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Resurgent European Cities?

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ABSTRACT

Cities have been recognised for several decades as the places within Europe typically facing the greatest economic and social problems. In contrast, a much more positive view of cities has emerged recently, identifying them as sources of economic dynamism and growth. The paper offers evidence from across Europe to assess whether the fortunes of cities have improved, both in relation to their past trajectories and relative to smaller urban and rural areas. The key indicator is population change. The main finding is that one in seven cities can be described as resurgent, but these are greatly outnumbered by cities that have experienced continuous growth and by cities that have suffered a recent downturn. Taking a long-term view, the absolute and relative position of cities generally appears to have deteriorated over the last few decades. But a short-term perspective suggests something of a recovery within the last five years. Growth and resurgence are more common in Western Europe and decline is more widespread in the East. The position of larger cities has also improved slightly relative to smaller cities.

KEY WORDS

City trajectories; Resurgence; Urban change; New conventional wisdom

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1. INTRODUCTION

For many years cities were predominantly viewed as the source of society's problems. They were understood as the places facing the greatest difficulties of unemployment, social exclusion and physical decay. This reflected the density and diversity of their populations, combined with large-scale industrial decline and deconcentration of jobs and business activity. These processes imposed severe strains on many urban communities and posed complex challenges for city authorities. Unsurprisingly, researchers and policy-makers tended to take a pessimistic view of the prospects for cities, with the discourse dominated by notions of urban crisis and decline (for example, Hall and Hay, 1980; van den Berg et al, 1982; Begg et al, 1986).

Some commentators went further in seeing cities as obsolete remnants of an industrial era associated with high transport costs and low labour mobility, when supply chains were more localised and people lived close to where they worked. In an information-rich post-industrial world of low communication costs cities seemed to lack a clear economic purpose and it was suggested that people did not want to live in them any more (Pascal, 1987; Garreau, 1991). If proximity to materials, suppliers, customers and workplaces was no longer important, the assumption was that people and firms were free to locate where costs and congestion were lower and environmental quality was higher.

A much more positive view has emerged within the policy and academic communities during the last decade to challenge the received wisdom. It identifies cities as sites of renewed economic dynamism and generators of national prosperity (OECD, 2001; ODPM, 2004; Buck et al, 2005; Cheshire, 2006; Harding et al, 2006). Cities are increasingly seen as sources of innovation and productivity growth in advanced economies dependent on high value business activities and high-level skills. The unique assets of cities are thought to include thick labour markets, specialised producer services, research-intensive universities and copious opportunities for ambitious firms to compete and collaborate through face-to-face contact.

In an era of rising personal mobility and smaller households, cities are also thought to contain the social infrastructure, amenities and career choices to help nations and

regions attract human talent (Florida, 2004; Glaeser et al, 2001; Storper and Manville, 2006). People with advanced skills and creative abilities are crucial to the generation and exploitation of knowledge. This is a key ingredient of contemporary competitive advantage, where the quality of products counts for much more than their cost. Major cities also have the physical and electronic infrastructure, cultural facilities and international links to attract high-order business and consumer services and affluent tourists. In short, cities - especially large, attractive and well-connected cities - are seen as essential contributors to national economic growth.

This view of cities has been readily endorsed at national and European policy levels to the point where it can be described as a new conventional wisdom. A strong emphasis on growth through innovation and productivity characterised the European Council's Lisbon Agenda aimed at transforming Europe into 'the most competitive and dynamic knowledge-based economy in the world'. There was no explicit spatial dimension originally, but the Agenda has since been linked directly to cities. For example, the longest section of a report called 'Cities and the Lisbon Agenda' was titled "Cities as engines of regional development" (European Commission, 2006, p.5). In another report paving the way for the Structural Funds 2007-2013, the Commission reiterated: "Cities and metropolitan areas are drivers of economic development ... creating growth, innovation and employment" (European Commission, 2005, p.2).

"The European Union will be most successful in pursuing its growth and jobs agenda, if all regions – especially those with the greatest potential for higher productivity and employment – are able to play their part. Cities are essential in this effort. They are the home of most jobs, businesses, and higher education institutions and are key actors in achieving social cohesion. Cities are the centres of change, based on innovation, entrepreneurship and business growth" (European Commission, 2005, p.2).

Academic commentators have been more cautious about heralding a new era for cities. A special issue of the journal *Urban Studies* was published in July 2006 devoted to the theme of 'Resurgent Cities'. Contributors found it hard to define the concept precisely, but nonetheless suggested that there were signs of improvement in

urban conditions, particularly in North America, although much more evidence was required before one could be sure.

The purpose of this paper is to offer original evidence from across Europe relating to arguments about the revival of cities. The main question posed is whether there has been a genuine improvement in the fortunes of cities, both in relation to past trends and relative to smaller cities, towns and rural areas. A preliminary attempt is also made to assess whether there are any obvious attributes associated with better or worse city performance, such as city size and regional location. The new conventional wisdom suggests that these features really matter.

The focus of concern is the entire built-up area or morphological unit of the city (otherwise known as the conurbation or metropolitan area), rather than the administrative area or urban core, since this is a more meaningful, functional entity. The main indicator is population change, partly because reliable economic data is unavailable on a consistent cross-national or time-series basis at the city level. It is also because population is linked with economic change, both as a cause and an effect, especially over the longer-term. As a broad generalisation, cities with expanding economic opportunities tend to be more attractive places to live, and cities with growing populations tend to have expanding economies.

The paper begins with a brief review of previous comparative research on European cities, followed by a fuller discussion of population as an indicator of urban change. It then assesses aggregate patterns of population change across 310 cities in 36 European countries between 1960 and 2005. Europe is defined as the physical continent to include countries in Western and Eastern Europe (see Appendix A). Subsequent sections consider the differences between cities and the final section draws conclusions.

2. PREVIOUS RESEARCH

There have been at least six comparative studies of European urban trends since the 1960s. Hall and Hay (1980) and van den Berg et al (1982) were very similar in approach and conclusions so we focus on the latter for present purposes. They

expounded a classic sequential model of urban growth and decline that was consistent with mainstream urban economics and geography, including access-space trade-off models of residential location and related accounts of industrial decentralisation (Cheshire, 1995; Begg et al, 1986; Fothergill et al, 1985). There were three main stages: ‘urbanisation’ (spatial concentration of activity) followed by ‘suburbanisation’ (decentralisation and decline in the core) and ultimately ‘desurbanisation’ (dispersal of activity to satellite towns and rural areas). We use the term ‘deconcentration’ in this paper rather than the clumsier desurbanisation. It was essentially a physical account of urban development driven by factors such as transport technology and environmental quality.

