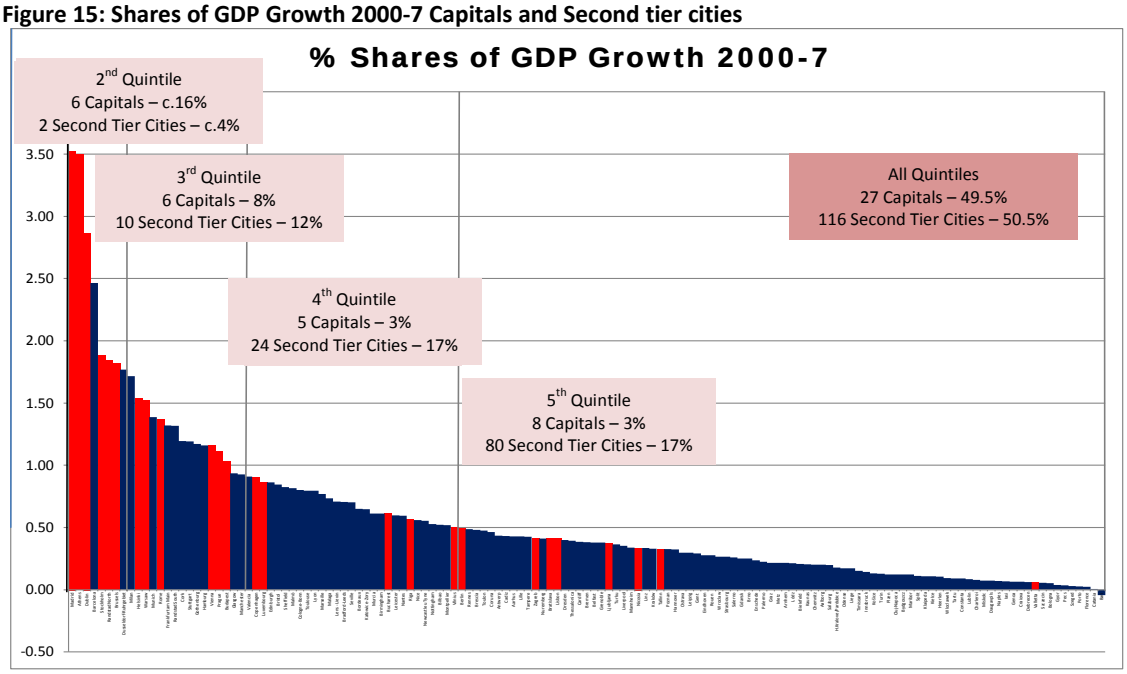
Figure 14: Total GDP Average Annual Growth Rate 2000-7 – 74 cities with the lowest growth rates



Source: Eurostat

4.14 Europe's two global cities, London and Paris, together accounted for one fifth of the growth that capitals and second tier cities together provided, underlining their scale and global significance. The next 20% was accounted for by 6 capital cities but 2 second tier cities, Barcelona and Dusseldorf-Ruhrgebeit, made important contributions. A further 6 capitals but also 10 leading second tier cities contributed the next 20% of total growth. The fourth quintile is accounted for by 5 capitals and 24 second tier cities. The last quintile and long tail of the distribution is made up of 8 capitals and 80 second tier cities, which contributed, respectively, 3% and approximately 17% of total growth. In other words: a small number of cities at the top produce a significant amount of growth; a rather larger number at the bottom produce relatively little; while a substantial number of second tier cities in the middle make a quantitatively significant contribution to growth across Europe. And of course some capitals themselves only produced modest contributions to growth during this period. Figure 15 shows this. We have taken out the performance of the top quintile London and Paris to show more clearly the contribution that second tier cities and capitals outside those two global cities make.

Figure 15: Shares of GDP Growth 2000-7 Capitals and Second tier cities



Source: Eurostat

4.15 Figures 16 & 17 indicate the relative growth performance of capital and second tier cities. It charts cities by their share of GDP in 2000 and their share of growth over the 2000-2007 period. The cities above the line had higher shares of growth than their initial share of output, those below the line lower shares of growth than their initial share of output. It is a simple measure of whether the cities were performing above their weight or not. For comparability with Figure 15, the chart omits London – which had a higher share of GDP growth than its initial share of GDP – and Paris, which had the opposite. 61 of the 116 second tier 's (53 percent) had higher shares of growth over the period than their share of GDP at the beginning, indicating that, to varying degrees, they were 'punching above their weight'. Figure 17 places the cities in their national context. 57 punch above their weight ; 61 do not.

Figure 16: Shares of total GDP 2000, and GDP growth 2000-2007, capitals and second tier

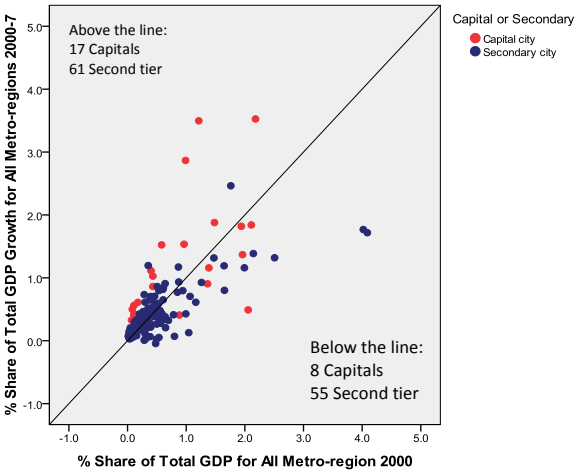
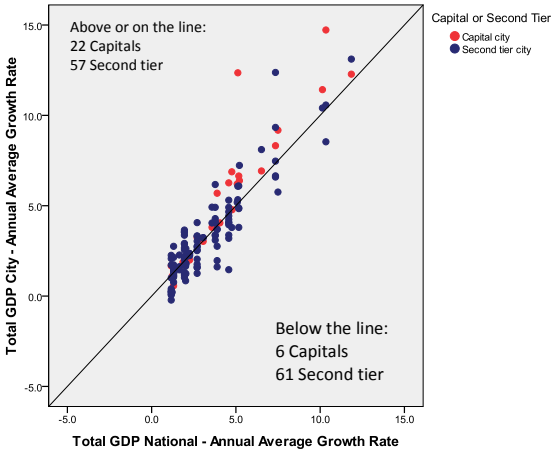
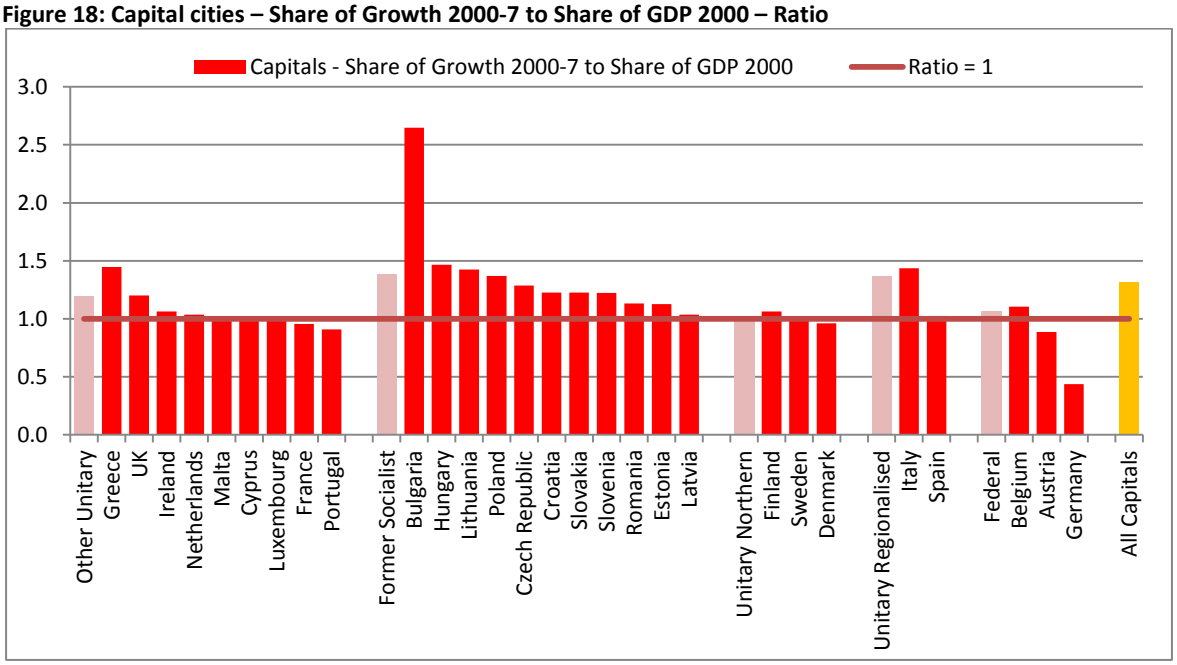


Figure 17: Total GDP - City growth rates compared with national growth rates, 2000-7



4.16 In Figures 18 & 19 we examine GDP and GDP growth data by country. Figure 18 again shows the dominance of capitals. In 22 out of 28 countries capitals had a greater share of growth 2000-7 than their initial share of GDP in 2000. The exceptions are France, Portugal, Sweden, Denmark, Austria and Germany.

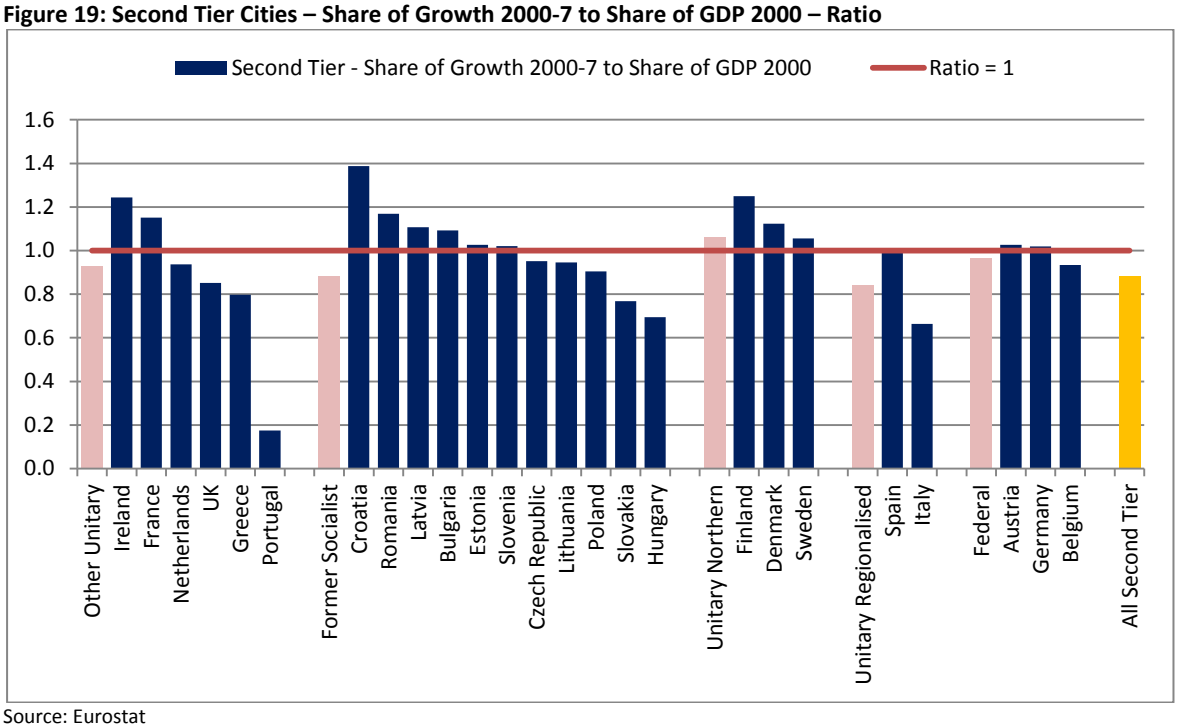
Figure 18: Capital cities – Share of Growth 2000-7 to Share of GDP 2000 – Ratio



Source: Eurostat

4.17 Figure 19 shows the average performance for second tier cities grouped in each country. The strong performance of some of the former socialist states stands out. Six of them had growth rates above their initial share. This was also the case in three of the Nordic unitary states, two of the unitaries and in two of the federals.

Figure 19: Second Tier Cities – Share of Growth 2000-7 to Share of GDP 2000 – Ratio



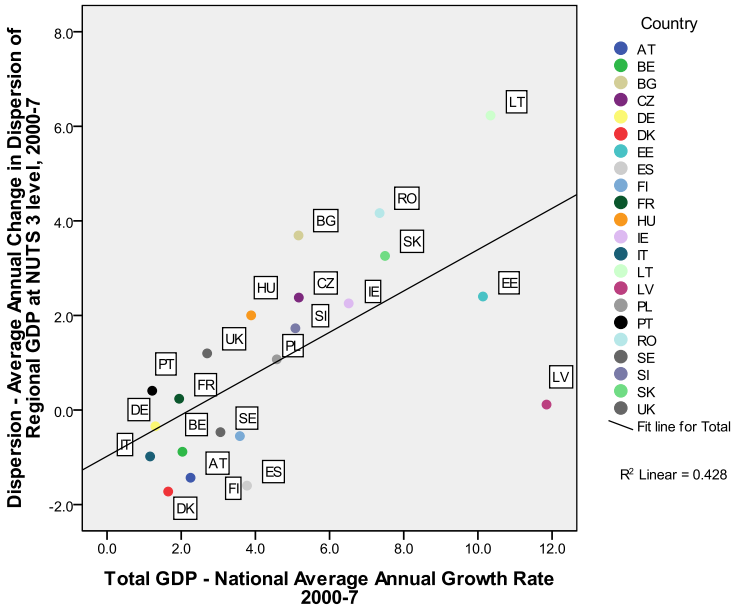
Source: Eurostat

Territorial cohesion – the role of capitals and second tier cities

4.18 Figure 20 gives an indication of the impact of growth on territorial cohesion in the boom period. It correlates national growth rates with change in regional dispersion (at NUTS 3 level). High growth rates tended to be associated with relatively high increases in degrees of regional dispersion and vice versa. Geographically the distinction in performance between east and west Europe again stands out, with

countries in the east experiencing high GDP growth rates also seeing relatively high increases in regional dispersion. The spatial distribution of growth in these countries was particularly uneven.

Figure 20: Changes in the dispersion of regional GDP and GDP growth rates by country, 2000-2007



4.19 Table 7 shows how capitals and second tier cities contributed to regional dispersion. It ranks countries by the change in regional dispersion alongside GDP growth rates for capital, second tier cities and other regions relative to national change. For the Eastern countries with high increases in regional dispersion, with the exception of Romania, growth is heavily skewed towards the capitals. This marked capital bias in growth has contributed strongly to the increase in regional dispersion over the period. In contrast, countries with decreasing regional dispersion were found in the Federal, Nordic and regionalised unitaries, where growth was relatively higher in second tier cities than capitals in five out of eight countries. In these cases, the growth in the second tier cities contributed to more balanced regional growth and a reduction in overall regional dispersion. Latvia, in the east, is also revealing. Its second tier city, Daugavpils had a higher growth rate than the capital, Riga, helping to ensure almost no overall change in levels of dispersion.

Table 7: Regional dispersion and GDP growth rates for capitals, second tier cities and rest of country, 2000-2007

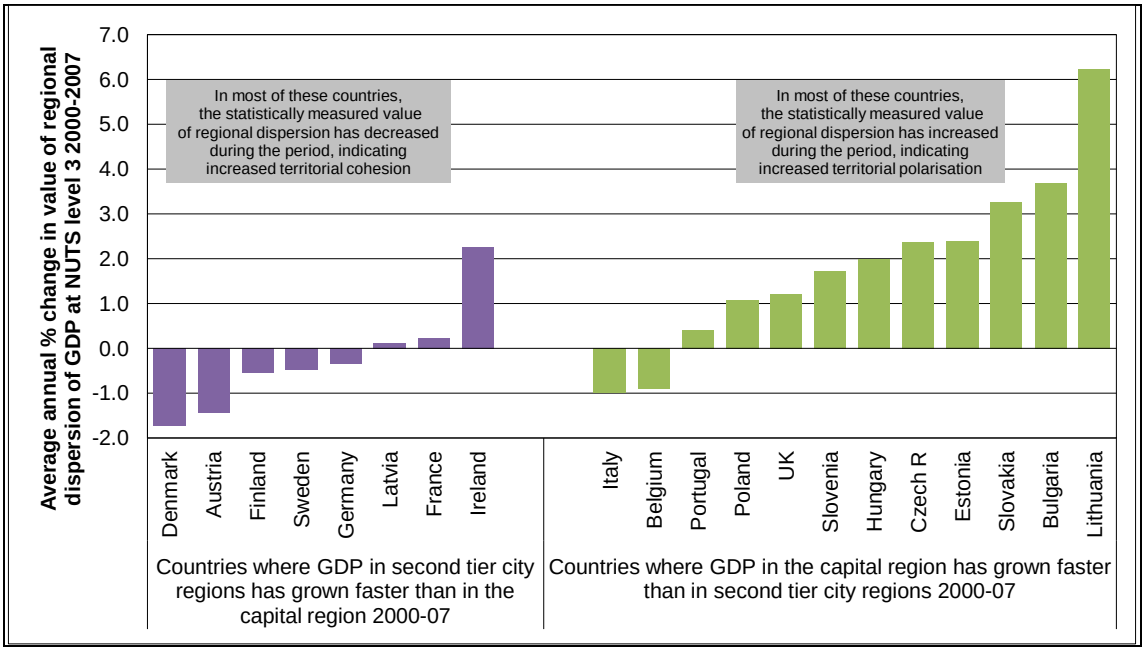
			Growth rates – indexed to national = 1.0			
Country	Dispersion Average Annual % change	Average Annual Growth Rates % – Total GDP	Capitals	Second tier cities	Rest of Country	National
Lithuania	6.23	10.3	1.42	0.94	0.65	1.00
Romania	4.16	7.3	1.13	1.17	0.90	1.00
Bulgaria	3.69	5.2	2.30	1.17	0.45	1.00
Slovakia	3.26	7.5	1.22	0.77	0.96	1.00
Estonia	2.40	10.1	1.13	1.03	0.70	1.00
Czech Rep.	2.38	5.2	1.29	0.95	0.76	1.00
Ireland	2.25	6.5	1.06	1.24	0.79	1.00
Hungary	2.00	3.9	1.46	0.69	0.63	1.00
Slovenia	1.73	5.1	1.22	1.02	0.85	1.00
UK	1.20	2.7	1.20	0.85	0.94	1.00
Poland	1.07	4.6	1.37	0.91	0.95	1.00
Portugal	0.41	1.2	0.91	0.17	1.28	1.00
France	0.24	1.9	0.95	1.15	0.92	1.00
Latvia	0.12	11.9	1.04	1.11	0.88	1.00
Germany	-0.34	1.3	0.44	1.02	1.04	1.00
Sweden	-0.47	3.1	0.99	1.06	0.97	1.00
Finland	-0.55	3.6	1.06	1.25	0.86	1.00
Belgium	-0.88	2.0	1.10	0.93	0.93	1.00

Italy	-0.98	1.2	1.44	0.66	1.19	1.00
Austria	-1.43	2.3	0.89	1.03	1.08	1.00
Spain	-1.60	3.8	1.02	1.01	0.99	1.00
Denmark	-1.72	1.6	0.96	1.12	0.93	1.00

Note: GDP growth rates higher than national shaded.

4.20 Figure 21 below presents dispersion rates in countries where second tier city regions have been growing faster than capitals, and in countries where the reverse is the case. Spain and Romania have been omitted from the chart as their growth rates in capitals and second tier city regions are almost identical. In the bulk of countries where the second tier city regions are growing faster dispersion has decreased indicating that territorial cohesion is increasing. While in ten of twelve countries where the capitals are growing faster dispersion of GDP has increased indicating that increased territorial polarisation is taking place.