Van den Berg *et al* (1982) tested the model by analysing population change in 189 cities in 14 Western and Eastern European countries over the period 1950-1975. They found considerable evidence to support the basic evolution from urbanisation to suburbanisation and then deconcentration and decline. Different countries and cities varied in the timing of these phases of development, with Eastern and parts of Southern Europe lagging well behind the West. Major industrial cities in Britain and Belgium were the furthest advanced and had reached the stage of absolute decline. They concluded that urban decline was probably an inevitable process driven by relentless forces once cities reached a certain size and people achieved a certain level of income, partly because of their desire for homes with more space and gardens, enabled by higher car ownership and mobility.

This analysis was updated and extended by Cheshire and Hay’s (1989) work on urban trends in Western Europe. It also had a problem focus, but was more comprehensive in scope and had stronger economic underpinnings. Data on demographic and employment variables were analysed for 229 cities over the period 1971-1984, complemented by a wider range of social, economic and environmental variables for a smaller sample of 53 cities. Their analysis confirmed the main conclusions of the previous studies, namely that the urban system was maturing in a broadly similar way in different places. Centralisation was generally followed by decentralisation and ultimate decline of the city as activity migrated to places that had not yet industrialised.

Although decline was the dominant feature of cities in the most developed economies, Cheshire and Hay also raised the prospect of an urban revival. They saw possibilities arising from two sources, economic and demographic. First, the general shift in the industrial structure from manufacturing to services was important because services were thought to have a stronger urban orientation. In addition, they argued that certain demographic trends favoured city locations. Single adult households, couples with no children and families with two or more people in work were all increasing. Their demand for proximity to city centre employment and amenities was likely to be stronger than for the archetypal family of two parents and several children but only one breadwinner, who were bound to favour the suburbs.

Cheshire and Hay did not expect these trends to produce a large-scale return to cities. Rising incomes would continue to mean people demanding more space and lower density suburbs. In addition, the continuing shift in housing tenure from rental to owner occupation would favour decentralisation because new stock would tend to be built in and beyond the suburbs where land was readily available. However, the decentralisation of families with children might be offset by an inflow of younger, smaller and higher-paid households, especially if efforts were being made to convert older industrial and commercial property in central locations to residential uses.

Cheshire (1995) updated the earlier analysis using population data from the 1990-91 censuses across Europe. His main conclusion was that a more complex pattern of urban development was emerging with a wider range of experience across cities. In some cases there was clear evidence that the rate of decentralisation slowed down compared with the 1970s, indicating relative recentralisation. This was particularly the case in selected northern European cities, namely those that were medium-sized, with historic cores, old universities and a highly educated population. In other places decentralisation was continuing and the prospects of halting the process seemed slim, particularly in old industrial cities.

Champion (1995) analysed similar data and also concluded that the rate of deconcentration seemed to slow down during the 1980s. However, he struggled to generalise because of the wide differences between countries. This diversity prompted him to suggest that there was no single evolutionary trajectory for European cities. He

was also very cautious about identifying the broad direction of change and the balance between concentration and deconcentration tendencies.

Finally, a European Commission report (2006) based on a larger ‘Urban Audit’ study examined changes across an assortment of 258 cities of very different sizes in 27 countries between 1996 and 2001. The principal conclusion was that contemporary population trends are extremely diverse, covering the full spectrum between rapid growth and steep decline. Furthermore, “the disparities between cities are far greater than the differences between regions or countries” (European Commission, 2006, p.4). There was no attempt to categorise cities according to their different trajectories or to examine the factors lying behind their differences. There was also no assessment of whether the position of cities was improving or deteriorating, either individually or as a whole.

The analysis in the remainder of the paper seeks to go beyond this and to extend the more systematic research of the 1980s into the 1990s and early 2000s.

3. POPULATION AS AN INDICATOR OF URBAN CHANGE

Population is used here as the main indicator of city trajectories partly for practical reasons of data availability and for consistency with previous research.ⁱ Obtaining reliable economic data on urban patterns and performance across different countries is notoriously difficult (Nathan and Marshall, 2006). Basic demographic data is the least problematic of all measures, although it is still not trouble-free because city boundaries are not defined consistently. Appendix A describes the detailed procedures followed. Population can also be justified as an indicator of city trends for more principled reasons, although no claims are made about it being the full explanation for urban growth or decline. This section indicates why population can provide clues to what is happening more generally to cities.

First, population change has always been an important *consequence* of urban economic conditions, especially the availability of jobs (Salt and Clout, 1976; Green and Owen, 1995; Champion and Fisher, 2004; Storper and Manville, 2006).ⁱⁱ Migration is often a response to differences in economic opportunity or the quality of

life between cities and other places, even if the process of adjustment is slow and inefficient. Generally speaking, the bigger the differences between places, the greater the incentives for people to move, subject of course to various ‘frictions’. These include physical and cultural distance, financial and social costs, available information, legal restrictions on international migration and limitations on the availability of housing. The propensity of people to move is affected by their age, qualifications, employability and financial resources. Cultural factors also appear to be involved, since the level of inter-regional migration is generally higher in some countries (such as the US) than in others (such as the UK).

Second, population change is also an important *influence* on urban economic conditions (Glaeser, 2001, 2005; Florida, 2004; Krugman, 2005). There is evidence, for instance, that sheer population size and dense local labour markets increase agglomeration economies and productivity (Rice et al, 2006; Scott and Storper, 2003). Loss of population has certainly contributed to a host of wider economic, social and environmental problems for cities (Cheshire and Hay, 1989; Begg et al, 1986). Shifts in the level and composition of the population can affect local employment through demand for goods and services. A growing population tends to consume more food and drink, leisure and entertainment, and require more housing, schools, health centres and social services. These are all ‘high touch’ activities requiring proximity service providers and consumers. Changes in the working age population also affect labour availability, and migration may help to offset shortages resulting from an ageing population. A continuously refreshed supply of skilled labour can offer cities a comparative advantage and help attract mobile investment (Gordon and Turok, 2005; Shapiro, 2005). Unskilled migrants can also ensure that basic services are delivered in sectors where wage rates are unattractive to the indigenous population. Migrants may also have a greater propensity to start their own businesses, either because of their own aptitudes or discrimination in seeking jobs.ⁱⁱⁱ

These influences may be becoming more important with rising personal mobility as a result of higher incomes and falling transport costs (Glaeser, 2001, 2005). Falling household sizes may also enable higher mobility because people have fewer dependents. Higher mobility may mean that quality of life considerations (such as amenities and climate) feature more strongly in demographic changes. The pressures

to migrate from some regions are also increasing because of the collapse of jobs in agriculture and manufacturing industries as a result of rising productivity and intensified international competition. Falling barriers to international migration within the enlarged European Union are making it easier for people to move between selected parts of Eastern and Western Europe.