Figure 21: Relative Economic Growth of Second Tier Cities and Trends in Territorial Cohesion 2000-7



Source: Tomas Hanell

Total GDP change – changing balance between capitals and second tier cities

4.21 Table 8 shows, for each country and regional grouping, the changing shares accounted for by capital and leading second tier cities of total GDP in both 2000 and 2007. It shows how the balance between capitals and their second tier cities shifted over the period.

4.22 Of the 26 countries for which we have GDP data and which have one or more leading second tier cities, the change in the share of second tier cities of total GDP remained stable in four countries, increased in eleven and fell in eleven. The majority of countries have thus seen second tier cites hold their own or slightly improve their relative position. There remain, however, notable territorial differences:

- Second tier city shares remained stable in two of the three Federal states for which we have data, Austria and Germany and fell in Belgium).
- In the Nordic states - Denmark, Finland, Norway and Sweden – second tier cities slightly increased their share.
- The unitary states provide a mixed picture. In West Europe, France and Ireland both saw their second tier cities increase their relative share while the share fell in both the Netherlands and the UK.
- Of the regionalised states in Southern Europe, the share stayed stable in Spain but fell in Italy. It also fell in both Greece and Portugal.
- While capital cities in all of the former socialist states of Eastern Europe increased their share, second tier cities in five of these states did see slight increases in relative share at the expense of other areas of the country: Estonia and Latvia in the East and Bulgaria, Croatia and Romania in the South East. Slovenia in the Central East saw its second tier city retain its share. The remaining five - Lithuania in

the East and the Czech Republic, Hungary, Poland, and Slovakia in Central East – all saw their second tier city shares fall, indicating a relative weakening of their position.

Table 8: Share (%) of total GDP - capitals and principal secondary cities, 2000 and 2007

Regional grouping/ political system/ country	Capital cities Share (%)		Principal second tier cities Share (%)		Change in share of principal second tier cities 2000-2007		
	Total GDP 2000	Total GDP 2007	Total GDP 2000	Total GDP 2007	Increase	Stable[1]	Decrease
Central: Federal states							
Austria	34.1	33.6	22.7	22.7		✓	
Germany	5.1	4.8	45.3	45.4		✓	
Switzerland	n/a	n/a	n/a	n/a			
Northern (Nordic) Systems							
Denmark	40.1	39.9	30.5	30.8	✓		
Finland	37.2	37.6	16.3	17.1	✓		
Iceland	n/a	n/a	n/a	n/a			
Norway	21.5	21.5	11.9	13.2	✓		
Sweden	28.4	28.3	28.2	28.4	✓		
West: Federal Belgium and other unitary states							
Belgium	39.2	39.7	24.9	24.7			✓
France	28.5	28.4	29.9	30.4	✓		
Ireland	48.1	49.1	17.1	18.4	✓		
Luxembourg	100	100	0	0			
Netherlands[2]	25.8	25.9[2]	33.2	33.0[2]			✓
United Kingdom	32.2	33.3	34.4	33.9			✓
South: Regionalised states							
Italy	8.4	8.7	39.6	38.7			✓
Spain	17.7	17.7	34.8	34.9		✓	
South: Unitary states							
Cyprus	100	100	0	0			
Greece	44.9	49.9	9.2	8.7			✓
Malta	94.0	94.0	0	0			
Portugal	36.8	36.6	12.9	12.0			✓
East: Former socialist states)							
Estonia	56.7	59.7	17.3	17.5	✓		
Latvia	65.7	66.8	7.9	8.3	✓		
Lithuania	33.4	39.4	31.5	30.7			✓
Central East: Former socialist states)							
Czech Republic	33.2	35.7	34.4	33.9			✓
Hungary	42.9	47.2	20.9	19.5			✓
Poland	16.0	17.4	39.6	38.7			✓
Slovakia	24.8	26.7	12.7	11.7			✓
Slovenia	34.1	36.1	13.4	13.5		✓	
South East: Former socialist states)							
Bulgaria	24.4	36.4[3]	13.6	14.0[3]	✓		
Croatia	34.3	36.3	8.1	9.0	✓		
Romania	22.0	23.0	17.3	18.3	✓		

Notes: 1. changes of +/- 0.1 are classed as 'stable'; 2. 2007 data are provisional; 3. Data for 2005

Decentralisation and productivity

4.23 We have applied Basel Economics' decentralisation index to our data on capital and second tier cities.[1] Figure 22 shows the relationship between decentralisation and economic performance measured in terms of GDP per person employed. Figure 23 repeats the exercise for the capital cities and second tier city

[1] Basel Economics (2009) *From Subsidiarity to Success: The Impact of Decentralisation on Economic Growth*, Brussels, Assembly of European Regions

averages. Countries with greater degrees of decentralisation are associated with stronger economic performance and the same appears to apply to second tier cities in more decentralised countries.

Figure 22: Decentralisation and National Productivity 2007

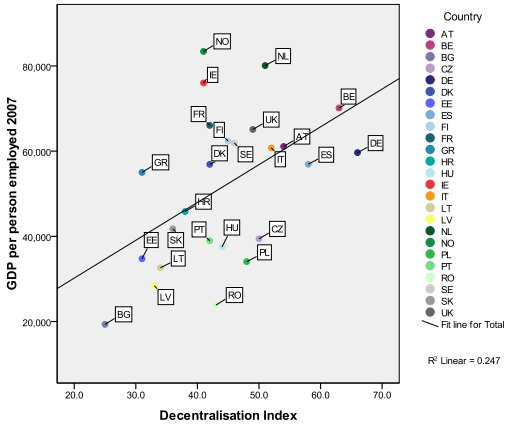
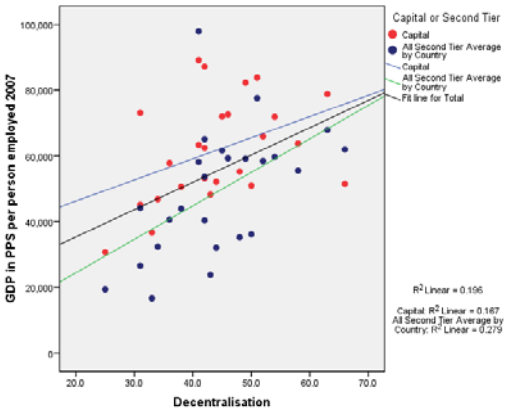


Figure 23: Decentralisation and City Productivity 2007– Capitals, and Second tier cities combined



Performance – GDP per capita

4.24 Leading non-capitals also feature significantly in the list of the most highly ranked cities in terms of **GDP per capita**. 16 of the top 28 cities in terms of GDP per capita are leading non-capital cities, as are 33 of the top 50. All but 9 of the 100 cities with the highest GDP per capita are located in the EU15 member states. The performance gap between cities in EU12 and EU15 countries is striking – the 26 lowest ranked cities of the 149 cities examined were all EU12 second tier cities. Map 6 shows the location of capital and leading non-capital cities according to GDP per capita and divides them into five size bands to give an impression of where the most productive, high value added cities are located and where urban systems are weaker in this sense. It again stresses the importance of the core area of Europe but shows that there are some significant outliers.

4.25 As with total GDP, we grouped together member countries according to the extent of the gap between the GDP per capita of the capital and the leading non-capital city (Figure 24). It shows a variety of things. The GDP per capita of the leading non-capital city in Germany, Austria, Italy, Belgium and Ireland exceeded that of their respective capitals in 2007. The GDP per capita of the leading non-capital city in Spain, UK, Netherlands and France lagged behind that of their respective capitals in 2007 to only a modest degree - by between 5 and 20%. In Denmark, Norway, Poland, Sweden, Finland and Portugal, the GDP per capita of the leading non-capital lagged behind that of the capital by between 20 and 30%. Leading non-capital cities in Hungary, Romania, Lithuania, Greece, Czech Republic, Slovenia and Croatia significantly trail behind their capitals in terms of GDP per capita – by between 30-45%. In Bulgaria, Estonia, Latvia and Slovakia, the gap in GDP per capita between capital and leading non-second tier is very large indeed ranging from 50 to 65%. The gap in performance between the capital and leading non-capital cities tends to be much greater in the EU12 than in the EU15 countries. Again, we were unable to include Luxembourg, Cyprus, Malta, Iceland and Switzerland in the analysis owing to either the lack of a significant second tier city or the unavailability of data. Figures 25 to 27 again show the detailed position for all capitals and second tier cities by European region and by individual country.

Map 6: Capital and Second tier cities – GDP per capita in PPS, 2007

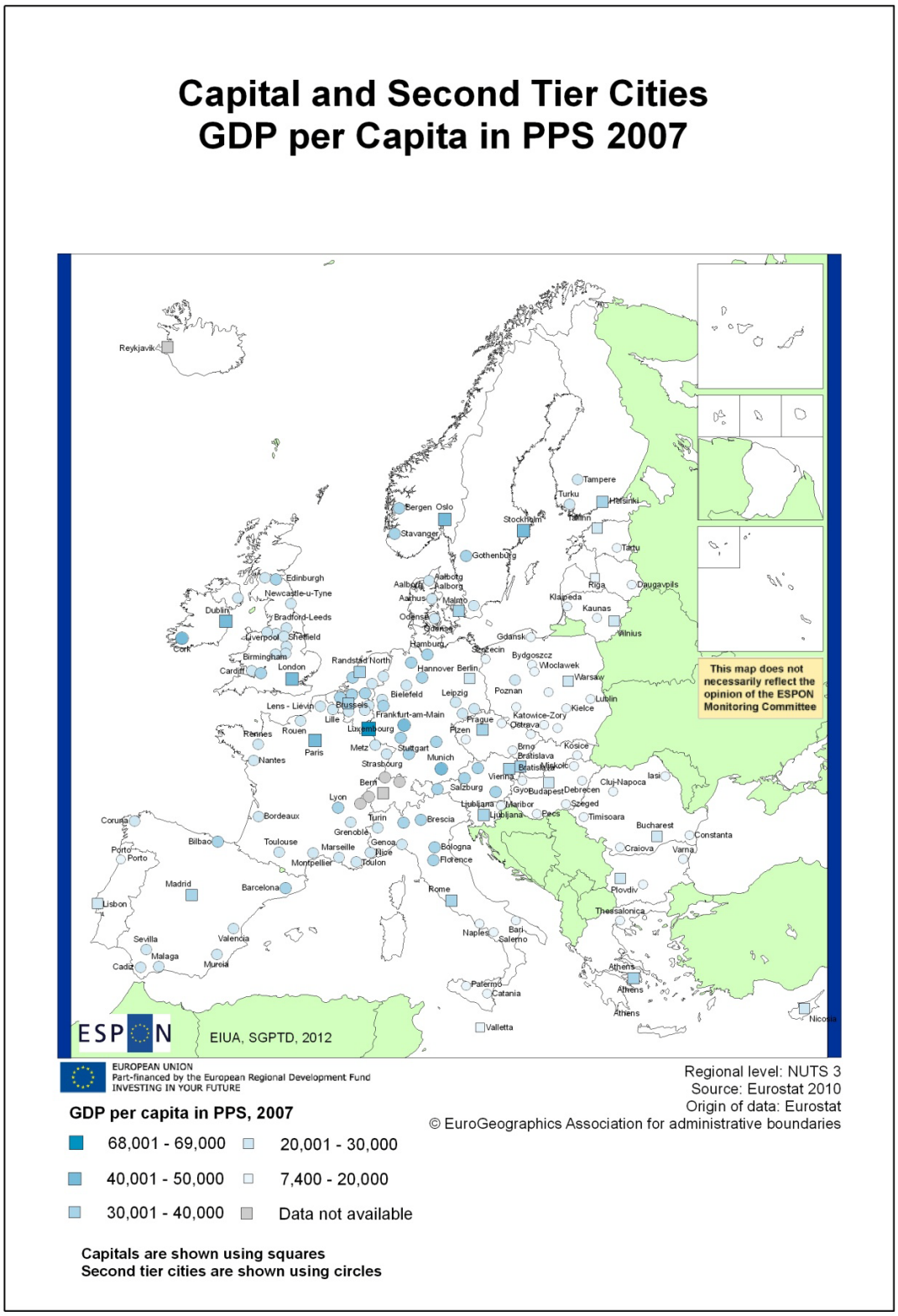
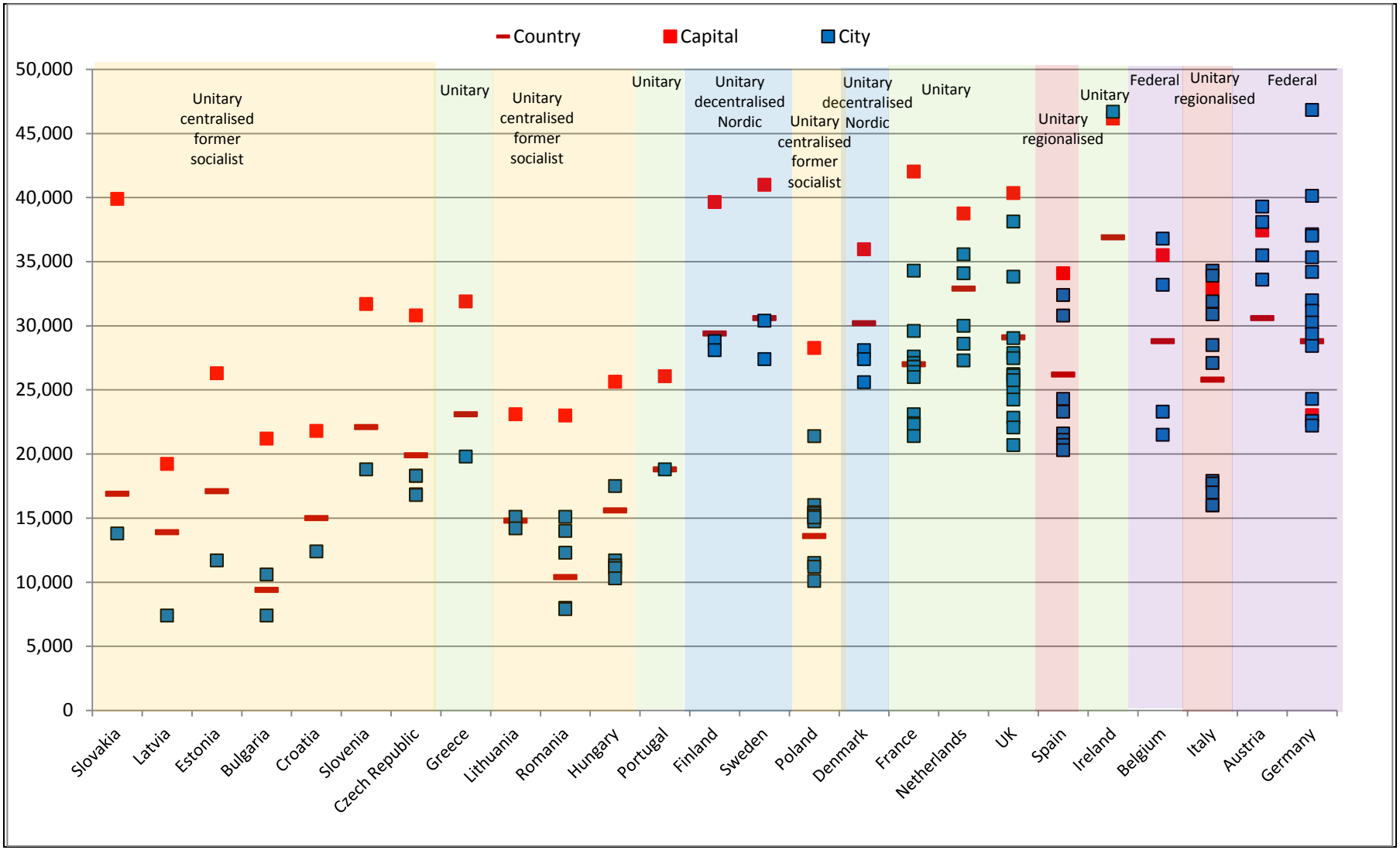


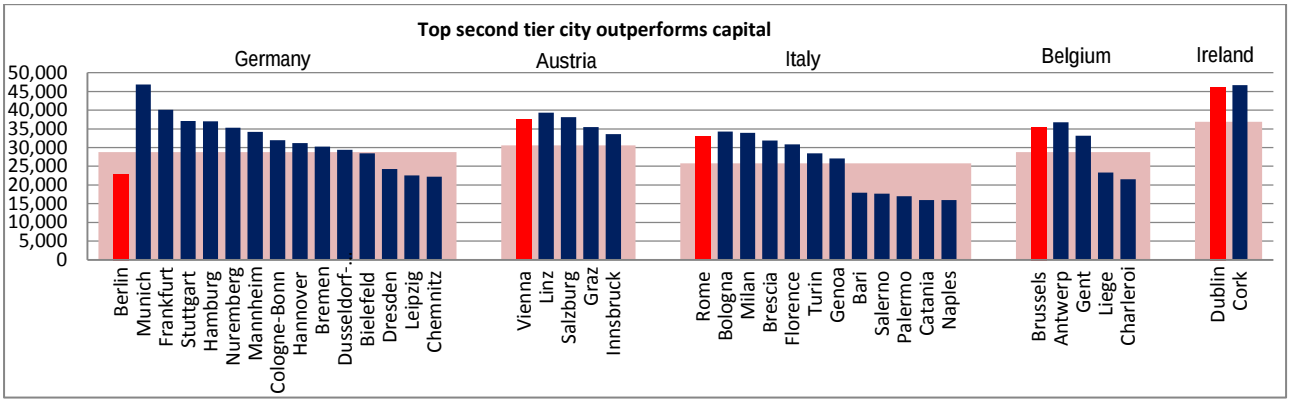
Figure 24: GDP per capita in PPS, 2007, ordered by gap (as a %) between capital and best second tier

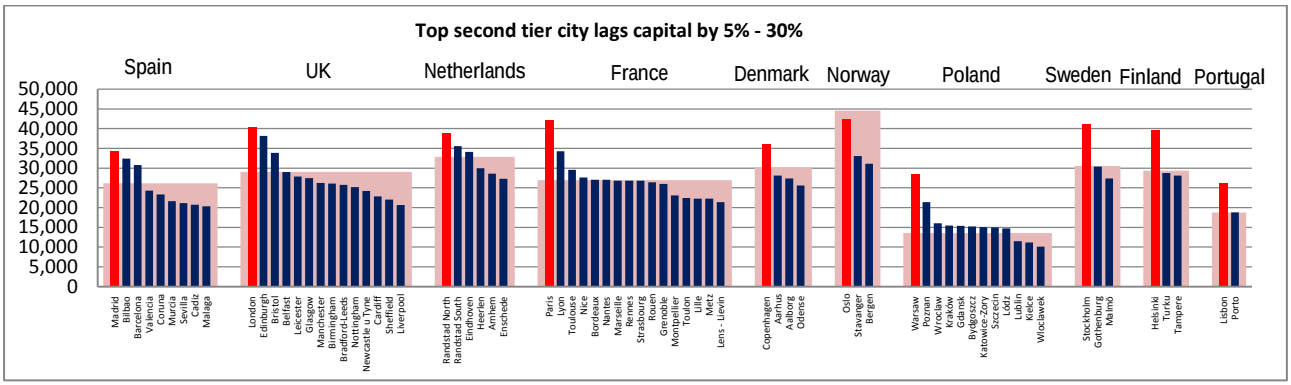


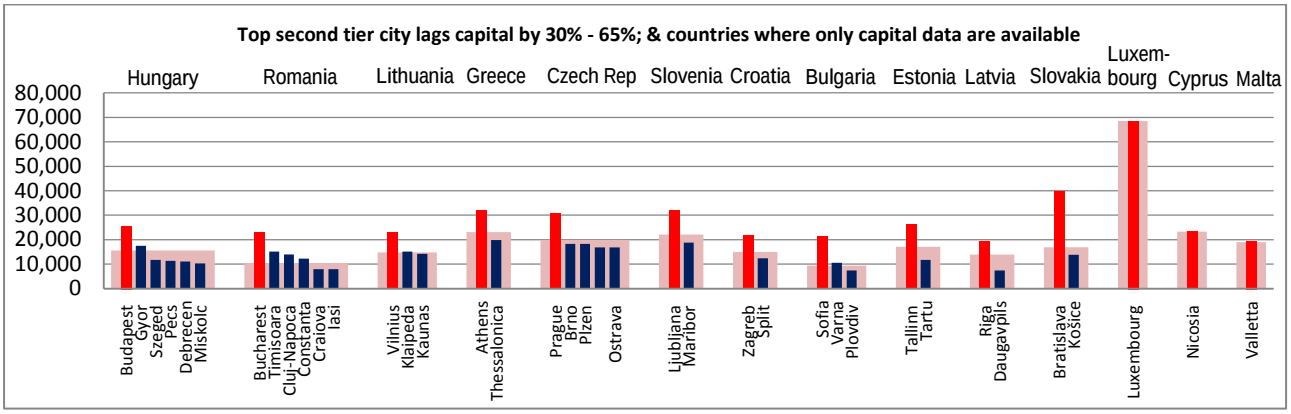
Source: Eurostat

Recent performance of second tier cities– closing the gap with capitals in many but not all countries

Figures 25-27: GDP per capita in PPS 2007





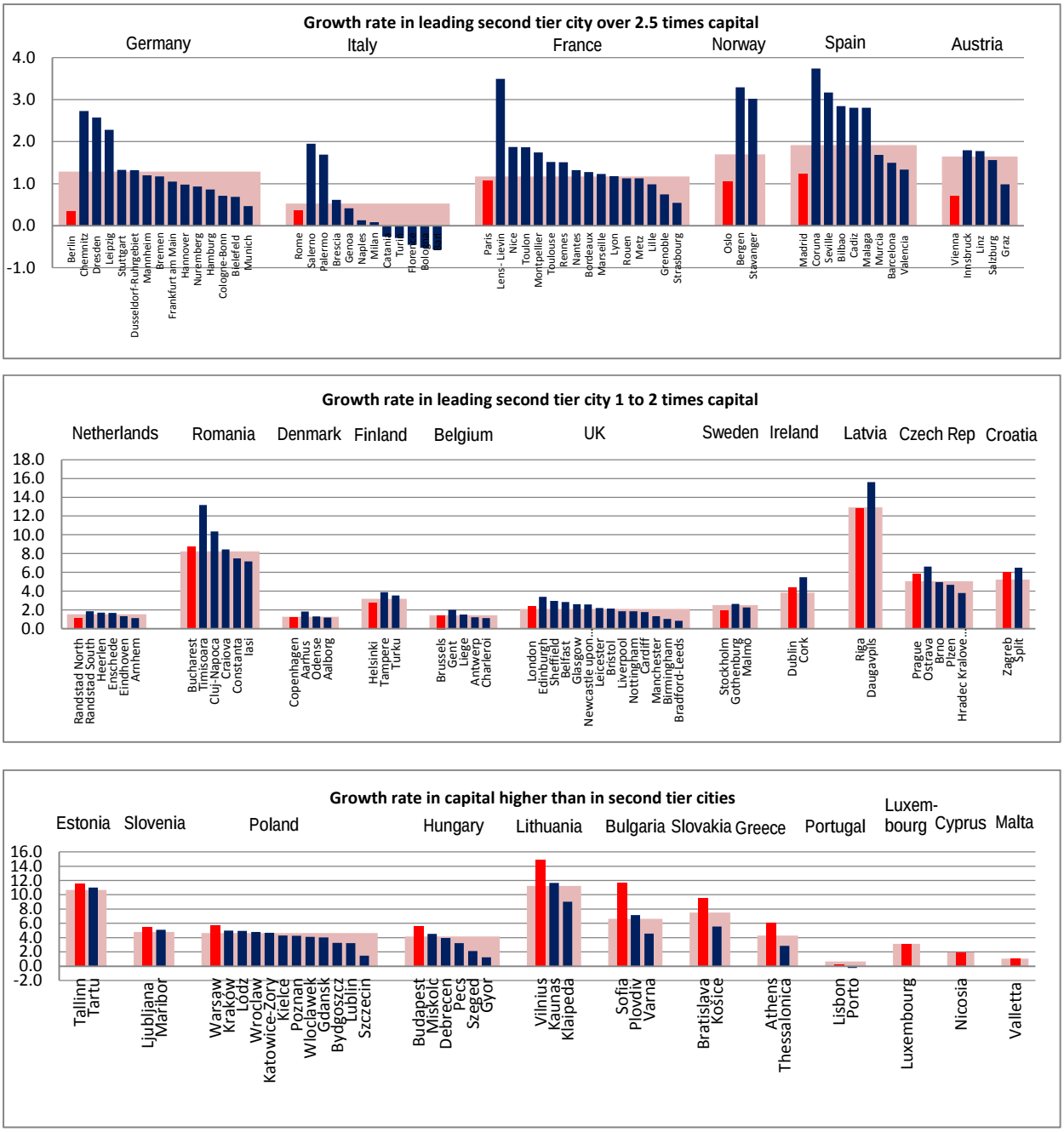


Source: Eurostat & DG-Regio

Changes in GDP per capita 2000-07. Many second tier cities outstrip their capitals

4.26 The previous Figures showed the position in 2007. Figures 28-30 by contrast show the important dimension of change. There are very significant differences in the rate of growth of capital and second tier cities. Despite the economic dominance of capitals, between 2000 and 2007 many second tier cities grew faster than them. For example, in the Federal states, all of Germany's and Austria's and half of Belgium's second tier cities outperformed the capital. In the regionalised states, all of Spanish and a third of Italian second tier cities grew faster than their capital. In the Nordic states, all grew faster than the capital. In the unitary states, all second tier cities in Netherlands, 12 out of 15 in France, 5 out of 13 in the UK, and 1 in Ireland were above their capital. In Greece and Portugal, however, the capitals grew faster than the second tier cities. The position in many of the new member states is markedly different. In the former socialist states of Slovakia, Bulgaria, Lithuania, Hungary, Poland, Slovenia and Estonia all the capital cities grew faster than all the second tier cities and all but one in the Czech Republic. However, in Romania 2 out of 5, and in Latvia and Croatia both second tier cities grew faster than their capital.

Figures 28-30: GDP per capita – average annual % change, 2000-7

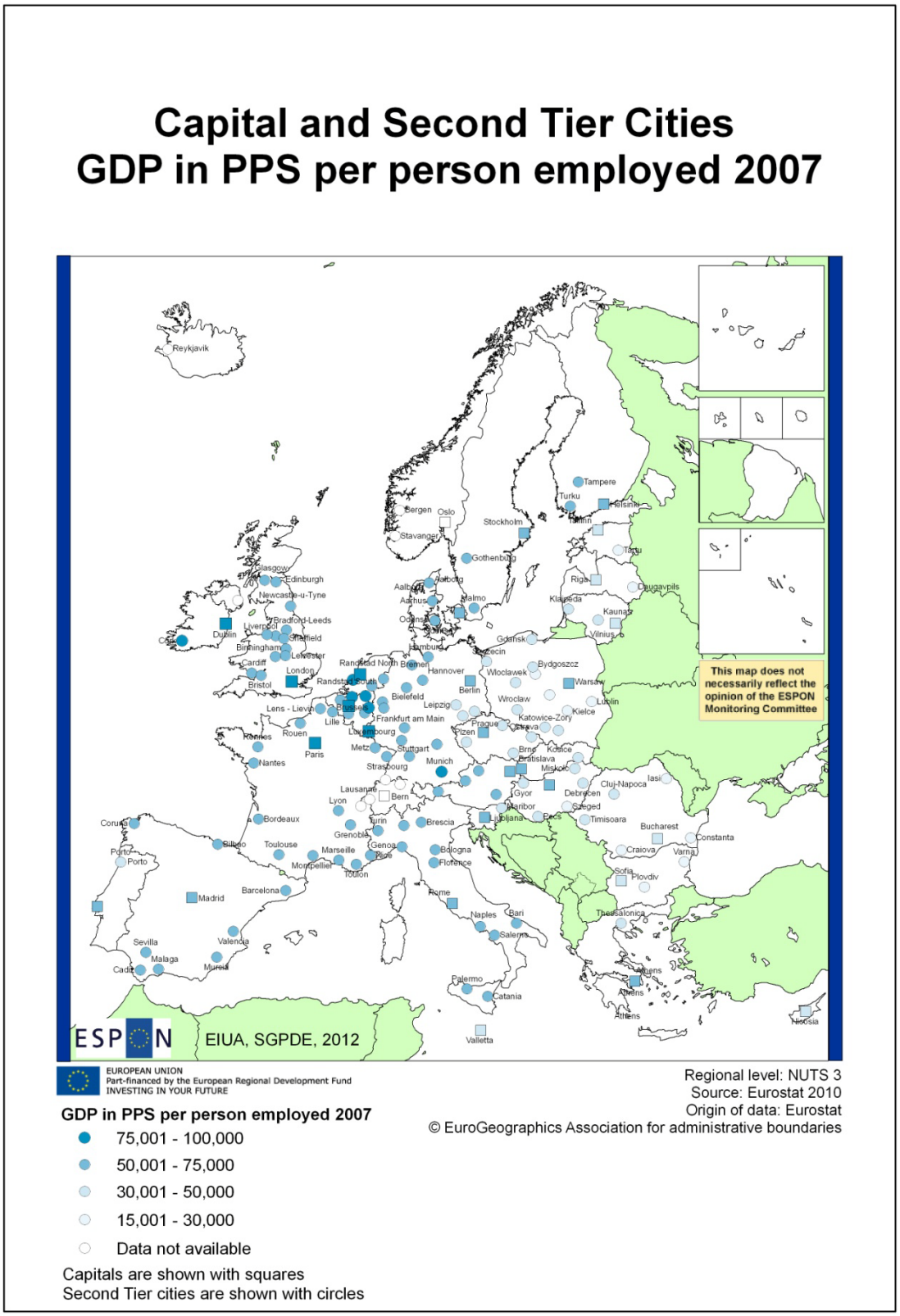


Source: Eurostat

Productivity – a European hierarchy?

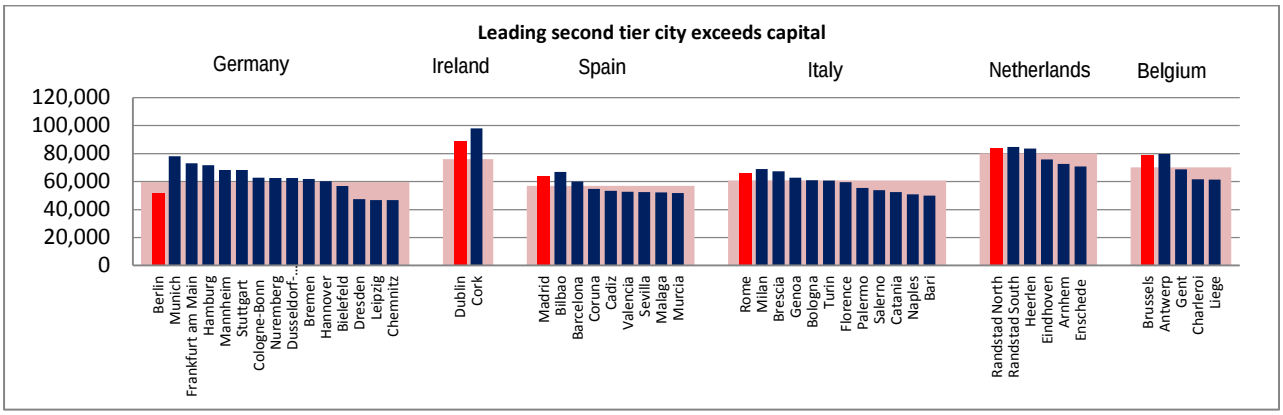
4.27 Map 7 and Figures 31 to 33 show GDP per person employed in 2007 and provide the most recent ranking of relative productivity across capital and leading second tier city metropolitan regions. Leading second tier cities outperform capitals in six of the twenty-six countries for which we currently have data. The pattern is reversed in the remaining nineteen countries.

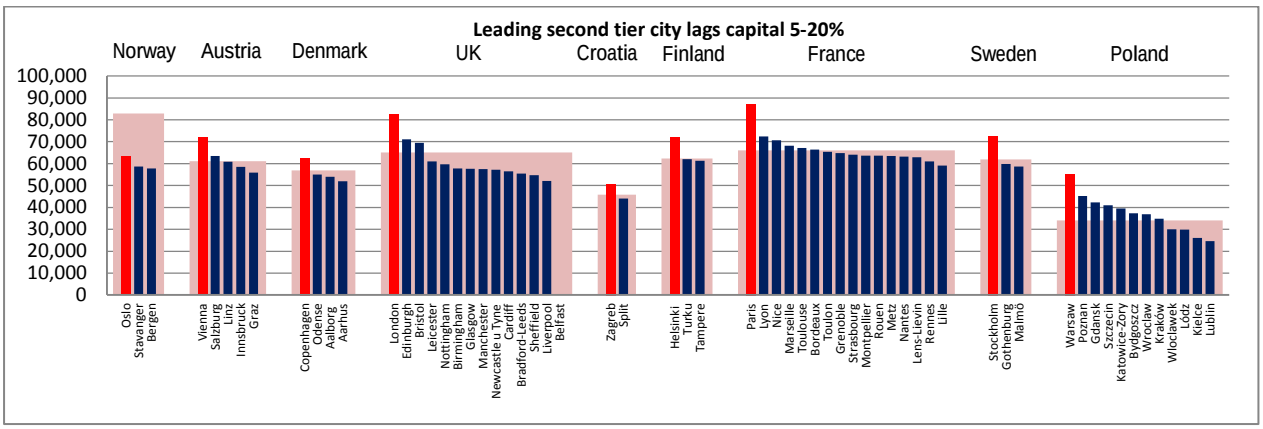
Map 7: Capital and second tier cities – GDP in PPS per person employed, 2007

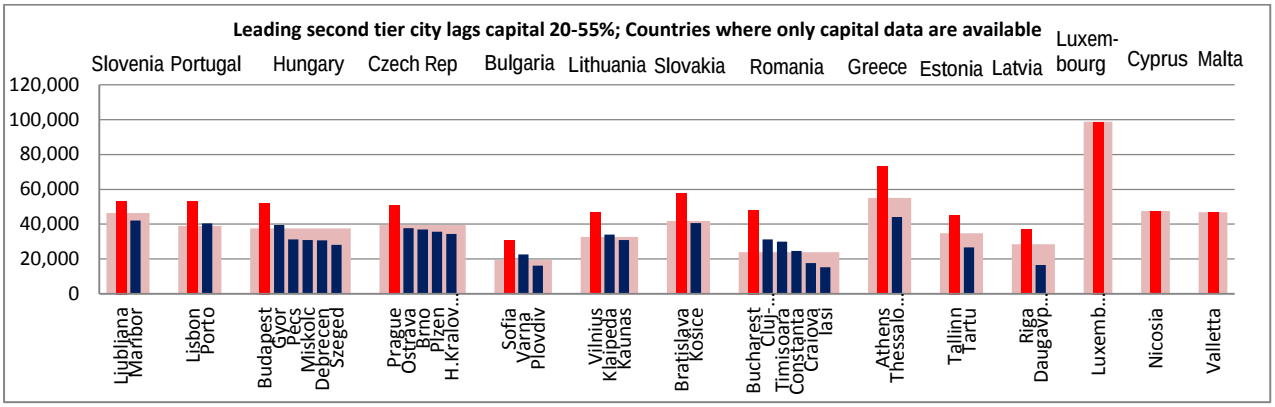


4.28 We have grouped countries in broad performance bands which show second tier city productivity levels against capital city and national productivity level benchmarks – one where leading second tier cities have levels above their capitals and two where the reverse is the case. The distinctiveness of Germany's metropolitan regions again stands out. Munich, although only ranked sixth in metropolitan region population, is a clear leader in GDP per person employed, which exceeds the corresponding figure for the capital Berlin by more than one half. Indeed, eleven of the country's metropolitan regions have higher levels of productivity than Berlin, underlining the latter's historically conditioned non-primate status (figure 31). In five further countries second tier cities have productivity levels greater than their capital city counterparts, albeit by only up to 10% more: Cork in Ireland; Bilbao in Spain; Milan and Brescia in Italy; Randstad South in the Netherlands; and Antwerp in Belgium (figure 31).The remaining countries are ranked by degree to which the levels of productivity of leading second tier cities lag behind their respective capitals – by between 5% and 20% in Norway, Austria, Denmark, the UK, Croatia, Finland, France, Sweden and Poland, and by 20% and 55% in Slovenia, Portugal, Hungary, Czech Republic, Bulgaria, Lithuania, Slovakia, Romania, Greece, Estonia and Latvia. Croatia and Poland are the highest ranking of the former socialist states. The productivity challenge facing second tier cities in the former socialist states is underlined by the dominance of the capitals. All but two of the eleven countries in this 20-55% grouping are former socialist states – the exceptions being Portugal and Greece. The widest gaps are to be found in Latvia, Estonia and Romania. Across all the different bandings there are second tier cities with productivity levels above national, even in some of those countries where second tier cities as a whole have levels markedly below those of their capital cities. 15 of the 26 countries have at least one second tier with productivity levels above national averages. The polycentric countries again stand out with Germany and Poland having ten and seven second tier cities, respectively, having productivity levels above national. In the former socialist states, Romania has three and Bulgaria, Hungary and Lithuania each have one.