Six propositions for examination can be drawn out of this discussion:

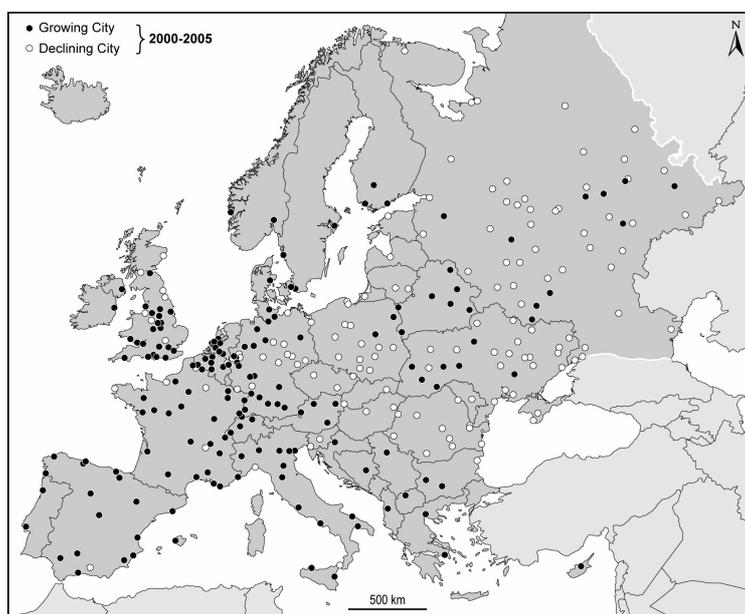
- i. The trajectory of European cities has improved in recent years, both in relation to their past fortunes and relative to smaller settlements, because of stronger economic and demographic forces for concentration (such as the growth of service industries and smaller households).
- ii. The alternative proposition is that cities have continued to decline because of continuing forces for deconcentration (such as lower communication costs, higher household incomes, poor environmental quality and space constraints)
- iii. Big cities have tended to improve more than smaller cities because of the larger scale of economic and social opportunities, cultural amenities, universities, information spillovers, international connectivity and other assets available to mobile firms and people.
- iv. Cities in the economic and political core of Europe (where proximity to the leading centres of political power, business wealth and technological innovation is highest) have grown more strongly than those in the periphery.
- v. Cities with a higher quality of life (such as a sunnier climate) have experienced a stronger recovery than cities elsewhere.
- vi. Western European cities have shown more signs of revival than those in the East because of the major political and economic upheavals in the latter.

4. AGGREGATE PATTERNS OF CHANGE

What has the recent trajectory of European cities actually been? Our analysis takes a longer-term perspective than previous studies and is based on data between 1960 and the most recent available information, usually 2005. It is also more comprehensive in covering all 310 cities (in 36 countries) with a population of over 200,000 (see **Figure 1**). These cities account for 36.5% of the total population of the 36 countries. The

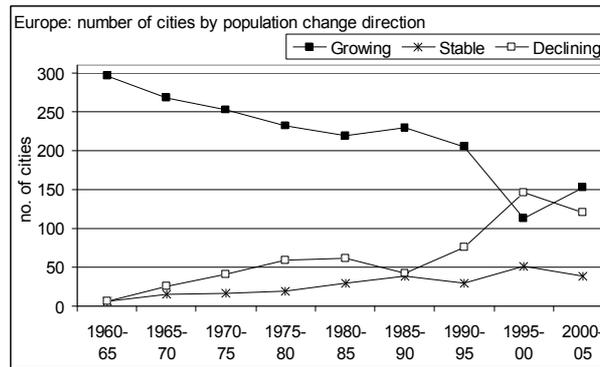
cities in the West account for 42.3% of the population of Western Europe and the cities in the East account for 29.7% of the population of Eastern Europe.

Figure 1: Map of European cities with over 200,000 population



The starting point is whether European cities are growing or declining in absolute terms, and whether the balance between growth and decline has changed in recent years. The suggestion that ‘cities are back’ (ODPM, 2004) could be interpreted as implying that there are more growing than declining cities now than there were before. **Figure 2** shows the number of growing cities has in fact been falling steadily since the 1960s. Nearly three times as many cities were growing in the late-1960s compared with the late-1990s. There were more declining cities in Europe in the late-1990s than growing cities, perhaps for the first time in several centuries! This consistent negative trend belies any suggestion of a general turnaround in the performance of European cities dating back to the 1980s or 1990s. The only positive sign is the evidence of a slight recovery within the last five years in the number of growing cities. It is certainly too soon to suggest that this is a significant or sustained turnaround. There is a long way to go before the number of growing cities is back even to the level of the 1980s.

Figure 2: The number of growing, declining and stable cities, 1960-2005



NOTE: The ‘stable’ group includes cities with a +/-0.11% arithmetic mean change in population per year (i.e. +/-5% absolute population change between 1960 and 2005).

Absolute population change is a demanding test of urban performance since it partly reflects national demographic trends, and it is widely known that the natural rate of demographic change (that is, the number of births in relation to deaths) in most European countries has slowed considerably since the 1960s. A measure of population change in cities *relative* to national population change is therefore an important supplementary indicator of their performance. Relative growth or decline provides a simple indication of the scale of net migration flows between cities and other urban and rural areas, in other words whether people are generally moving to or away from cities.

Table 1 shows that there were more than three times as many cities growing faster than their national average during the 1960s compared with the number growing more slowly. It would have been accurate to describe most cities as engines of growth during this era since they were drawing resources to them and growing much more strongly than other settlements. Their increase in population was not simply attributable to the general excess of births over deaths. There was considerable net rural-urban migration (urbanisation) in most countries during this period (Salt and Clout, 1976; Begg et al, 1986; Fielding, 1993).

Table 1: Relative and absolute population changes, 1960-2005

	1960-65	1965-70	1970-75	1975-80	1980-85	1985-90	1990-95	1995-00	2000-05
No. of growing cities*	241	243	226	215	190	185	165	128	145
No. of declining cities*	69	67	84	95	120	125	145	182	165
Ave. annual city pop. growth rate [^]	2.87	2.57	2.32	1.42	0.97	0.76	0.30	-0.13	0.09
Ave annual national pop. growth rate [^]	1.08	0.82	0.76	0.58	0.59	0.43	0.01	0.02	0.15

NOTE: * Growing cities are those with a rate of population change above their national average (i.e. relative growth). Declining cities are those with a rate of population change below their national average (i.e. relative decline). [^] These average figures are unweighted.

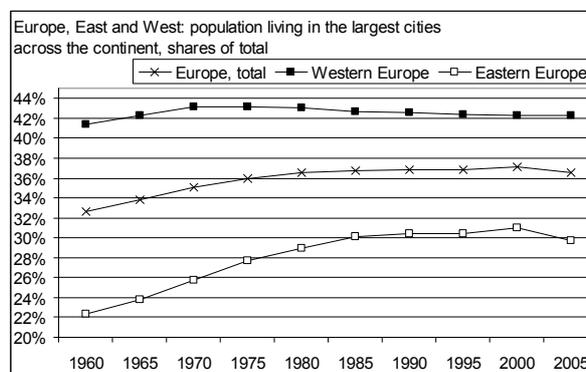
Table 1 also shows that the proportion of cities that were growing faster than their nations fell steadily during the following three decades until the late 1990s, when for the first time there were more cities under-performing their national averages, that is lagging rather than leading national trends. This is consistent with the data in **Figure 1**. Indeed the implication is slightly worse, with the number of declining cities slightly higher and the number of growing cities slightly lower. Both relative and absolute figures suggest that the late 1990s were the worst period for European cities, when decline was most widespread. There was a slight improvement in the first few years of the new millennium, although the number of cities in relative decline still exceeded those that were growing. Relative decline has therefore been a more common feature of city trends during the last decade than relative growth.