Figures 31-33: GDP in PPS per person employed 2007





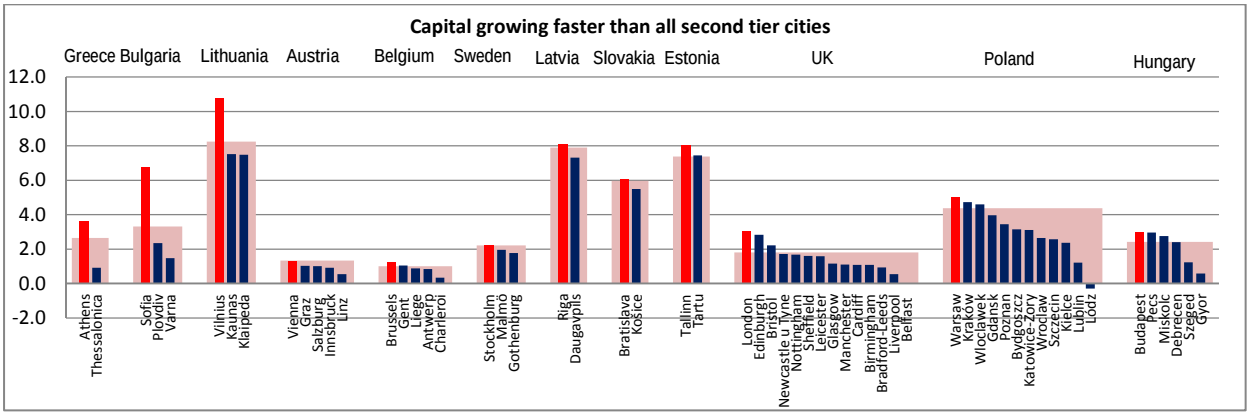


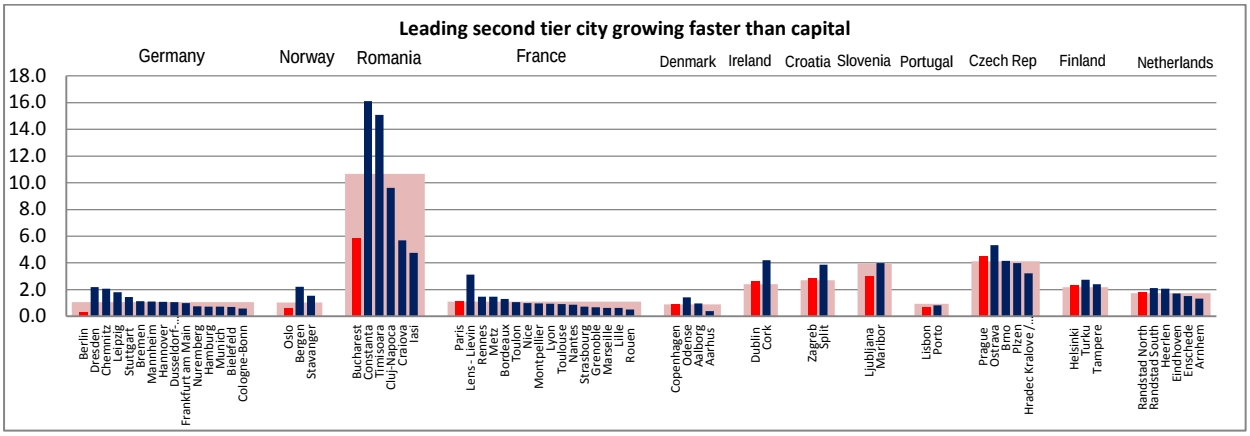
Source: Eurostat

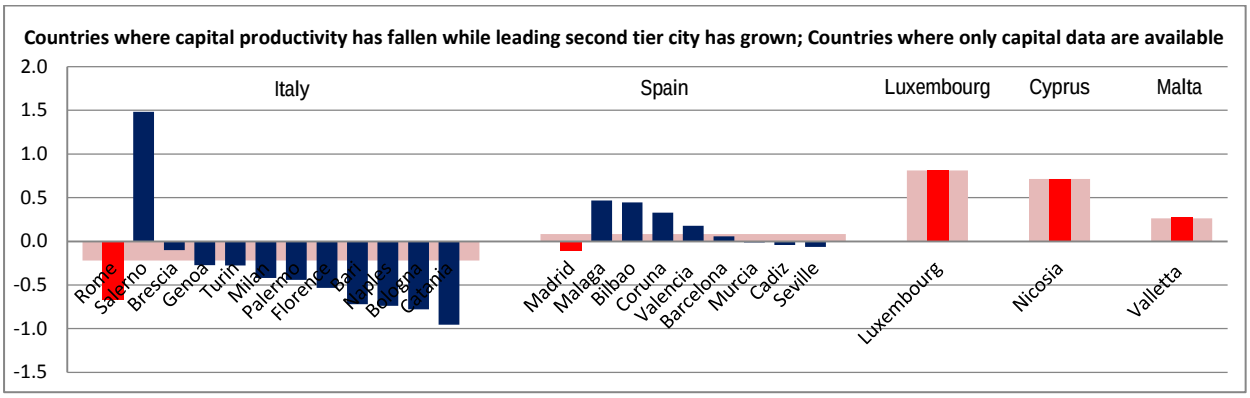
Changes in Productivity – some impressive second tier city growth rates

4.29 Figures 34-36 and Map 8 show average annual percentage changes in GDP per person employed for capital and second tier cities over the 2000 to 2007 period. In the federalised states, none of either Austria's or Belgium's second tier cities had faster growth rates than the capital. The reverse was true in Germany where all of the second tier cities had growth rates above that of Berlin. In the Nordic states, Turku and Tampere in Finland, Bergen and Stavanger in Norway, and Odense and Aalborg in Denmark outperformed the capitals. In Western Europe, Cork in Ireland, Randstad South and Heerlen in the Netherlands, and Lens-Lieven, Rennes, Metz and Bordeaux in France were above their capital. In the UK no second tier city matched London. In the regionalised states of Italy and Spain real growth rates actually declined in both their capitals and some of their leading second tier cities. In Southern Europe, Thessalonica's growth rate lagged well behind that of Athens while Porto's exceeded that of Lisbon. A more differentiated pattern emerges across the former socialist states of East, Central East and South East Europe. In the East, none of the second tier city growth rates matched their capitals. In Central East some second tier cities showed much stronger performances with growth rates above those of their capital cities in Slovenia and Czech Republic, while in Slovakia, Poland and Hungary the capitals outperformed all second tier cities. In the South East region Split in Croatia and Constanta, Timisoara and Cluj-Napoca in Romania outperformed their respective capitals. In these cities there are some signs of catching up. Figures 34-36 again give more detail by region and country.

Figures 34-36: GDP per person employed – average annual % change, 2000-7

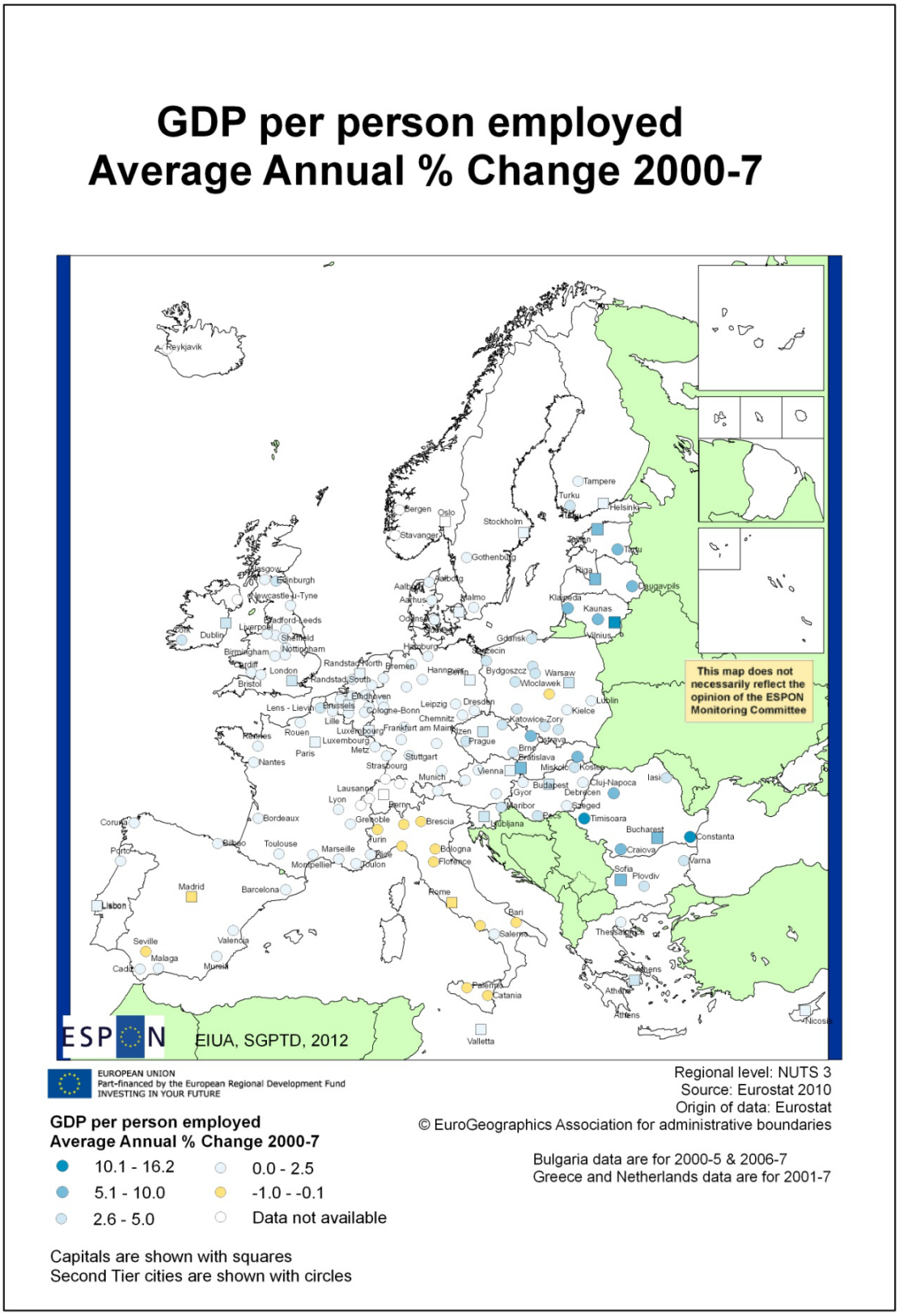






Source: Eurostat

Map 8: GDP per person employed – average annual % change, 2000-7



5. EMPLOYMENT

Recent employment change. Second tier cities performing relatively well – but marked territorial differences

5.1 Capital cities dominate employment. In only three European states do individual second tier metropolitan regions have more employment than their respective capital city regions – Dusseldorf-Ruhrgebeit in Germany, Milan in Italy, and Zurich in Switzerland. Looking at recent employment change, however, a more revealing pattern is visible, see figures 37-39.

5.2 In the central Federal States all four Austrian and nine of fourteen German second tier cities outperformed their capital city. In Germany, the difference in performance was not simply a contrast between former east and west German cities – with Dresden in the east performing relatively well in relation to Berlin and, for example, Hannover and Dusseldorf-Ruhrgebiet, in the west, less well.

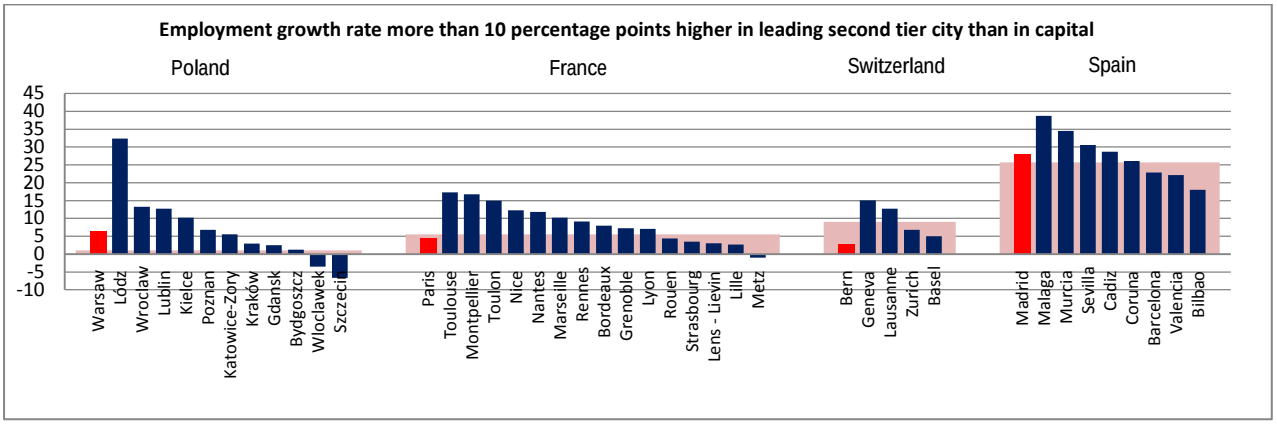
5.3 Non-capital cities in the four **Nordic states** of Denmark, Finland, Norway and Sweden all showed relatively strong growth in relation to their capital: Aarhus in Denmark, Tampere in Finland, Stavanger in Norway and Gothenburg and Malmö in Sweden.

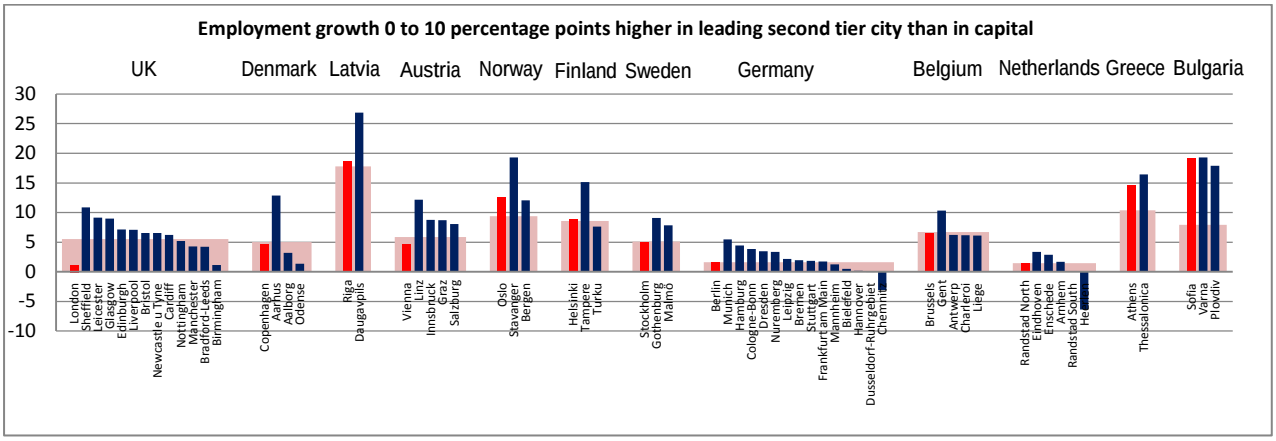
5.4 In **West Europe**, second tier cities also performed relatively well in relation to their capitals with the exception of Ireland, where employment growth in Cork was below Dublin's growth rate and federal Belgium where only one of four second tier cities outperformed Brussels. In the UK, all the English core cites performed relatively well in relation to the capital, as did Glasgow, Edinburgh and Cardiff. In France, ten second tier cities outperformed Paris and three second tier cities in the Netherlands outperformed the capital metropolitan region.

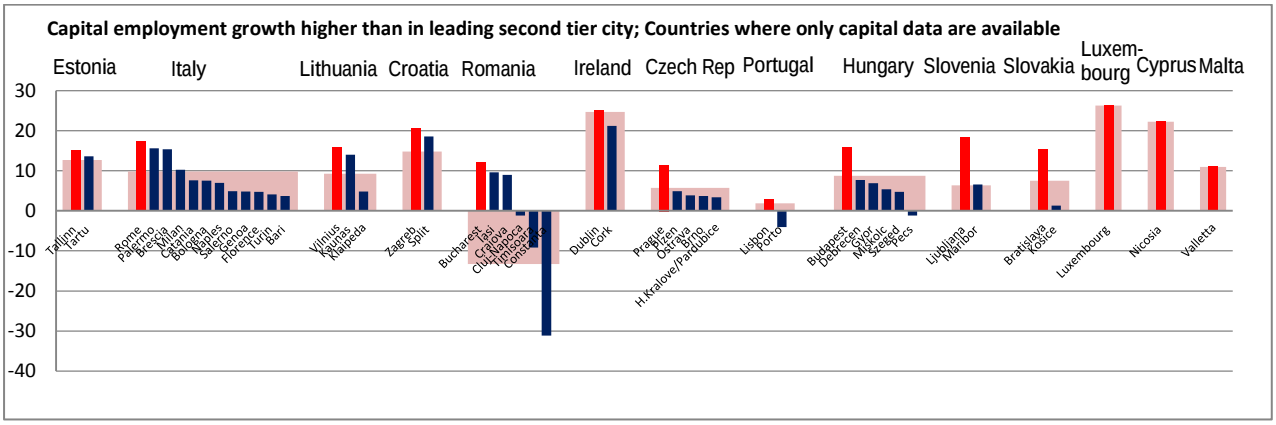
5.5 In **South Europe**, the picture is more mixed. Greece's principal non-capital city outperformed Athens. In Spain performance was evenly split with four of its second tier cities outperforming and four underperforming in comparison with Madrid. Italy stands out, with none of its second tier cities matching Rome's growth rate.

5.6 In the **former socialist states of central east, east and south-eastern Europe** the overall performance of second tier cities, with a few notable exceptions for example Poland, is markedly much weaker than their western and northern counterparts. In only three of the eleven states did a small number of second tier cities have faster growth rates than their capital cities: Latvia (Daugavpils), for a shorter time-period, Bulgaria (Varna), and Poland (Lodz, Wroclaw, Lublin, Kielce, and Poznan). In the others, the capitals had stronger growth rates. In the case of Poland, it is worth also noting that two of its eleven principal second tier cities actually saw employment decline. Romania also stands out with three of its five second tier cities also seeing employment decline while the capital grew.

Figures 37-39: Employment % Change 2000-7







Source: Eurostat; Swiss data are 2001-8 and are sector 2 & 3 employment; Greek and Dutch data are 2001-7; Bulgarian data are 2000-5

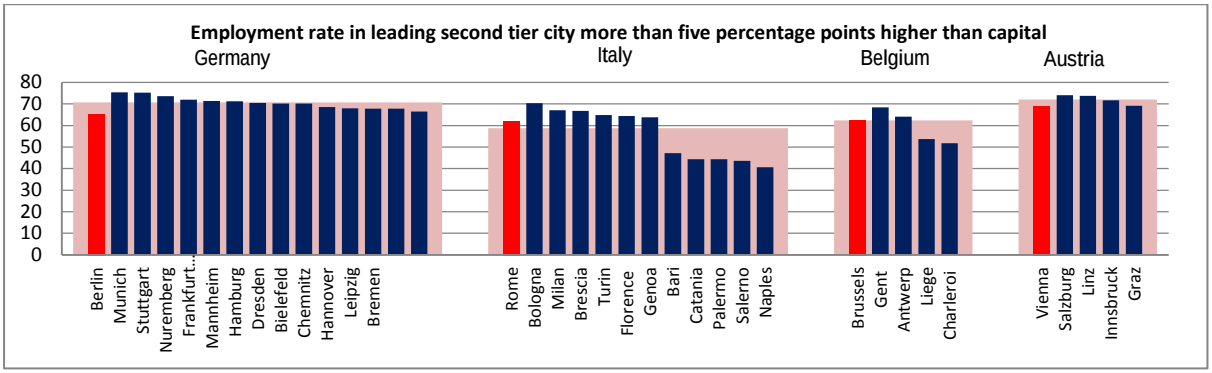
Employment rates

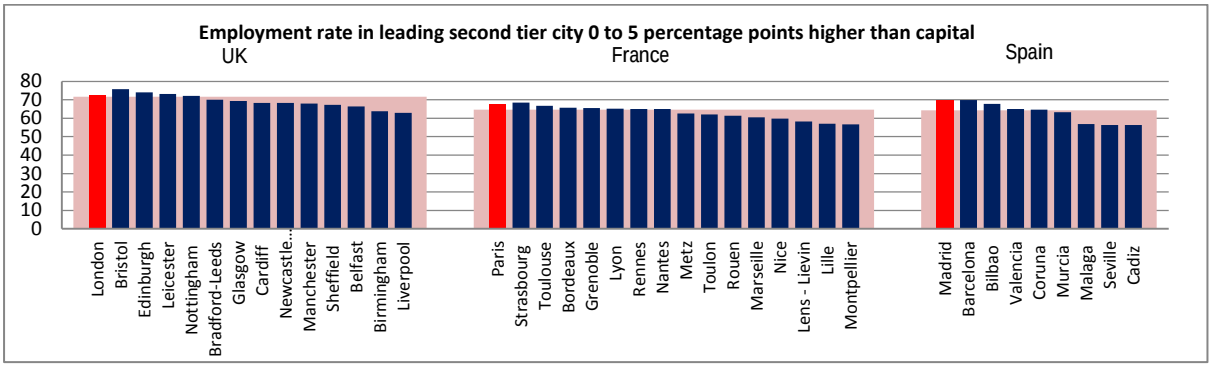
Employment rates – some strong performances but still underused potential

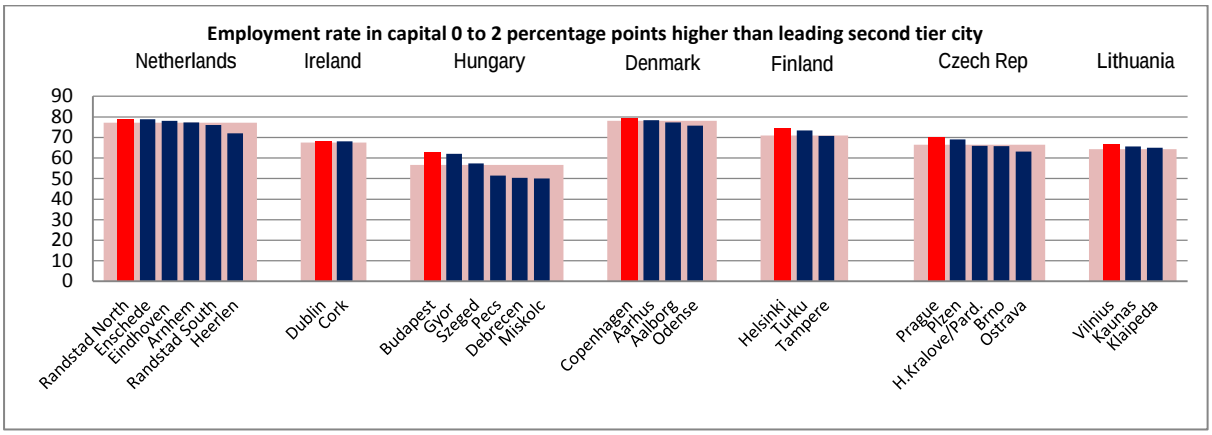
5.7 Employment rates for capitals ranged from 56 percent for Valletta in the South, to 79 percent for Copenhagen in the North. For second tier cities, the range stretched from 41 percent, for Naples in the South to 79 percent for Enschede in the West. The average for both groups together was 66 percent, slightly higher for capitals (69 percent) than secondaries (65 percent).

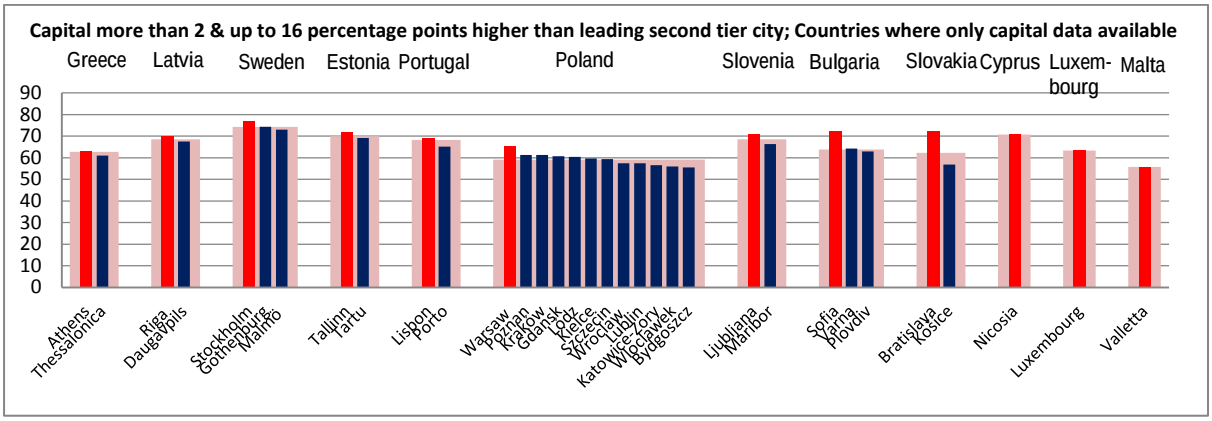
5.8 Figure 40 shows that second tier cites had employment rates at least 5 percentage % points higher than their capitals in 4 countries, 3 were federal and one regionalised. Figure 41 shows that in 3 other countries leading second tiers were up to 5 percentage points higher. At the other extreme Figures 42 and 43 highlight the challenges facing second tier cities, particularly in the former socialist countries, where second tier cities lagged the capital in all nine countries, ranging from a 1% gap in Hungary to a 16% gap in Slovakia. In the Central East, East & South East second tier cities, none of the 28 second had employment rates above their capitals although 12 did have rates above national. At the other extreme are the Central federal states of Austria and Germany. All 18 of their secondary cities had employment rates above the rates of their two capitals. Only 8 of these, however, had employment rates above their respective national averages. The underused employment potential of a significant number of second tier cities – and a small number of capitals – in all parts of Europe but particularly Eastern and Southern Europe is clearly apparent.

Figures 40-43: Employment rates 2008









Source: DG-Regio

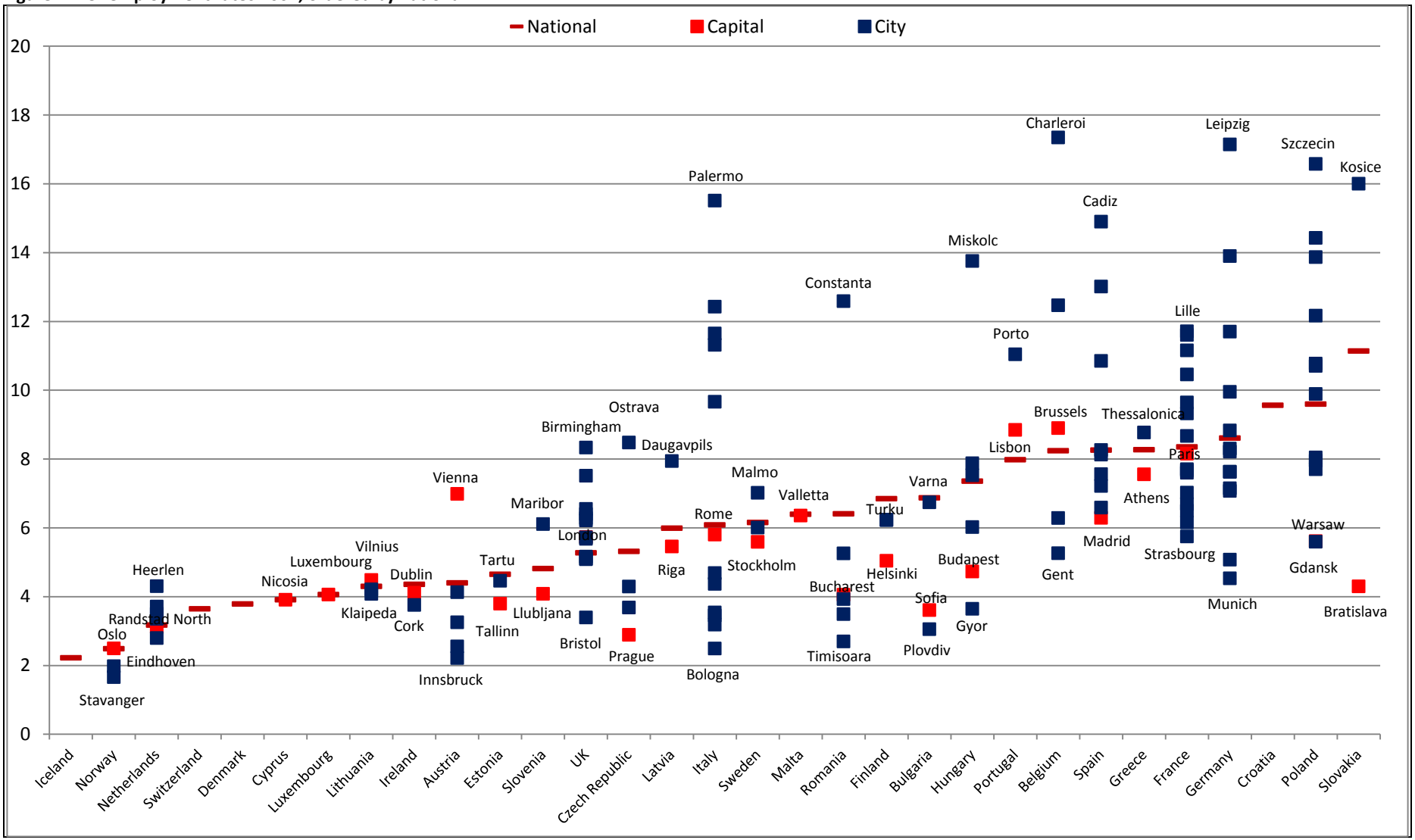
Growth and some big drops in unemployment particularly in the East

5.9 On average, unemployment rates fell by more than a quarter in the growth period 2000-7 from 8.2 to 6.0%. 12 countries did see unemployment rates rise but with only three exceptions by less than one percentage point. Of the 18 countries where unemployment rates fell, 9 of these were in East, Central East and South Eastern Europe – with falls ranging from 0.7% in Romania to declines of 6% or more in Poland, Slovakia, Latvia, Estonia, Bulgaria and Lithuania. Overall, however, the 2000s clearly saw some positive signs of adjustment in most former socialist economies following the difficulties of economic transition in the 1990s.

Unemployment rates falling overall in capitals with improvements in the East

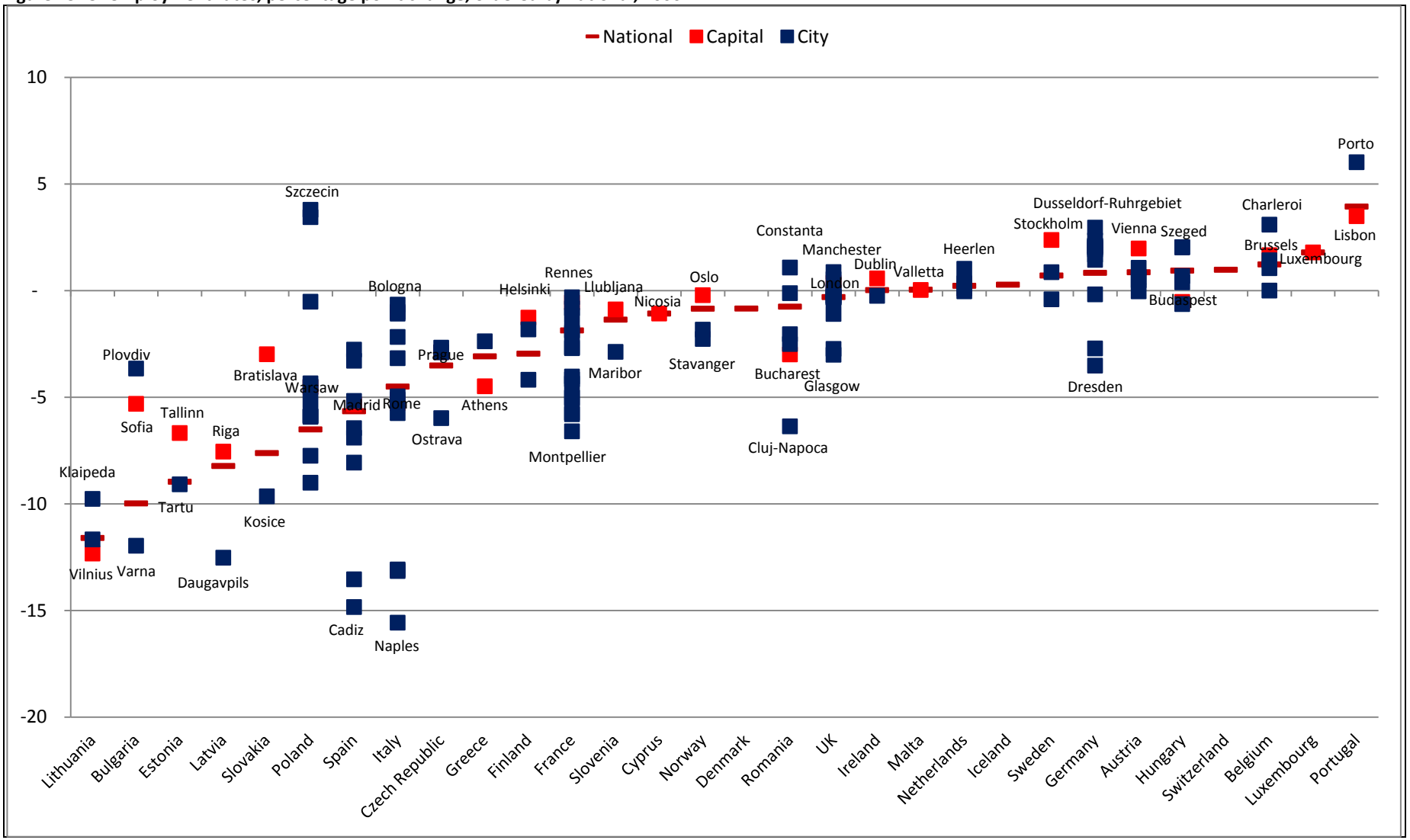
5.10 Unemployment rates for the 26 capital cities for which we have comparable data over the 2000 to 2007 period ranged from 2.3% (Luxembourg) to 16.8% (Vilnius), and averaged 7.3% in 2000. Like national, overall unemployment rates fell over the period. In 2007, the range had narrowed from 2.5% (Oslo) to 8.9% (Brussels), just 6.4% with an average of 5.2%. Nearly two thirds, 17 of the 26, saw a decline in unemployment rates and 9 no change or an increase and of these only three with increases of 2% more, namely Vienna (2.0%), Stockholm (2.4%) and Lisbon (3.5%). In contrast, of the 17 capitals in which unemployment rates fell, 11 saw declines of over 2% headed by Vilnius (12.3), Riga (7.5) and Tallinn (6.7) in the East. 7 of the 26 capital cities had unemployment rates above, 2 were equal and 17 below the national in 2000. In second tier cities, rates in 2000 ranged from 1.7% (Innsbruck) to 29.7% (Cadiz). Overall unemployment rates fell over the period. In 2007, the range had narrowed from 1.7% (Stavanger) to 17.4% (Charleroi). A higher proportion (nearly 72%) of second tier than capital cities saw unemployment rates fall. Again, some of the second tier cities in the former socialist countries also experienced significant falls. See figures 44 & 45.

Figure 44: Unemployment rates 2007, ordered by national



Source: DG-Regio; Belgian, Irish and Scottish data are for 2006

Figure 45: Unemployment rates, percentage point change, ordered by national, 2000-7



Source: DG-Regio; Belgian, Irish and Scottish data are for 2000-6; German and Slovenian data are for 2001-7

6. PERFORMANCE ON KEY DRIVERS OF COMPETITIVENESS

6.1 We explored some of the drivers of competiveness which contributed to the economic performance described above, examining performance on innovation, skills, leading employment sectors and connectivity. We correlated the four datasets with city performance measured in terms of GDP per capita or per person. We found degrees of statistical significance varying from moderate to high.

Innovation

6.2 Figures 46 and 47 present EPO patent applications and GDP per capita data for, capital and second tier cities and in our broad geographical groupings. The regression lines show a moderate to high correlation. A number of second tier cities are performing as well as or better than capitals. The seven cities with the highest numbers of patent applications are all second tier cities – Eindhoven in the Netherlands, Stuttgart, Munich, Mannheim and Nuremberg in Germany, Tampere in Finland and Grenoble in France. The top 30 listing of patent applications by cities in 2006-2007 included only four capitals - Helsinki, Copenhagen, Stockholm and Paris. There is a marked bias in performance on this indicator of innovation towards the Central and Northern regions, where nearly two thirds of second tier cities had higher rates of patent applications than their respective national capitals. In the South, both of the second tier cities in Greece and Portugal performed slightly better than their capitals, as did over two fifths of the second tier cities in the regionalised states of Italy and Spain (8 out of 19). In the West, performance also varied, with second tier cities performing relatively well in Belgium and the Netherlands. Innovation appears to be an area in which the decentralisation of policy and spatial configuration can be highly signficant. The dominance of the list of innovative cities by cities in Federal and Nordic systems at least suggests a relationship between decentralised systems and innovation. The relatively weak performance of second tier cities in Eastern Europe stands out. With the exception of Poland, none of the second tier cities outperformed their respective capitals in patent applications. And in Poland, only 3 of the 11 second tier cities did so. Of the bottom 30 cities in terms of innovation performance, 27 were in the former socialist states of Eastern Europe. Innovation clearly remains a constraining factor in the development of the transition economies and their cities.

Figure 46: Patent applications and GDP per capita by capital and second tier cities

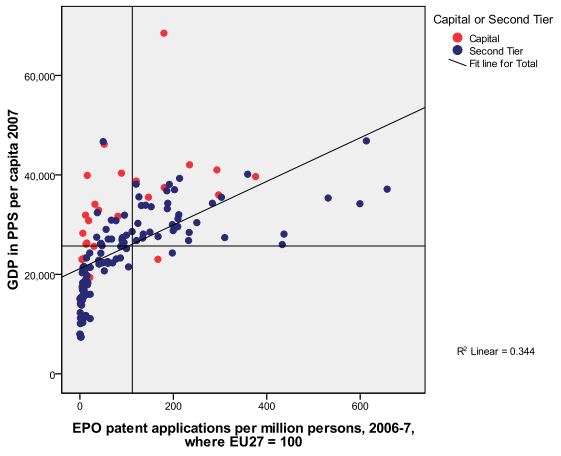
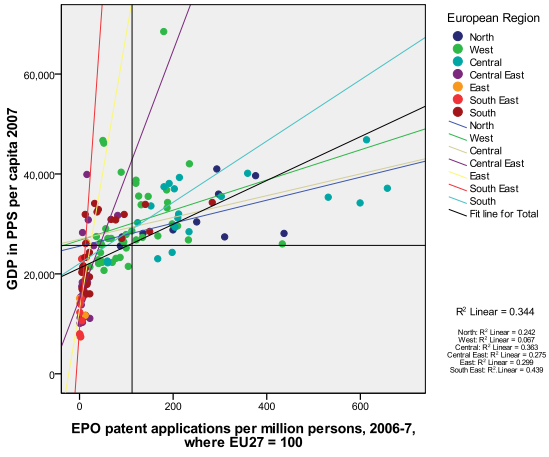


Figure 47: & by geographical groupings



* Eindhoven with a patent score of 1,793 – nearly 3 times higher than second place city Stuttgart – is omitted from the charts.

6.3 A number of second tier cities are performing as well as or better than capitals, see Box 1.

Box 1: Innovative city rankings

Top 30 'Innovative Cities' (2006-7) (in descending order)	Bottom 30 'Innovative Cities' (2006-7) (in descending order)
Eindhoven	Poznan
Stuttgart	Ostrava
Munich	Warsaw
Mannheim	Miskolc
Nuremberg	Cadiz
Tampere	Vilnius
Grenoble	Plzen
Helsinki	Varna
Frankfurt am Main	Szczecin
Malmö	Palermo
Graz	Malaga
Copenhagen	Gyor
Stockholm	Lódz
Bologna	Bucharest
Gothenburg	Timisoara
Paris	Bydgoszcz
Bielefeld	Košice
Rennes	Lublin
Linz	Plovdiv
Cologne-Bonn	Gdansk
Hannover	Katowice-Zory
Toulouse	Cluj-Napoca
Dusseldorf-Ruhrgebiet	Daugavpils
Hamburg	Kielce
Turku	Kaunas
Heerlen	Wloclawek
Dresden	Iasi
Salzburg	Constanta
Lyon	Klaipeda
Gent	Craiova

6.6 There is a significant variation in the performance of second tier cities on this measure of innovation across Europe, as Table 9 indicates.