The absolute rates of population growth for cities and their nations are also shown in **Table 1**. During the early 1960s, cities were on average growing at nearly three times the rate of their national populations, indicating very strong urbanisation trends. The differential narrowed steadily until the late-1990s, when cities fell below national

trends and were actually declining on average. There was a slight recovery between 2000-05, but cities were still growing more slowly than their national populations.

The relative performance of cities over time can also be simply illustrated by the share of the total population that lives there. **Figure 3** shows the increasing proportion of Europe’s total population that lives in the 310 cities. Their share rose steadily during the 1960s and 1970s, but then stabilised to peak at just over 37% in 2000. The share then fell back to 36.5% in 2005.

Figure 3: Proportion of the population living in Europe’s 310 largest cities, 1960-2005



The chart also shows a big difference between the position of Western and Eastern Europe. The proportion of Western Europe’s population living in cities of over 200,000 peaked in 1970 at a level of over 43% and then fell back slightly during the 1980s and early 1990s. In contrast, the proportion of Eastern Europe’s population living in cities of over 200,000 started from a much lower level and rose steeply until it reached a level of just over 30% in 1990. It then stopped rising, partly because of the economic and political turmoil in the region at the time (Treivish et al, 1999; Nefedova and Treivish, 2003), and at a much lower level than in the West. The proportion of the population living in these cities then declined in the early 2000s, partly because of net out-migration to towns and rural areas and to Western Europe (Kok, 1999; Wießner, 1999; Nuissl and Rink, 2005). Eastern European cities are solely responsible for the relative downturn in Europe’s city population since 2000.

The overall message is that the decline in city growth rates since the 1960s seems to be more a function of the diminishing attractiveness of cities to migrants and less the result of a slowdown in the birth rate. The dominant pattern for European cities appears to be long-term stagnation or slowdown rather than revitalisation.

5. DIFFERENT TRAJECTORIES OF CHANGE

The next step in the analysis is to move beyond average growth rates and to unpack the aggregate pattern of change by examining the different trajectories of individual cities. We define ‘resurgence’ in a very straightforward way as a period of population decline followed by a period of population growth (see Beaugard, 2004, for a similar definition). The underlying question posed is how many cities have experienced this kind of positive turnaround in recent years compared with the opposite of a downturn, or a period of continuous growth or decline.

Figure 4: Trajectories of individual cities, 1960-2005

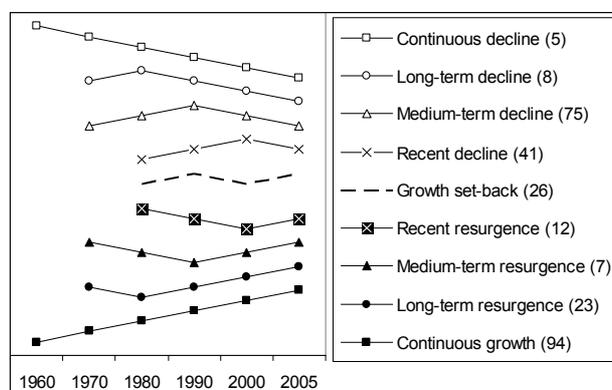


Figure 4 shows the nine most common trajectories in schematic form. The categories are mutually exclusive and the figure only shows the *direction* of change between different points in time, not the rate of change. The trajectories range from continuous decline over the last 45 years to continuous growth. The other categories represent shorter durations of decline or growth. There were no cities with stable population sustained over several decades. There are three categories of resurgence:

- Recent resurgence - decline during the 1980s and 1990s followed by growth in early 2000s
- Medium-term resurgence - decline during the 1970s and 1980s followed by growth in 1990s and early 2000s
- Long-term resurgence - decline during the 1970s followed by growth in 1980s, 1990s and early 2000s

The vast majority of the 310 cities (94%) followed one of these nine trajectories. The number that followed each trajectory is shown in the key to **Figure 6** and the individual cities are listed by country in **Appendix B**.

The most common trajectory, followed by nearly one in three of the cities, was ‘continuous growth’. There were 20 French cities in this group, 11 from Spain and 10 from Germany. The second most common trajectory, with about one in four cities, was ‘medium-term decline’, i.e. growth in the 1970s and 1980s followed by decline in the 1990s and early 2000s. There were 28 Russian cities in this group, 17 from Ukraine and eight from Poland. The third most common trajectory, with about one in seven cities, was ‘recent decline’, i.e. growth in the 1980s and 1990s followed by decline in the early 2000s. There were 18 Russian cities in this group, six from Ukraine and six from Poland.

Taking the second and third groups together, there were 116 cities that had experienced a clear downturn since 1990. This greatly outnumbers the 19 cities that experienced a positive turnaround since 1990: 12 were resurgent during the early 2000s, and seven during the 1990s. Another 23 cities turned around during the 1980s. Thirteen of these 42 resurgent cities were located in the UK, eight in Germany, five in Belgium and five in Italy.

The discontinuous trajectory in the middle of **Figure 6** covered 26 cities, mostly in Eastern Europe. They grew in the 1980s, declined in the 1990s, and then returned to growth in the early 2000s. They are described as ‘growth set-back’ rather than resurgent since their decline seems to have been a very temporary phenomenon in a trajectory that was otherwise characterised by growth.

There are only 13 cities that have experienced continuous or long-term decline. Three of them are located in the UK (Merseyside, Tyne and Wear and Greater Glasgow) and seven in Germany (including the Ruhr, Saarbrücken and Leipzig).

Overall, the main message is that there is a large group of cities that have experienced long-term growth and a similarly large group that have experienced a recent downturn, but the number of resurgent cities is quite small. Only one in seven cities has had a positive turnaround since 1980 and one in 16 since 1990.

Another important finding is that national distinctions seem to matter. There appear to be important differences between the fortunes of cities in different countries, suggesting that national economic conditions, settlement structures and/or governance arrangements play an important part in shaping city trajectories.

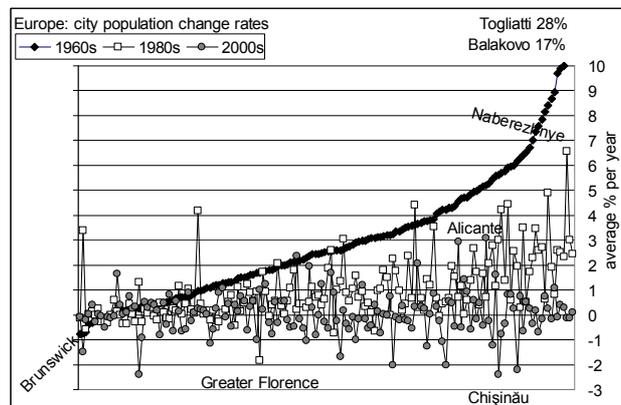
6. A CONSISTENT PATTERN OF SLOWDOWN

One of the reasons for the limited number of resurgent cities may be the high degree of momentum in city trajectories. It has been suggested that: “Cities have much more inertia than super-tankers and policy takes a long time to have any significant effect” (Cheshire, 2006, p. 1234). One of the reasons for this momentum is the durability of the built environment and infrastructure, particularly the stock of housing and business property (Storper and Manville, 2006). This conditions the locational choices available to people and firms and limits the extent to which city trajectories depart from their historical path.

Figure 5 tracks the population growth rate of the 310 cities across three periods - the 1960s, 1980s and early 2000s. The chart is scaled using the growth rate of each city during the 1960s. It shows that nearly half of European cities had a growth rate of over 3% per annum during the 1960s and nearly one in five were growing at over 5% per annum. Most of the fastest growing cities were located in Eastern Europe and some of them were state-sponsored New Towns. The growth rate slowed sharply by the 1980s, when few cities were growing at 3% or more per annum. The general upward sloping curve of the 1960s is still apparent during the 1980s, albeit at a much lower gradient and with considerable variability between cities. This means that cities

that were growing fastest in the 1960s were still tending to grow fastest twenty years later. However, this relationship had effectively disappeared by the early 2000s, when there were few cities growing at more than 1% per annum anywhere. The general slowdown appears to have eliminated any obvious consistent pattern of change. This suggests an important qualification to the argument about path dependency: such forces may apply more strongly during periods of growth than decline or slowdown.

Figure 5: Average growth rate of cities during different time periods



NOTE: the chart shows the growth rate of each city in the 1960s, 1980s and early 2000s, scaled by its growth rate in the 1960s

The remaining sections consider whether there are any other obvious factors that may be associated with variations in the fortunes of cities. Following the propositions identified in section 3, we consider the issues of city size, core/periphery location and quality of life.

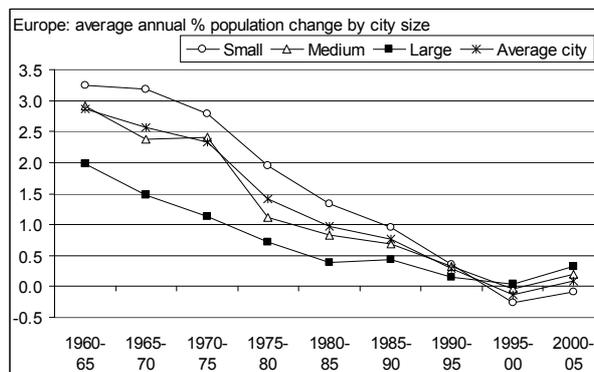
7. THE SIGNIFICANCE OF CITY SIZE

City size has been an important distinction in the past between the differential growth rates of cities. It is well established that large cities have tended to grow more slowly than smaller cities and towns in the post World War II period (Hall et al, 1973; Fothergill and Gudgin, 1982; van den Berg et al, 1982; Begg et al, 1986; Breheny, 1999). This is partly because of diseconomies of scale, such as congestion and high property prices, as well as the decline of former dominant industries, basic physical

constraints on land availability and planning restrictions on peripheral expansion of major cities in many European countries. In addition, it is simpler for a small city to accommodate, say, a one per cent per annum expansion than for a large city because its perimeter is proportionately larger in relation to its built-up area. In contrast, the new urban agenda suggests that big cities are now better placed than smaller settlements because of the larger scale of opportunities, amenities, infrastructure and skills available to mobile firms and people.

Figure 6 shows the average rate of population growth for cities of different sizes between 1960 and 2005. The growth all groups of cities slowed dramatically between the 1960s and 1990s. Since the late 1990s the population of European cities has recovered slightly, but growth is still considerably lower than before the late 1990s. Looking at the differences between size bands, during the 1960s small cities expanded at roughly twice the rate of large cities, confirming the received wisdom. The growth rate of big cities slowed sharply between the 1960s and early 1980s, but the slowdown of small cities was delayed by a few years before being even steeper between the 1970s and 1990s. Small cities have in fact experienced shrinking populations on average during the last decade. Consequently, the relative position of large and small cities has been reversed since the mid-1990s, although the difference in growth rates is now much smaller than it was two or three decades ago. Looking back over the four decades, there is clear evidence of an improvement in the position of large cities relative to smaller cities. However, the absolute improvement in the growth rate of large cities dates back only to the late 1990s.

Figure 6: Population growth rates for cities of different sizes, 1960-2005



NOTE: Small cities are defined as between 200-400,000 population; medium cities are 0.4-1m; and large cities have over 1m population

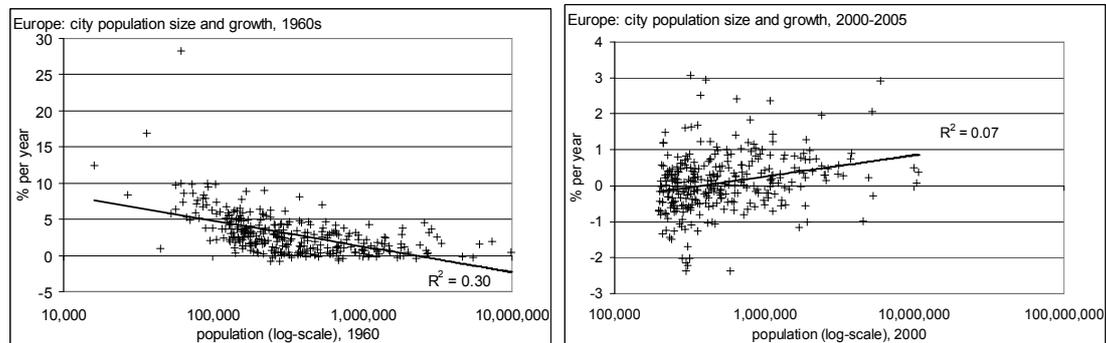
Table 2 provides another perspective on these patterns. It shows the proportion of cities within each size band that were growing between 1960 and 2005 (in absolute terms). The vast majority of cities were growing in the 1960s, but this fell to less than half in the late 1990s. The number of large cities that were growing fell steadily during these three decades, with a slight blip in the late-1980s. However, the vast majority of small cities continued to grow until the early-1990s, when there was a sharp reduction. In the first few years of the new millennium the proportion of large cities that were growing was back to the level of the late-1970s and 50% higher than that of small cities. This evidence suggests that there has been a more widespread turnaround among large cities than among small or medium-sized cities, although once again it is still very recent.