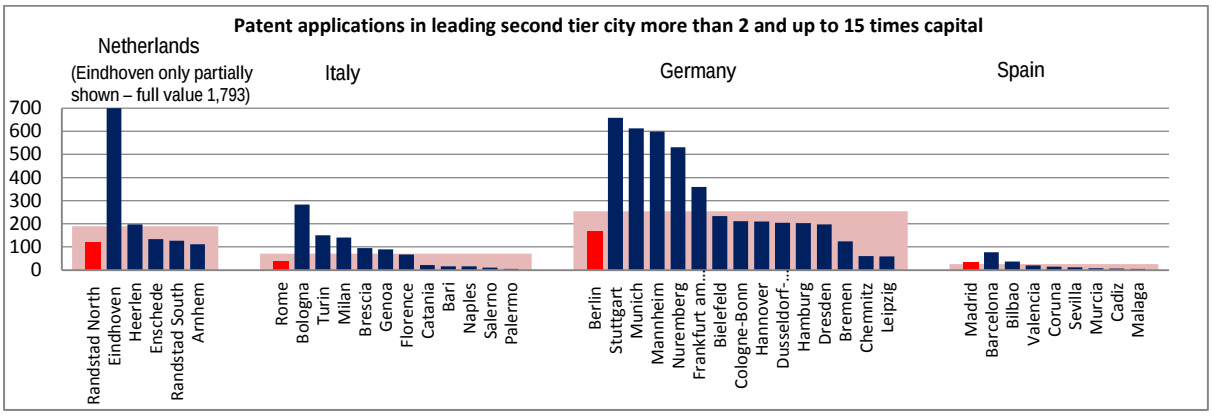
Table 9: Innovative performance of second tier cities –patent applications

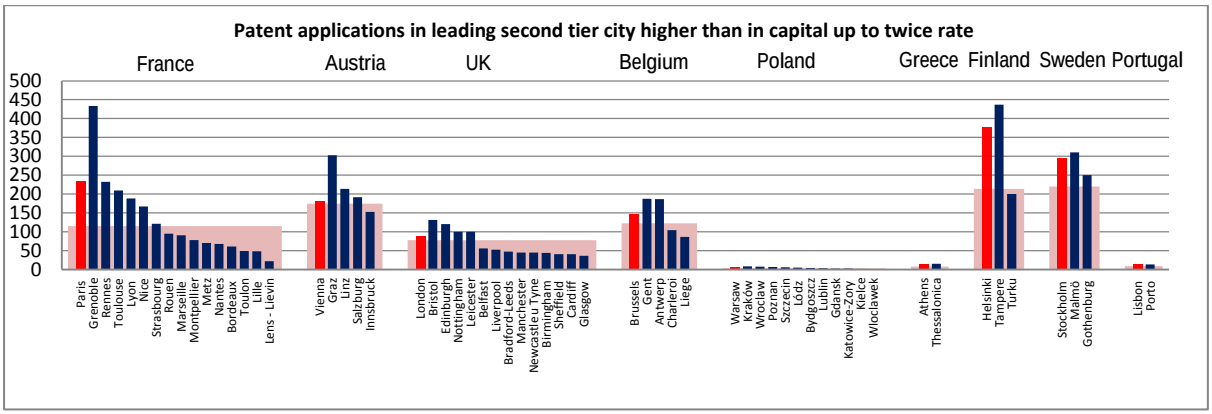
Region/ state system/ country	Number of second tier cities	Number of second tier cities with higher rates of patent applications than the capital
Central: Federal states		
Austria	4	3
Germany	14	11
Switzerland	n/a	n/a
Northern (Nordic) Systems		
Denmark	3	0
Finland	2	1
Iceland	n/a	n/a
Norway	n/a	n/a
Sweden	2	1
West: Federal Belgium and other unitary states		
Belgium	4	2
France	15	1
Ireland	1	0
Luxembourg	-	-
Netherlands	5	2
United Kingdom	13	4
South: Regionalised states		
Italy	11	6
Spain	8	2
South: Unitary states		
Cyprus	-	-
Greece	1	1
Malta	-	-
Portugal	1	1

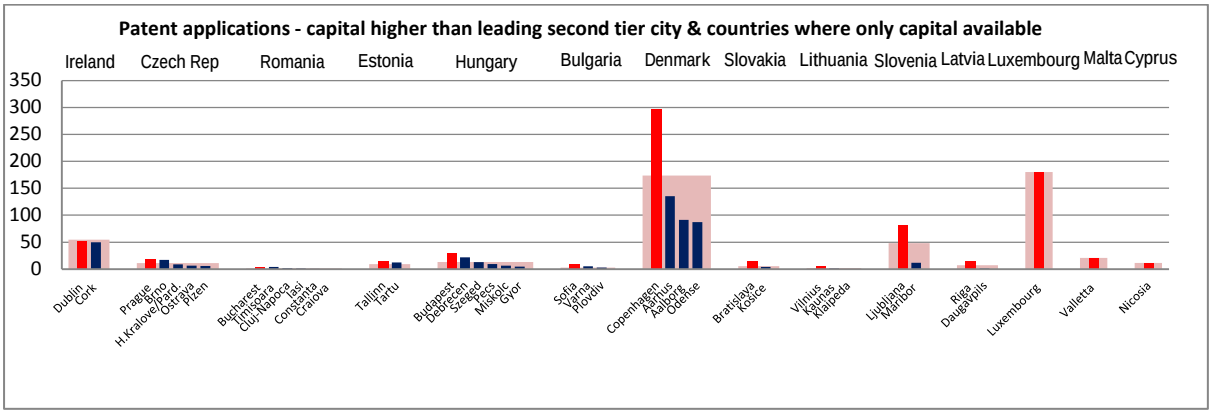
East: Former socialist states)		
Estonia	1	0
Latvia	1	0
Lithuania	2	0
Central East: Former socialist states)		
Czech Republic	4	0
Hungary	5	0
Poland	11	2
Slovakia	1	0
Slovenia	1	0
South East: Former socialist states)		
Bulgaria	2	0
Croatia	n/a	n/a
Romania	5	0
Total	**117**	**37**

6.7 Figures 48-50 show EPO Patent Applications per million inhabitants 2006-7, EU27=100. It shows performance on innovation by leading second tier cities individual country. Again the strength of cities in the north and west of Europe is underlined as well as the challenges faced in the east.

Figures 48-50: EPO Patent Applications per million, EU27=100, 2006-7







Sources: OECD REGPAT database, Eurostat, DG REGIO

Skills

6.8 Figures 51 and 52 compare the percentage of persons aged 25-64 educated to tertiary level with GDP per capita levels for our set of capital and second tier cities and by geographical groupings. There is a moderate degree of correlation. Capitals perform more strongly than second tier cities on high levels of education, although a number of second tier cities also perform well. These tend to be located in the North and West Regions but with a small number of outstanding performers in Central East and East. Of the 112 second tier cities, only seven outperformed their national capital cities. Four of these were in the Central federal states: one in Austria and three in Germany. Again, none of the second tier cities in the former socialist states of eastern Europe outperformed their national capitals.

Figure 51: High levels of education and GDP per capita by capital and second tier cities

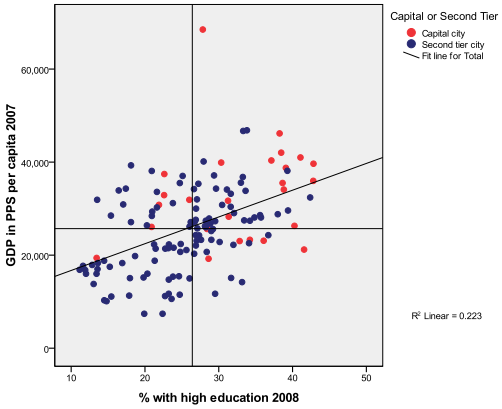
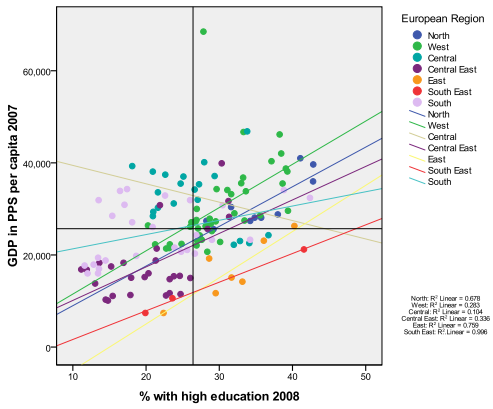


Figure 52: & by geographical grouping



6.10 Table 10 shows that second tier cities performed better when measured against national averages. 47 of the 112 second tier cities (42 percent) had higher rates of high-level education than their national averages. Significant in Eastern Europe is the strong performance of Poland, where 9 of its 11 second tier cities had high-level education rates above the national average, and also in Lithuania where 2 out of 2 were above the national.

Table 10: Second tier city performance on high level skills – educated to tertiary level

Region/state system/country	Number of second tier cities	Number of second tier cities with higher rates of 25-64 year olds educated to tertiary level applications than the capital	Number of second tier cities with higher rates of 25-64 year olds educated to tertiary level applications than the national average
Central: Federal states			
Austria	4	1	4
Germany	14	3	9
Switzerland	n/a	n/a	n/a
Northern (Nordic) Systems			
Denmark	3	0	1
Finland	2	0	1
Iceland	n/a	n/a	n/a
Norway	n/a	n/a	n/a
Sweden	2	0	1
West: Federal Belgium and other unitary states			
Belgium	4	0	1
France	15	1	6
Ireland	1	0	0
Luxembourg	-	-	-
Netherlands	5	0	2
United Kingdom	13	1	3
South: Regionalised states			
Italy	11	0	5
Spain	8	1	2
South: Unitary states			
Cyprus	-	-	-
Greece	1	0	1
Malta	-	-	-
Portugal	1	0	1
East: Former socialist states)			
Estonia	1	0	0
Latvia	1	0	0
Lithuania	2	0	2
Central East: Former socialist states)			
Czech Republic	4	0	1
Hungary	5	0	1
Poland	11	0	9
Slovakia	1	0	0
Slovenia	1	0	0
South East: Former socialist states)			
Bulgaria	2	0	1
Croatia	n/a	n/a	n/a
Romania	n/a	n/a	n/a
Total	**112**	**7**	**51**

6.12 Box 2 lists the bottom 20 performers on the high-level skills measure. This list contains eleven cities from Southern Europe – nine from Italy – plus nine Eastern European cities.

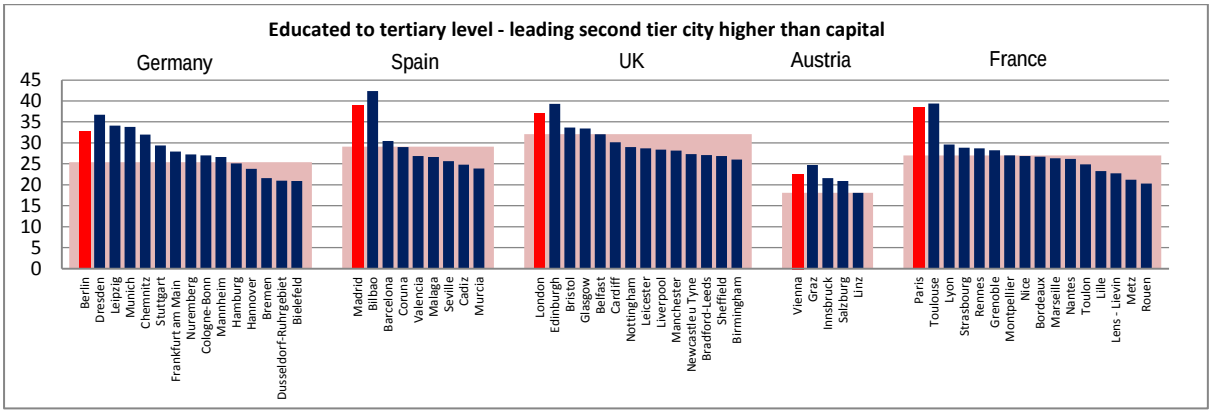
Box 2
Bottom 20 'Skilled cities'
(in descending order)
Florence
Brno
Milan
Debrecen
Turin
Gyor
Wloclawek
Miskolc
Porto
Plzen
Palermo
Brescia
Valletta
Catania
Košice
Bari
Naples
Ostrava
Salerno
Hradec Kralove/ Pardubice

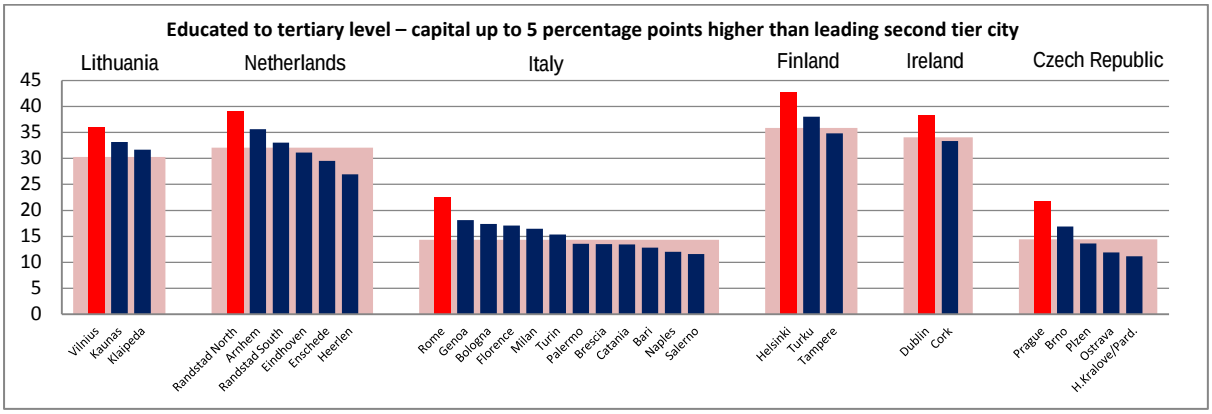
6.13 Box 3 lists the top 20 best performers on this measure. Twelve of these are capital cities.

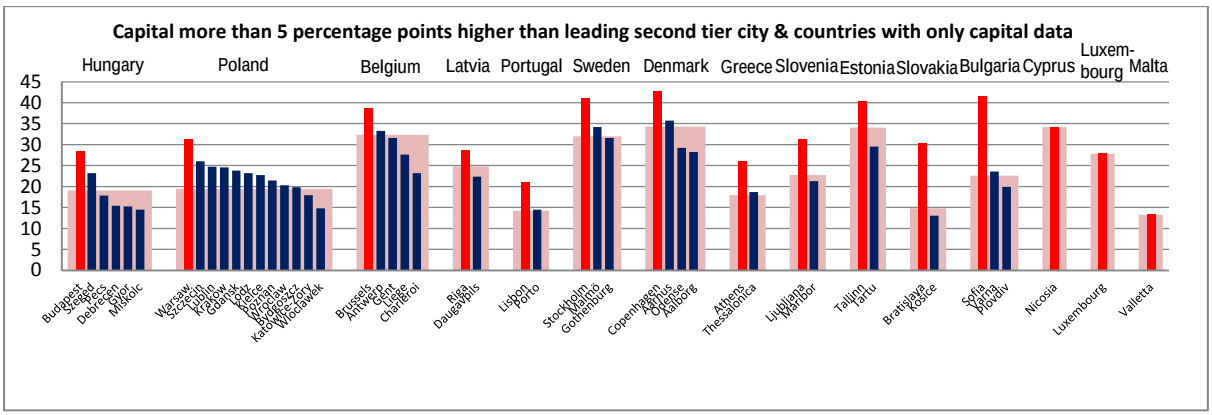
Box 3
Top 20 'Skilled cities'
(in descending order)
Helsinki
Copenhagen
Bilbao
Sofia
Stockholm
Tallinn
Toulouse
Edinburgh
Randstad North
Madrid
Brussels
Paris
Dublin
Turku
London
Dresden
Vilnius
Aarhus
Arnhem
Tampere

6.14 Figures 53-55 show proportions of persons educated to tertiary level.

Figures 53-55: Educated to Tertiary level, % of 25-64s (estimates) 2008







Source: DG-Regio

Diversity and leading sectors

6.15 We also found a strong correlation between the proportion of employment in 'financial intermediation; real estate, renting and business activities' and GDP per capita in capital and second tier cities. As with high educational levels, capital cities perform relatively well in this sector of employment. 11 of the top 20 cities are capital cities. Cities in the West and Central regions have relatively high shares of employment in the sectors while the opposite holds for those in the South East, East and Central East. Only 8 second tier cities have higher shares of employment in the sector than their national capitals and 7 of these are in Germany. In relation to national averages, second tier cities performed relatively better. Half had shares higher than national average. Again the federal countries stand out – all Austrian, 12 of 14 German and 2 of 4 Belgian cities have higher shares than national. In the South, Italy stands out with 7 out of 11, and also Spain with 5 out of 8. Second tier cities in Poland in Central East Europe are also notable with 8 of 11 second tier cities having higher than national shares of employment in the sector. In France 9 of 15 are above national.

6.16 Figures 56 and 57 compare the proportion of employment in 'financial intermediation; real estate, renting and business activities' for capital and second tier cities. The high correlation is clearly apparent.

Figure 56: Employment in 'financial intermediation; real estate, renting & business activities' and GDP per capita by capital and second tier cities

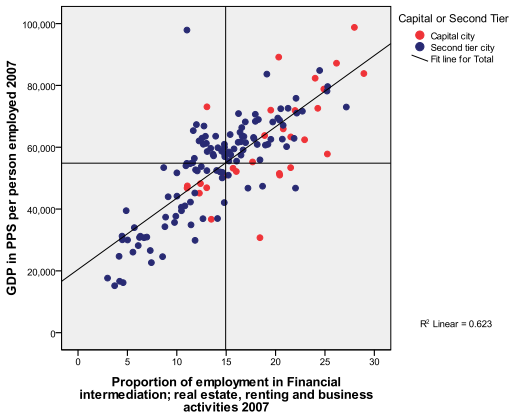
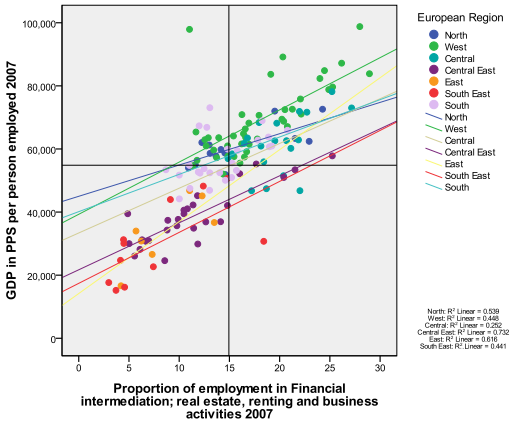


Figure 57: & by geographical groupings



6.17 Box 4 also shows that, as with high educational levels, capital cities tend to perform relatively well in this sector of employment. 11 of the top 20 cities are capital cities.

Box 4: Top 20 'Leading sector cities' (2008)
(in descending order)
Randstad North
Luxembourg
Frankfurt am Main
Paris
Antwerp
Bratislava
Munich
Brussels
Randstad South
Stockholm
London
Copenhagen
Hamburg
Edinburgh
Eindhoven
Leipzig
Vienna
Cologne-Bonn
Oslo
Ljubljana

6.18 Table 11 compares second tier and capital cities by country.

Table 11: Rates of employment in 'financial intermediation; real estate, renting and business activities' and GDP per capita

Region/ state system/ country	Number of second tier cities	Number of second tier cities with higher rates of employment in financial intermediation; real estate, renting and business activities than the capital (2007)	Number of second tier cities with higher rates of employment in financial intermediation; real estate, renting and business activities than the national average (2007)
Central: Federal states			
Austria	4	0	4
Germany	14	7	12
Switzerland	n/a	n/a	n/a
Northern (Nordic) Systems			
Denmark	3	0	0
Finland	2	0	1
Iceland	n/a	n/a	n/a
Norway	2	0	0
Sweden	2	0	0
West: Federal Belgium and other unitary states			
Belgium	4	1	2
France	15	0	9
Ireland	1	0	0
Luxembourg	-	-	-
Netherlands	5	0	2
United Kingdom	13	0	2
South: Regionalised states			
Italy	11	0	7
Spain	8	0	5
South: Unitary states			
Cyprus	-	-	-
Greece	1	0	1
Malta	-	-	-
Portugal	1	n/a	n/a
East: Former socialist states			
Estonia	1	0	0
Latvia	1	0	0
Lithuania	2	0	0
Central East: Former socialist states			
Czech Republic	4	0	1
Hungary	5	0	0
Poland	11	0	8
Slovakia	1	0	0
Slovenia	1	0	1
South East: Former socialist states			
Bulgaria	2	0	1
Croatia	1	0	0
Romania	5	0	3
Total	**120**	**8**	**59**

6.19 As Box 5 shows, all but one of the bottom 20 performers in this employment category are located in the former socialist states of Eastern Europe, the exception being Cadiz.