Table 2: Proportion of cities within each size band that was growing, 1960-2005 (%)

City size	1960-65	1965-70	1970-75	1975-80	1980-85	1985-90	1990-95	1995-00	2000-05
Small	98.6	91.0	92.4	84.1	84.8	89.0	75.2	37.2	44.8
Medium	96.0	92.0	78.0	77.0	73.0	79.0	75.0	48.0	60.0
Large	93.8	84.6	75.4	69.2	63.1	69.2	58.5	55.4	70.8

This evidence of a reversal in the relative position of large and small cities is important and worth investigating further. A simple way of checking this is to correlate city size and population growth rate at the beginning and end of this era. **Figures 7 and 8** show this relationship over the 1960s and four decades later between 2000-2005. The relationship is negative in the first decade, but not in the most recent period. This provides further evidence of the relative improvement in the position of large cities compared with smaller ones over the last four decades. Looking closely at the two figures suggests that the slowdown in the growth rate of smaller cities was the key to this change.

Figures 7 & 8: Relationship between city size and growth rate, 1960-70 and 2000-05

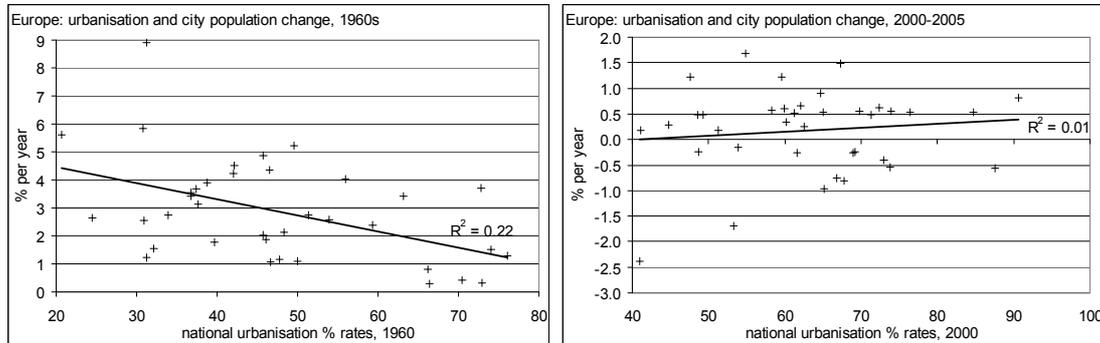


8. URBANISATION AND CONCENTRATION

Urbanisation is linked to the issue of city size. One would expect the average growth rate of cities within a country to be related to its level of urbanisation. This is partly for the straightforward reason that there is more capacity for cities to grow through rural-urban migration where the level of urbanisation is low than where it is high. The migration pressures may also be greater where the rural population is larger, given the general structural shift in employment from agriculture towards industry and then services as economies modernise and mature (Rowthorn and Wells, 1987).

Using UN data on the level of urbanisation for each country, **Figure 9** shows the correlation with the average growth rate of cities for each country during the 1960s. There was a negative relationship, as expected. The countries with the lowest rates of urbanisation tended to have faster growing cities and vice-versa. **Figure 10** shows the same correlation between 2000-2005. City growth rates no longer seem to be related to urbanisation. Comparing the two figures leads to the conclusion that the main change was a slowdown in city growth rates in countries with relatively low levels of urbanisation, that is to say in Eastern Europe. Notwithstanding some earlier predictions to the contrary (see Szelenyi, 1996), cities in the East appear to have become much weaker magnets for rural-urban migration, partly because of the economic and political transformation in the sub-continent (Rowland, 1996; Ladányi and Szelenyi, 1998; Medvedkov and Medvedkov, 1999).

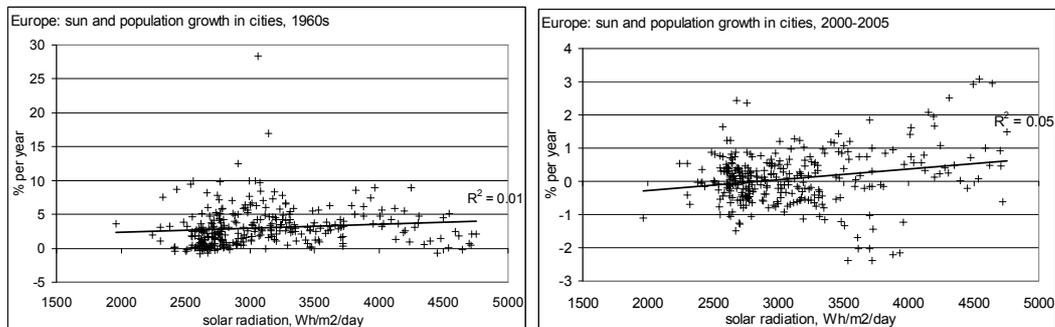
Figures 9 & 10: Relationship between urbanisation and city growth rates, 1960-70 and 2000-2005



9. THE SIGNIFICANCE OF QUALITY OF LIFE

Evidence from the US suggests that quality of life as reflected in the climate is an increasing influence on the population growth rate in different places as people become more mobile (Florida, 2004; Glaeser, 2001). Is there any evidence that this may hold true in Europe as well? A direct measure of what is probably the most important aspect of climate is the amount of solar radiation received. **Figures 11 and 12** show the correlation between the population growth rate of the 310 cities and the amount of sun received. There is no significant relationship between the two variables and this has not changed over the last four decades. Cities in southern Europe have generally not grown any faster or slower than cities in northern Europe.

Figures 11 & 12: Relationship between solar radiation and city growth rate, 1960-70 and 2000-2005

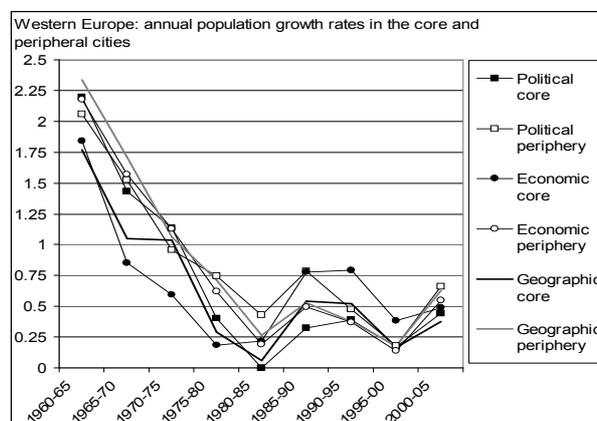


NOTE: X axis shows the amount of solar radiation in watt-hours per sq. metre per day

10. CORE-PERIPHERY DIFFERENCES

There are a variety of reasons why one might expect cities in the economic, geographic and political core of Europe to grow more strongly than those on the periphery, or perhaps to have recovered more strongly from the nadir of the early-1980s. They include proximity to wealth, high-level corporate functions and powerful political and cultural institutions. The proposition was tested in three ways: (i) by comparing the population growth rates of cities in the original six member states of the EU (Belgium, France, West Germany, Italy, Luxembourg and Netherlands) (the ‘political core’) with those in the rest of Western Europe; (ii) by comparing the growth rates of cities in the ‘geographic core’ of Western Europe with those on the periphery; and (iii) by comparing the growth rates of cities in the most prosperous regions^{iv} of Western Europe with those elsewhere. **Figure 13** shows that there are no apparent systematic differences between the core and periphery on any of these dimensions. The core or peripheral regional position of cities does not appear to be a strong differentiating factor in their growth rates. In addition, close inspection of the recovery period since the late-1990s shows that, if anything, cities in the periphery grew more strongly than those in the core, contrary to expectations.

Figure 13: Population growth rates of cities in the ‘core’ and ‘periphery’ of Western Europe, 1960-2005

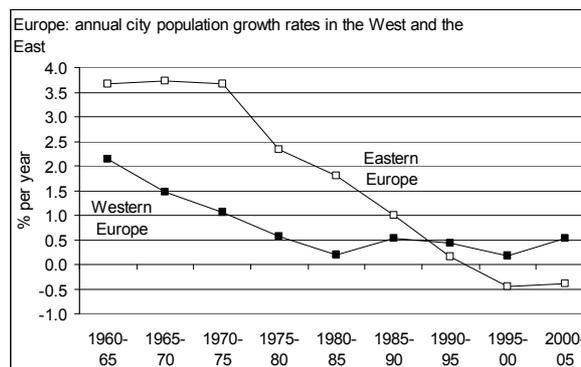


11. DIFFERENCES BETWEEN WESTERN AND EASTERN EUROPE

Important differences between Western and Eastern European cities are already apparent from the above discussion. **Figure 14** shows a stark reversal in the fortunes of Eastern European cities over the last three decades. From a position of very strong growth in the 1960s and early 1970s, followed by somewhat slower growth the following decade, the trajectory of cities in the East has been transformed to actual population contraction over the last decade. The political and economic upheaval of the 1990s was clearly associated with a dramatic deterioration in the position of cities. The one positive feature is that the incessant negative trend in the growth rate appears to have halted since 2000, and even recovered very slightly, although city populations are still shrinking on average.

The trajectory of Western European cities has been far less dramatic. The average growth rate was much lower in the 1960s and the slowdown occurred much earlier. In the early 1980s, the population of cities in the West was barely growing. Since then the position has fluctuated a little, with a slight recovery in the late-1980s followed by another slowdown in the late 1990s. The average growth rate has picked up again since 2000, although it is still far less than it was in the 1960s and 1970s.

Figure 14: City growth rates in Western and Eastern Europe, 1960-2005



12. CONCLUSIONS

A simple question was posed at the outset - whether there has been an improvement in the fortunes of European cities, arguably reflecting the structural shift that is occurring towards a more services-oriented economy and smaller households. The answer seems to depend partly on how this 'resurgence' is assessed and what timescale is applied.

On a strict definition of resurgence, based on population change, one in seven cities (42 of the 310 total) has experienced a period of growth following a period of decline, that is, an absolute turnaround. This is not a trivial number, but it is still only a small minority of cities. More than half of these resurgent cities turned around during the 1980s, so the occurrence of urban revitalisation is not simply a recent phenomenon.

One of the reasons there are not more resurgent cities is that nearly a third of all cities have been growing continuously. Clearly, resurgence is far less common than continued growth. The substantial number of cities that have grown consistently over the last four decades indicates that the negative thesis of urban crisis and decline is far from universal, although the diminishing rate of growth of these cities should not be forgotten.

Another reason there are not more resurgent cities is that nearly two in every five cities have experienced a downturn since 1990 and are now actually declining. Hence, the extent of resurgence is also much more restricted than the phenomenon of negative turnaround. This group of cities conforms more closely to the declining cities thesis and it clearly contradicts the arguments for urban revitalisation.

Considering the cities that are growing more slowly together with those that are now declining leads to the conclusion that the fortunes of the vast majority of cities have actually deteriorated over the last three decades, both in both in relation to their past trajectories and relative to smaller urban and rural areas. In addition, looking across all 310 cities, the average growth rate (measured in absolute terms and relative to their national averages) has slowed considerably since the 1960s and 1970s. Cities are growing, but at a very low rate by historical standards. That is the long-term view.

Taking a short-term perspective, several indicators suggest something of a recovery within the last five years. This is apparent both in the average growth rate of cities and in the number of growing rather than declining cities. Both sets of indicators suggest that the late 1990s was the worst period for European cities overall, and that conditions have been improving in the early years of the new millennium.

The turn of the millennium may transpire to be an important turning point for European cities. However, previous experience suggests caution before heralding a new urban era. Some parts of Europe have been here before. The average growth rate of Western European cities recovered in the late 1980s following the nadir in the early 1980s, but this was followed by a setback in the 1990s. It seems too soon to conclude that the very recent improvement in 2000-05 will be more enduring.

The message is slightly more positive for large than for small cities, particularly in terms of the number that are now growing rather than declining. The average growth rate of large cities also exceeds that of small cities, although it is still very low by historical standards, and the relative improvement is mainly accounted for by the deteriorating position of small cities. It appears that the strong net migration flows to cities (especially to smaller cities) that occurred during the 1960s and 1970s have abated, and in some cases they seem to have been reversed. The decline in net flows appears to question the notion outlined earlier in the paper that migration and mobility are increasing.

The full explanation for these findings is beyond the scope of the present paper. A slowdown in urban employment growth is likely to be part of the story, particularly in Western Europe during the 1970s and 1980s, and in Eastern Europe during the 1980s and 1990s. There is strong evidence from some countries that this was linked with deindustrialisation and deconcentration of economic activity (Begg et al, 1986; Breheny, 1999; Turok and Edge, 1999).

A more recent contributory factor may be rising productivity levels and innovation (as suggested by the new urban theories) showing up in higher incomes for workers, but without equivalent growth in the number of jobs, and therefore not causing strong population growth. Time lags may also be important: the conurbations of Glasgow,

Merseyside and Tyne and Wear have experienced employment growth over the last decade, but demographic trends have been slow to catch up (Parkinson et al, 2006). This discrepancy between population and employment trajectories offers a useful cautionary note on which to conclude. City resurgence is a multi-dimensional phenomenon requiring a basket of indicators to capture fully. This is one of the challenges for future research.