Box 5
Bottom 20 'Leading sector cities'
(2008)
(in descending order)
Cadiz
Lublin
Varna
Tartu
Miskolc
Debrecen
Pecs
Kaunas
Szeged
Klaipeda
Kielce
Wloclawek
Gyor
Plovdiv
Timisoara
Cluj-Napoca
Daugavpils
Constanta
Iasi
Craiova

Connectivity – potential accessibility by air

6.20 We focussed on potential accessibility by air as a key element of connectivity. Figures 58 & 59 compare potential accessibility by air with GDP per capita levels. The two variables are clearly highly correlated. Not surprisingly, capital cities perform strongly but so too do a significant number of second tier cities with the leading 20 cities split pretty evenly between them. The relatively high accessibility of Central and West European cities shows by contrast their eastern European counterparts.

Figure 58: Potential accessibility by air & GDP per capita – capital & second tier cities

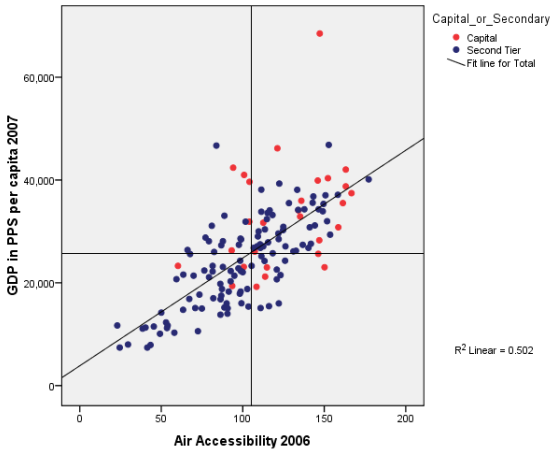
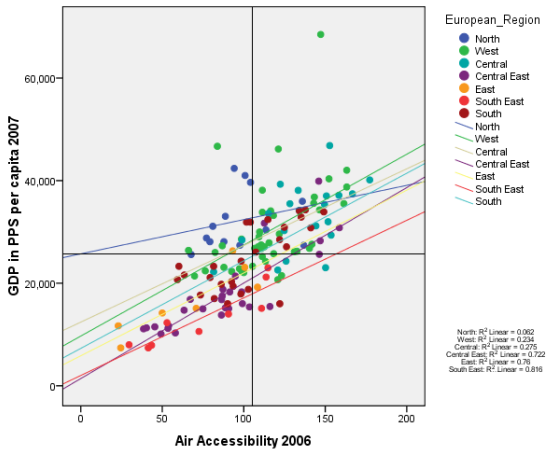


Figure 59: & by geographical groupings



Source: EIUA re-working of Spiekermann & Wegener Urban & Regional Research data

6.21 As Box 6 shows the top 20 cities in terms of potential accessibility by air are split pretty evenly between capitals (9) and second tier cities (11). The list also underscores the relatively high accessibility of Central and West European cities, a feature further illustrated by Table 12, which compares second tier cities with their capitals and the EU27 average.

Box 6
Top 20 'connected cities by air'
(2006)
(in descending order)

Frankfurt am Main
Vienna
Paris
Randstad North
Brussels
Zurich
Geneva
Prague
Stuttgart
Dusseldorf-Ruhrgebiet
Munich
London
Cologne-Bonn
Hamburg
Berlin
Nuremberg
Milan
Basel
Luxembourg
Warsaw

6.22 While only 14 of the 124 second tier cities for which we have comparative data have potential air accessibility greater than their national capitals, half of them have levels of accessibility higher than their national average and half are higher than the EU average. These accessible second tier cities are mostly clustered in Central and West Europe.

6.23 The table underlines the accessibility and transport infrastructure challenges facing Eastern European states. Only three of the second tier cities in this part of Europe have potential accessibility levels by air above the EU average.

Table 12: Second tier cities and connectivity – potential accessibility by air

Region/ state system/ country	Number of second tier cities	Number of second tier cities with potential air accessibility above the capital (2006)	Number of second tier cities with potential air accessibility above national (2006)	Number of second tier cities with potential air accessibility above the EU27 average (2006)
Central: Federal states				
Austria	4	0	3	4
Germany	14	6	11	12
Switzerland	4	3	3	4
Northern (Nordic) Systems				
Denmark	3	0	0	0
Finland	2	0	2	0
Iceland	-	-	-	-
Norway	2	0	2	0
Sweden	2	2	2	2
West: Federal Belgium and other unitary states				
Belgium	4	0	1	4
France	15	0	8	8
Ireland	1	0	0	0

Luxembourg	-	-	-	-
Netherlands	5	0	1	3
United Kingdom	13	0	4	12
South: Regionalised states				
Italy	11	2	6	7
Spain	8	1	4	2
South: Unitary states				
Cyprus	-	-	-	-
Greece	1	0	1	0
Malta	-	-	-	-
Portugal	1	0	1	1
East: Former socialist states)				
Estonia	1	0	0	0
Latvia	1	0	0	0
Lithuania	2	0	1	0
Central East: Former socialist states)				
Czech Republic	4	0	0	0
Hungary	5	0	0	0
Poland	11	0	6	2
Slovakia	1	0	1	0
Slovenia	1	0	0	0
South East: Former socialist states)				
Bulgaria	2	0	1	0
Croatia	1	n/a	n/a	n/a
Romania	5	0	2	1
Total	**124**	**14**	**60**	**62**

6.24 This point is underscored by Box 7, which shows that most of the cities in the bottom 20 of potential air accessibility are in Eastern Europe; the exceptions being Rouen in France, Murcia and Cadiz in Spain, Nicosia in Cyprus and Reykjavik in Iceland.

Box 7.
Bottom 20 'connected cities by air' (2006)
(in descending order)

Rouen
Murcia
Lódz
Nicosia
Cadiz
Miskolc
Szeged
Kielce
Constanta
Kaunas
Wloclawek
Lublin
Iasi
Reykjavik
Plovdiv
Pecs
Debrecen
Craiova
Daugavpils
Tartu

7. SECOND TIER CITIES IN THE RECESSION

7.1 Mainly our data analysis stops in 2007. Essentially we have been able to show in detail the performance of European cities in the boom period in the decade until then. But that period has ended. 2007 marked a watershed in the global economy with the onset of the economic crisis in 2008 that was triggered by a financial crisis, initially in the US but quickly of global reach. The crisis is still a moving target. The first phase evolved from the US financial crash into a global recession. The second phase involved the collapse of sensitive export and consumption led sectors, the bursting of a property bubble and the collapse of the construction sector. The third, current phase involves a fiscal crisis affecting government revenues resulting in cuts to public expenditure. Sovereign debt crises have emerged across nation states. The scale of what some observers call the *Great Recession* is already on a par with its *Great Depression* predecessor of the 1930s. Given the more intense global economic interconnectedness now than then, it has potentially more pervasive and long-lasting consequences. It currently shows little sign of abating as various EU and IMF forecasts testify. European cities are now faced with very different and more difficult economic conditions from those of the pre-recession years.

The territorial impact of the economic crisis: what implications for second tier cities?

7.2 The crisis is having a very varied territorial impact between and within countries. This geography can be seen in patterns of change in output, employment and unemployment and in government fiscal balances and debt levels. For example, Map 9 shows national GDP growth rates over the crisis period, 2007-2010 for thirty-three European countries. There are some striking differences. The EU27 as a whole saw GDP fall by just over 2%. Of the thirty-three countries, two thirds saw GDP fall, in a number of cases quite dramatically. Standing out clearly are the large declines in the Baltic States - Lithuania 11%, Estonia 16%, Latvia 21% - and Ireland 10%. The economic growth that these countries and their cities achieved in the years leading up to the crisis is very clearly under threat. Figure 60 shows clearly how many countries which did well during the boom years have declined very quickly during the recession.

Map 9: Total GDP change (%) by country, 2007-2010

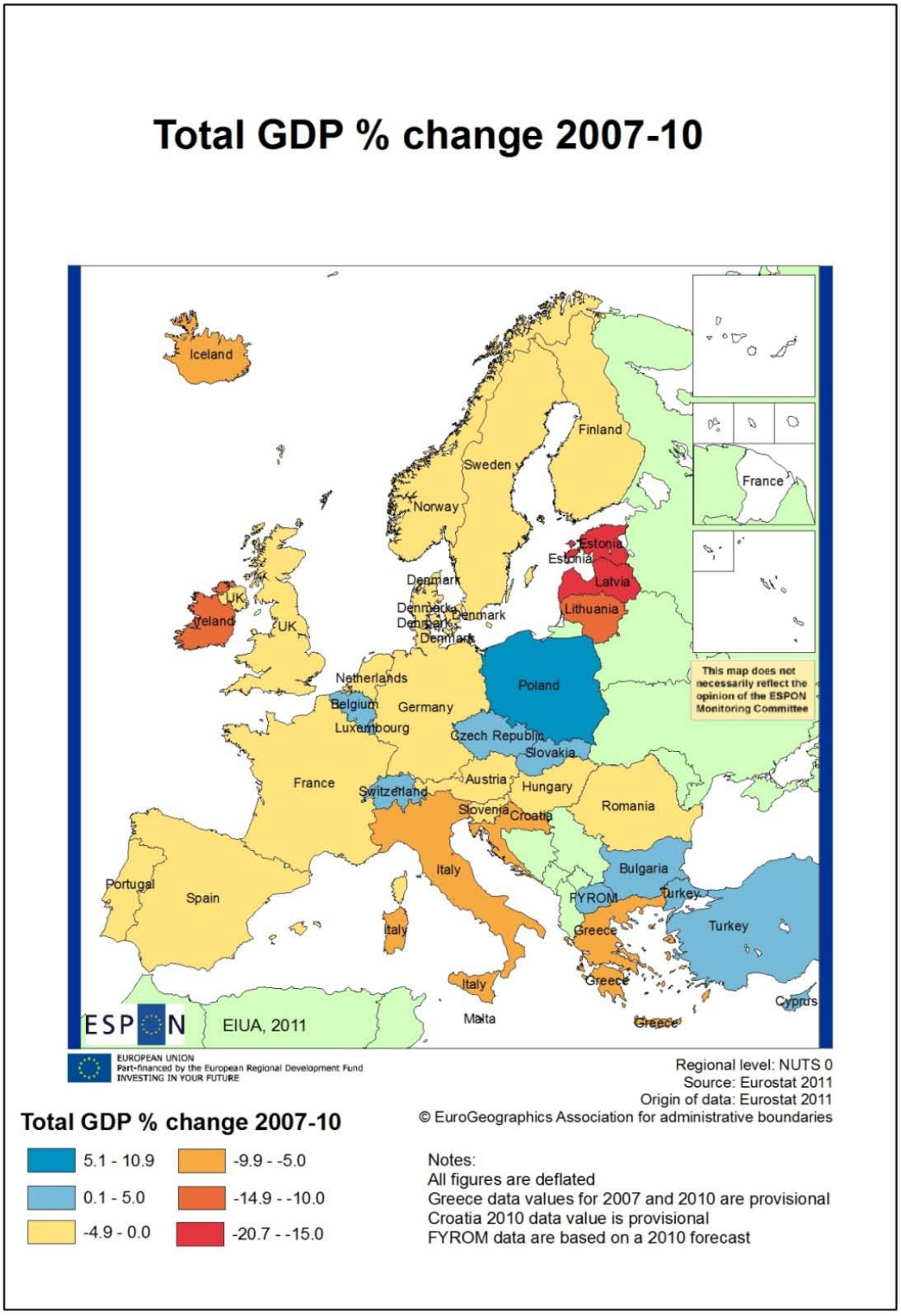
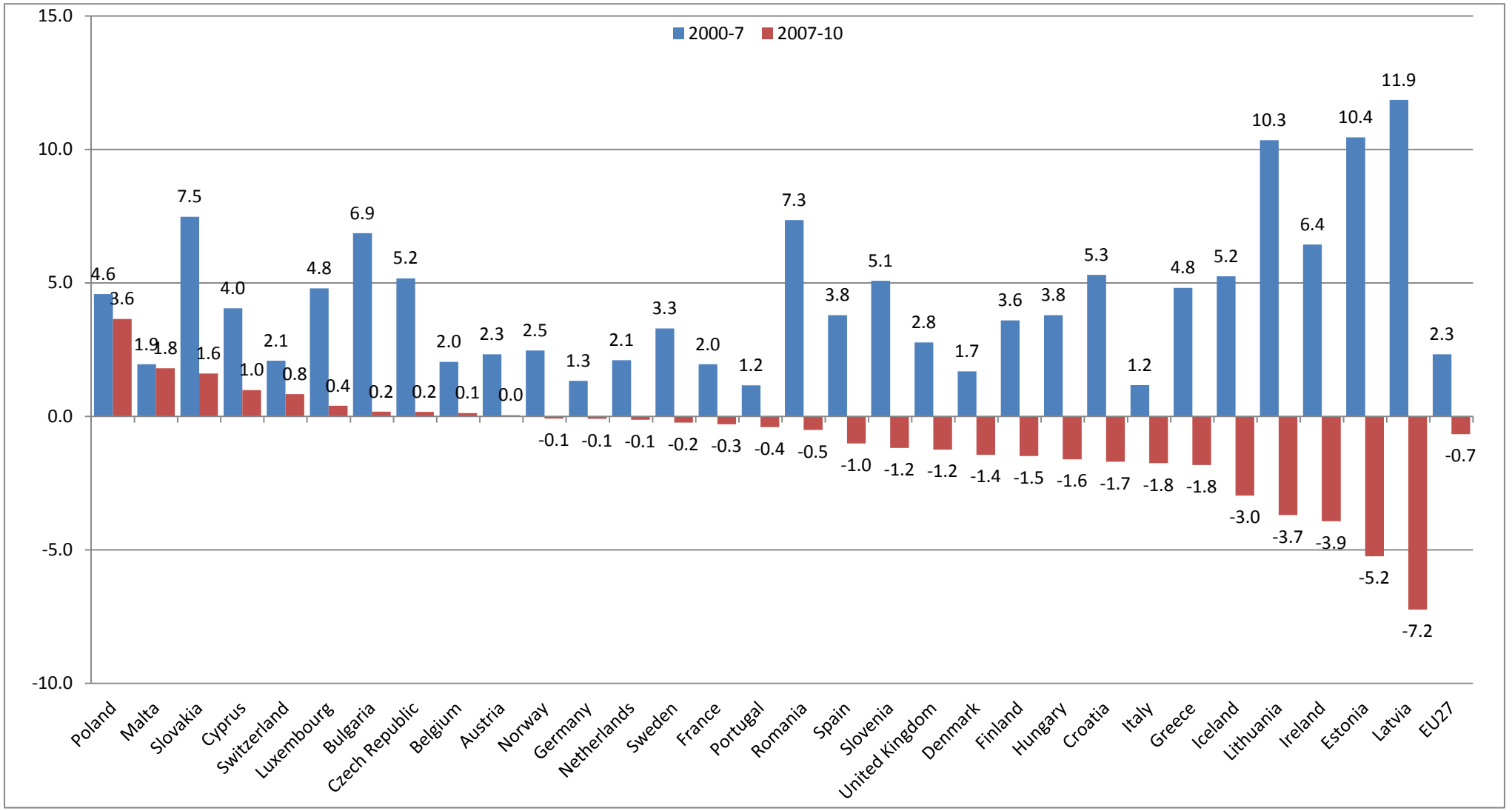


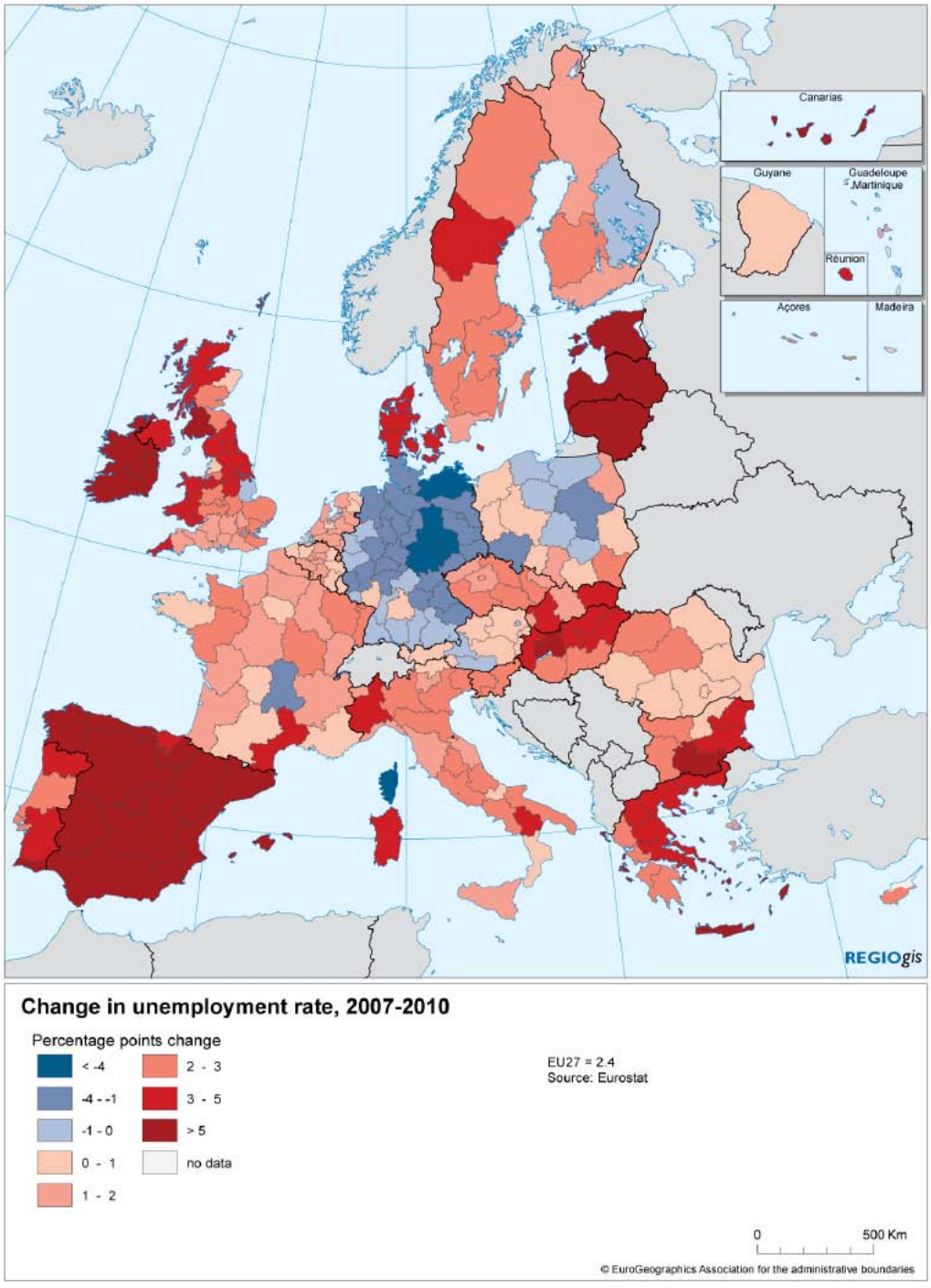
Figure 60: Total GDP (deflated) average annual % change 2000-7 & 2007-10



Source: Eurostat; 2000-7 Greece data are provisional; 2007-10 data for Czech Republic & France are forecast, and for Greece, Portugal and Croatia are provisional

7.3 Map 10 shows regional disparities in unemployment rates. There is significant variation. In 2010, 1 in 3 regions had unemployment rates above 10%. In comparison with 2007, the unemployment rate was greater in 4 out of 5 European regions. Between 2007 and 2010 unemployment rates increased in 215 out of 271 NUTS 2 regions. Only 49 regions had a reduction in unemployment rates, with the biggest falls in Germany and Corsica. Some regions in France, Poland, Austria and the United Kingdom also experienced reductions. The regions particularly severely affected are in Spain, Ireland, the Baltic States and Greece – the same countries with significant reductions in GDP growth.

Map 10: Change (%) unemployment rates NUTS2 regions EU27, 2007-2010



Source: Bubbico and Dijkstra, 2011

What impact at urban level?

7.4 Unemployment has increased dramatically. For example, only 4 capital cities had unemployment above 8% in 2007, in 2009 11 had. Of the second tier cities 26 were over 10% in 2007, but by 2009 it was 47. But some non capital metropolitan regions appear to be holding up relatively well. 36% had lower rates of unemployment than their capitals in 2009 and 48% had lower than national rates of unemployment. See Map 11. Figure 61 shows the position in different state systems. Figure 62 shows change 2007-9.

Map 11: Unemployment rates 2009 in European metro-regions

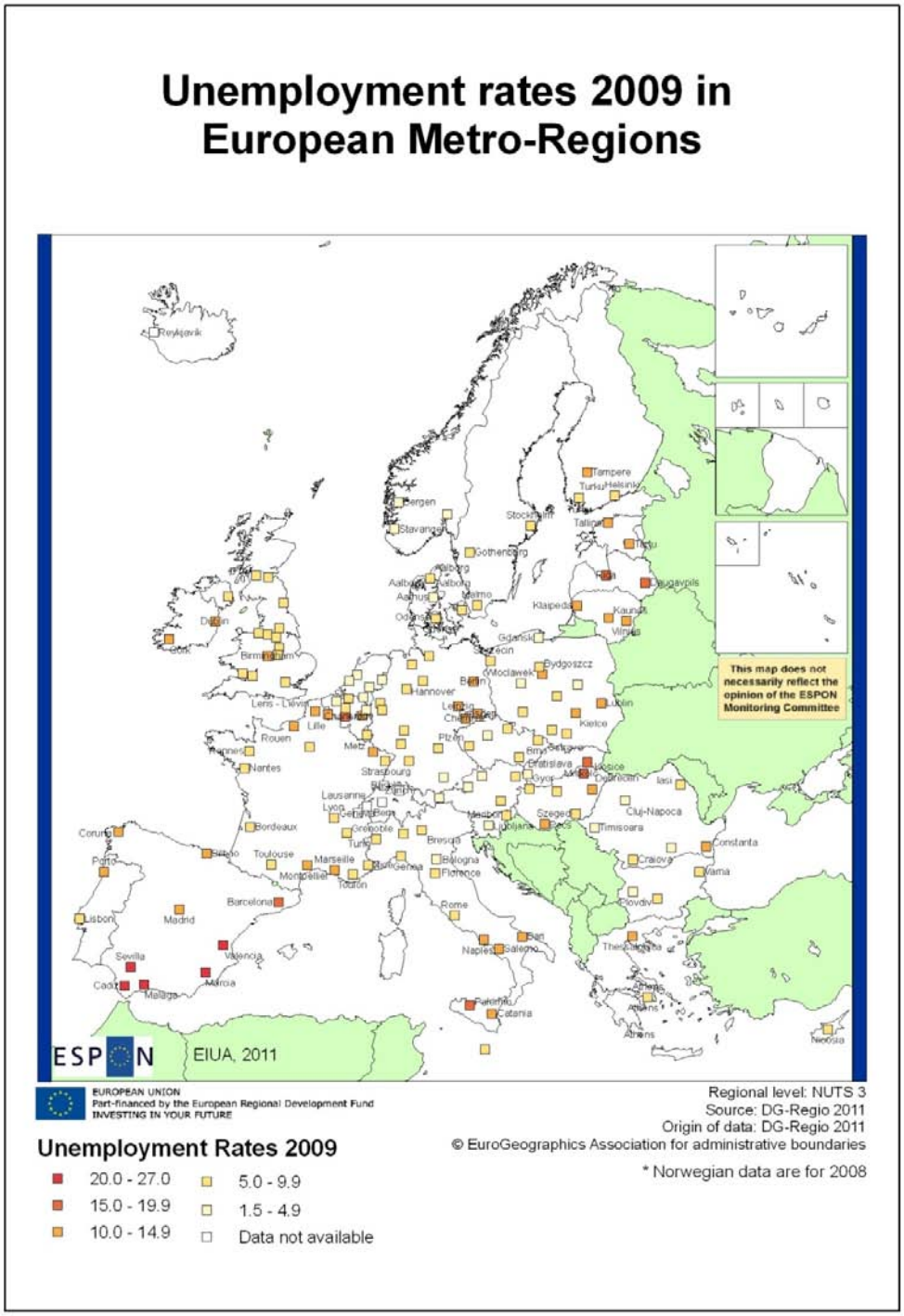
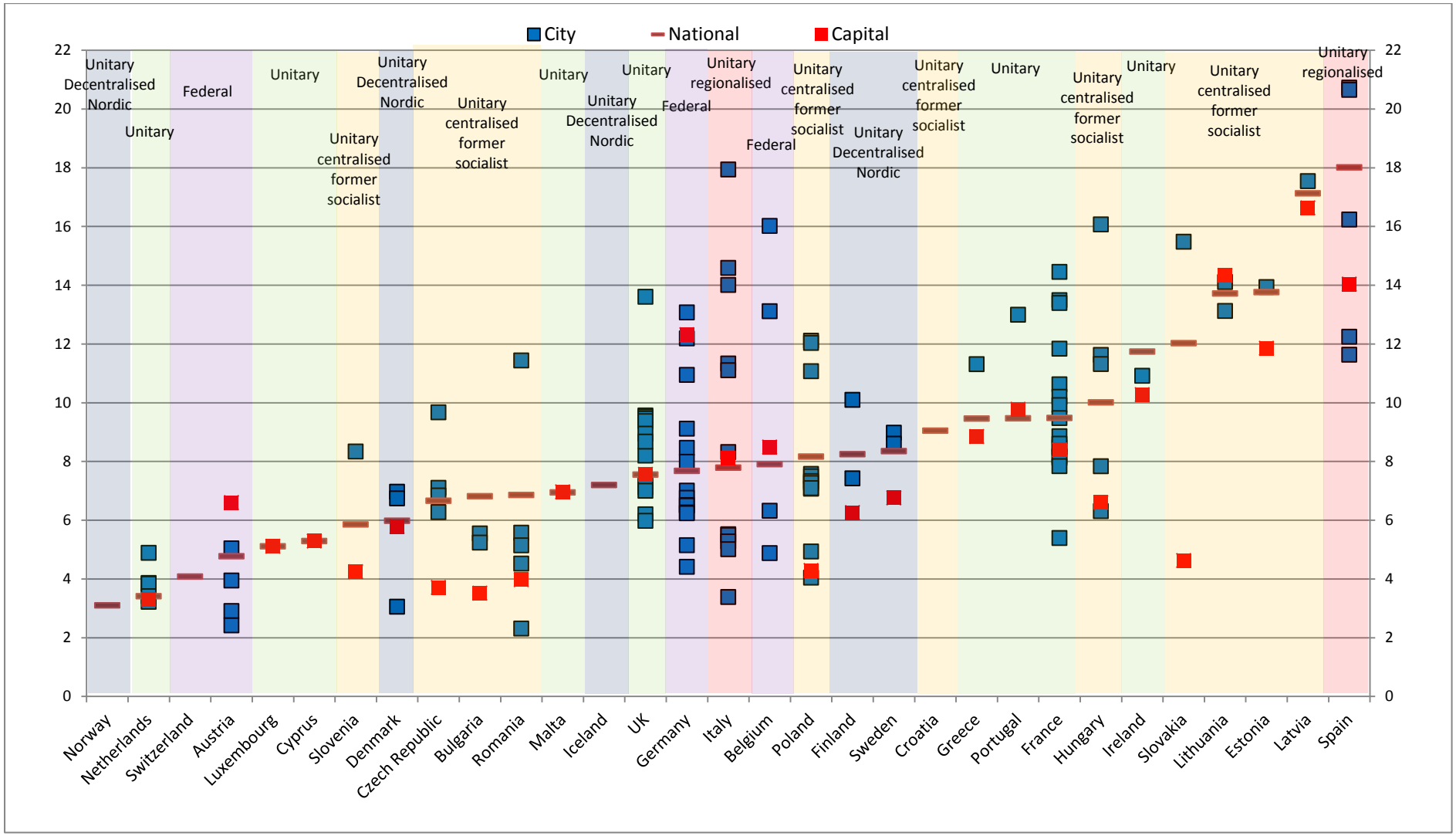
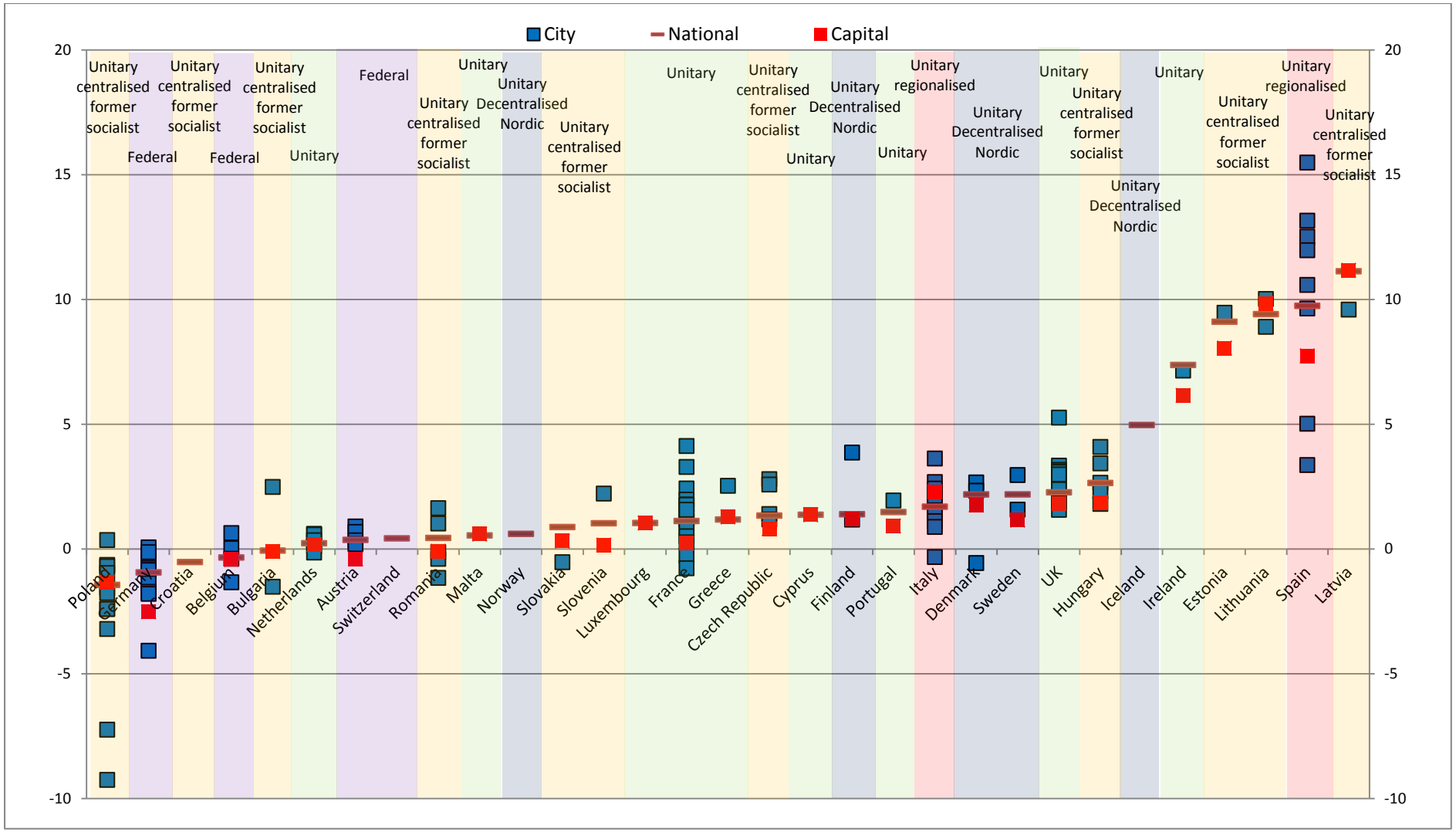


Figure 61: Unemployment rate, 2009, ordered by national average



Source: DG-Regio

Figure 62 : Unemployment rate, percentage point change 2007-2009, ordered by change in national average



Source: DG-Regio; Belgian & Irish data, & Glasgow & Edinburgh data in UK are for 2006-9

A flight from risk and severe impacts upon marginal places

7.5 There has been a flight of both public and private investment from risky to more desirable locations. As a result the crisis hit marginal places and people sooner, hurt them harder and is liable to last longer. Valuable evidence about the impact of the crisis up until 2009 has also been provided by surveys of European cities by URBACT (2010a&b). Over 80% of cities reported severe impacts. Unemployment has affected many groups – both skilled and unskilled. But it has hit particular groups harder. The most affected have been: skilled male workers in financial services and car manufacturing; unskilled men, young people and migrants in construction; and unskilled women and young people in tourism and retailing. Young people have been most severely affected. Labour market problems have resulted in increased poverty, informal economy working, indebtedness, homelessness, health problems, crime and threats to social cohesion and strains upon local public services. The crisis appears to be worsening problems that were latent in many cities before the crisis.

8. KEY MESSAGES

Capital cities dominate but second tier cities make a significant contribution

8.1 The essential message of this report is that capital cities continue to dominate the European urban systems in terms of population, employment and output – with the exceptions of Germany and Switzerland. But second tier cities continue to make a significant contribution to their national economies and the European economy. The gap between capital and second tier cities is large and in the former socialist states of Eastern Europe, growing. The total GDP of capital cities in 2007 was greater than their leading second tier cities in all but two countries, Germany and Italy. In 19 countries the total GDP of the capital was more than twice that of the largest non-capital city and was as much as eight or nine times greater in 4 states UK, France, Hungary and Latvia. The capitals, which accounted for 16% of total population in 2000, accounted for 31% of population growth 2000-7.

8.2 Despite this structural dominance change measures show a rather more nuanced story. Despite capitals' dominance, second tier cities still made a positive contribution to growth and, in a significant number of cases, demonstrated their potential for increasing this contribution. In 2000 second tier cities accounted for 31% of population, and between 2000 and 2007, accounted for 34% of population growth. By 2007, three quarters of the second tier cities had positive net migration rates and one third had rates above those of their capitals. Over the same period, they accounted for 29% of total GDP growth. And the top 36 second tiers provided one third of the total GDP growth that capital and second tier cities together generated.

Signs of improvement and second tier cities breaking path dependency

8.3 In 16 states, one or more second tier cities recorded higher annual growth in total GDP between 2000 and 2007 than their capitals especially in Germany, France, Norway, and Spain. But it also happened in two former socialist states. And states across the Eastern parts of Europe experienced some of the fastest growth rates, as their economies integrated into the European economy, with second tier as well as capitals contributing. While this growth is under threat from the current recession it forcefully demonstrates that second tier cities can improve their performance and break out of path dependency. This point is also illustrated by the relatively high productivity growth rates in some German second tier cities that were formerly part of the GDR - Dresden and Leipzig. Their performance clearly reflects the integration of these cities into the strong German economy and Federal system and contrasts with other former socialist states where second tier cities have achieved productivity levels 20% less than their capitals. Federal investment policy in Germany has clearly been significant.

Decentralisation matters

8.4 We analysed national governance arrangements to determine the impact of decentralisation upon cities' performance. On the basis of quantitative data alone, it is not possible to demonstrate direct causal links between performance and national governance systems. This needs the more qualitative analysis that we provide in section 3. However, the quantitative data provide some significant evidence that levels of decentralisation do matter. Between 2000 and 2007 many second tier cities grew faster than their capitals in terms of GDP per capita growth. But more grew faster than their capital in the federal and regionalised states than in the highly centralised states of former socialist states of eastern Europe. For example, in the Federal states, all German and Austrian and half of Belgium's second tier cities outperformed their capitals. In the regionalised states, all Spanish and a third of Italian second tier cities grew faster than their capitals.

In the Nordic states, all grew faster than their capital. In the unitary centralised states of Hungary, Poland, Slovakia, Slovenia, Estonia, Lithuania and Bulgaria all second tier cities and all but one in the Czech Republic had lower growth rates than their capital cities. Only in Romania, Latvia and Croatia did some second tier cities outperform their capital.

Germany – a case in point

8.5 Germany provides important lessons on the economic role of second tier cities. It supports our wider argument that politics and policy matter in urban development. Alongside the national capital in Federal Germany is a group of regional capitals with extensive decentralised powers and responsibilities. Economic activity – private and public - is more evenly distributed across a range of cities that form a powerful multi-cylinder economic engine. Over the period 2000 to 2007 population increased faster in 6 German second tier cities than in Berlin. 9 second tier cities outperformed it in employment growth. All 14 second tier cities had employment rates above Berlin. All 14 second tier cities also had productivity growth rates above Berlin. At a European level, 5 of the top 10 second tiers in terms of GDP growth between 2000 and 2007 were German. 5 of the top 10 cities in terms of our measure of performance in innovation were German. And German second tiers have been relatively resilient to the crisis, with all but one experiencing a drop in unemployment between 2007 and 2009.

Drivers of competitiveness

8.6 The data also point to links with some of the drivers of competitiveness. For example, in the Federal and Nordic states, innovation is highly related to strong performance of second tiers cities, suggesting a relationship between decentralised systems and this driver. This contrasts markedly with the highly centralised, unitary states of Eastern Europe, where 27 of the 30 worst performing second tier cities in terms of innovation are found. City performance and skill levels are also relatively highly correlated. Capital cities again tend to dominate. Only 7 of the 112 second tier cities outperformed their national capital cities on this measure. But again, four of these were in the Central federal states: one in Austria and three in Germany. In this case, Poland and Lithuania are notable exceptions to the general eastern European pattern. While their second tier cities did not have high level education rates above the capitals, many had rates above the national average. In Poland's case, high level skills are more evenly spread across its urban system.

8.7 City performance and employment in financial intermediation, real estate, renting and business activities was also relatively highly correlated. As with high educational levels, capital cities performed relatively well. Only 8 second tier cities had higher shares of employment in this sector than their national capitals. 7 were in Germany, again reflecting its deconcentrated industrial structure. Second tier cities performed relatively well with half having shares higher than national average. The challenges facing the new member states from Eastern Europe are again underlined by the fact that 19 of the bottom 20 performers were located there. City performance and accessibility were also relatively highly correlated. Central and West European cities were relatively highly connected. Reflecting historical political and policy priorities in infrastructure development, cities in the unitary states of eastern Europe were weakly connected.

The crisis threatens to undermine achievements of second tier cities– despite signs of resilience

8.8 The crisis has had a varied and changing territorial impact with both capitals and second tier cities. The South and East have been badly hit. The east in particular, has suffered a dramatic reversal of the growth rates and improvements in unemployment it experienced between 2000 and 2007. Unemployment across Europe has increased dramatically following the notable declines of the 2000-2007 growth period. Overall, however, some second tier cities appear to be holding up relatively well. 36% had lower rates of unemployment than their capitals in 2009 and 48% had lower than national rates of unemployment.

What economic contribution of second tier cities?

8.9 Our evidence has shown that all second tier cities made a contribution - and some a significant one - to economic growth in Europe between 2000 and 2007, even if many were overshadowed by capital cities to different degrees in different parts of Europe. Productivity levels and employment rates in second tier cities show they are located on a spectrum of productive capacity and agglomeration economies, with some nearer their productive potential than others. But many have the potential to grow and the ability to benefit further from agglomeration economies.