REFERENCES

- Beauregard, R. (2004) 'The resilience of U.S. cities: Decline and resurgence in the late 20th century' paper presented at Symposium on The Resurgent City, LSE, <http://www.lse.ac.uk/collections/ResurgentCity/Papers/htm>
- Begg, I., Moore, B. and Rhodes, J. (1986) 'Economic and social change in urban Britain and the inner cities', in Hausner, V. (ed) *Critical Issues in Urban Economic Development, Volume 1*, Oxford: Oxford University Press,
- van den Berg, L., Drewett, R., Klaasen, L. et al (1982) *Urban Europe: A Study of Growth and Decline*, Oxford: Pergamon.
- Breheny, M. (ed.) (1999) *The People: Where Will They Work?*, London: Town and Country Planning Association.
- Buck, N., Gordon, I., Hall, P., Harloe, M., and Kleinmann, M. (2002) *Working capital*. London: Routledge.
- Buck, N., Gordon, I., Harding, A. and Turok, I. (2005) *Changing Cities: Rethinking Urban Competitiveness, Cohesion and Governance*, London: Palgrave.
- Champion, T. (1995) 'Internal migration, counterurbanisation and changing population distribution', in Hall, R. and White, P. (eds) *Europe's Population: Towards the Next Century*, London: UCL Press.
- Champion, T. and Fisher, T. (2004) 'Migration, residential preferences and the changing environment of cities', in M. Boddy and M. Parkinson (eds.) *City Matters*, Bristol: Policy Press.
- Cheshire, P. and Hay, D. (1989) *Urban Problems in Western Europe*, London: Unwin Hyman.

- Cheshire, P. (1995) 'A new phase of urban development in western Europe? The evidence for the 1980s', *Urban Studies*, 32, 7, pp. 1045-1063.
- Cheshire, P. (2006) 'Resurgent cities, urban myths and policy hubris: what we need to know', *Urban Studies*, 43, 8, pp. 1231-1246.
- European Commission (2005) *Cohesion Policy and Cities: The urban contribution to growth and jobs in the regions*, Commission Staff Working Paper, 23/11/2005, Brussels.
- European Commission (2006) *Cities and the Lisbon Agenda: Assessing the Performance of Cities*, Directorate-General Regional Policy, Brussels.
- Fielding, A. (1993) 'Mass migration and economic restructuring', in King, R. (ed) *Mass Migrations in Europe: The Legacy and the Future*, London: Belhaven, pp.7-18.
- Florida, R. (2004) *The Rise of the Creative Class*, New York: Basic Books.
- Fothergill, S. and Gudgin, G. (1982) *Unequal Growth: Urban and Regional Employment Change in the UK*, London: Heinemann.
- Fothergill, S., Kitson, M. and Monk, S. (1985) *Urban Industrial Change: The causes of the urban-rural contrast in manufacturing employment trends*, London: HMSO.
- Garreau, J. (1991) *Edge City*, New York: W. W. Norton.
- Glaeser, E., Kolko, J. and Saiz, A. (2001) 'Consumer city', *Journal of Economic Geography*, 1, pp.27-50
- Glaeser, E. (2005) 'Four Challenges for Scotland's Cities', in Coyle, D., Alexander, W. and Ashcroft, B. (eds) *New Wealth for Old Nations: Scotland's Economic Prospects*, Princeton: Princeton University Press, pp.73-95.
- Glaeser, E. and Gottlieb, J. (2006) 'Urban resurgence and the consumer city', *Urban Studies*, 43, 8, pp.1275-99.
- Gordon, I. and Turok, I. (2005) 'How urban labour markets matter', in Buck, N. et al, *Changing Cities: Rethinking Urban Competitiveness, Cohesion and Governance*, London: Palgrave.
- Green, A. and Owen, D. (1995) 'The labour market aspects of population change in the 1990s', in Hall, R. and White, P. (eds) *Europe's Population: Towards the Next Century*, London: UCL Press.
- Hall, P. et al (1973) *The Containment of Urban England*, London: Allen and Unwin.

- Hall, P. and Hay, D. (1980) *Growth Centres in the European Urban System*, London: Heinemann Educational.
- Harding, A., Marvin, S. and Robson, B. (2006) *A Framework for City-Regions*, London: ODPM.
- Kok, H. (1999) 'Migration from the city to the countryside in Hungary and Poland', *GeoJournal*, 49, pp. 53-62.
- Krugman, P. (2005) 'Second winds for industrial regions?', in Coyle, D., Alexander, W. and Ashcroft, B. (eds) *New Wealth for Old Nations: Scotland's Economic Prospects*, Princeton: Princeton University Press, pp.35-47.
- Ladányi, J. and Szelényi, I. (1998) 'Class, ethnicity and urban restructuring in Postcommunist Hungary', in Enyedi, G. (ed) *Social Change and Urban Restructuring in Central Europe*, Budapest: Akadémiai Kiadó, pp. 67-86.
- Medvedkov Y. and Medvedkov, O. (1999) 'Turning points and trends in Russia's urbanization', in Demko, G. J., Ioffe, G., and Zayonchkovskaya, Zh. (eds) *Population Under Duress: The Geodemography of Post-Soviet Russia*, Oxford: Westview Press, pp. 201-229.
- Nathan, M. and Marshall, A. (2006) *Them and Us: Britain and the European City*, *Centre for Cities Discussion Paper 7*, London: Institute for Public Policy Research.
- Nefedova, T. and Treivish, A. (2003) 'Differential urbanisation in Russia', *Tijdschrift voor Economische en Sociale Geografie*, 94, 1, pp. 75-88.
- Nuissl, H. and Rink, D. (2005) 'The "production" of urban sprawl in eastern Germany as a phenomenon of post-socialist transformation', *Cities*, 22, 2, pp. 123-134.
- ODPM (2004) *Our Cities are Back: Competitive Cities make Prosperous Regions and Sustainable Communities*, London: Office of the Deputy Prime Minister.
- OECD (1983) *Managing Urban Change: Policies and Finance*, Paris: OECD.
- OECD (2001) *Devolution and Globalisation: Implications for Local Decision-Makers*, Paris: OECD.
- Parkinson, M., Champion, T., Evans, R. et al (2006) *State of the English Cities*, London: ODPM.
- Pascal, A. (1987) 'The vanishing city', *Urban Studies*, 24, 6, pp. 597-603.
- Rice, P., Venables, A. and Pattachini, E. (2006) 'Spatial determinants of productivity: Analysis for the UK regions', *Regional Science and Urban Economics*.

- Rowland, R. H. (1996) 'Russia's disappearing towns: new evidence of urban decline, 1979-1994', *Post-Soviet Geography and Economics*, 37, 2, pp. 63-87.
- Rowthorn, R. and Wells, J. (1987) *Deindustrialisation and Foreign Trade*, Cambridge: Cambridge University Press.
- Salt, J. and Clout, H. (eds) (1976) *Migration in Post-war Europe: Geographical Essays*. London: Oxford University Press.
- Scott, A.J. and Storper, M. (2003) 'Regions, globalisation, development', *Regional Studies*, 37 (6-7), pp.579-593.
- Shapiro, J. (2005) 'Smart cities: Quality of life, productivity and the growth effects of human capital', National Bureau of Economic research Working Paper 11615.
- Storper, M and Manville, M. (2006) 'Behaviour, preferences and cities: Urban theory and urban resurgence', *Urban Studies*, 43, 8, pp. 1247-1274.
- Szelényi, I. (1996) 'Cities under socialism – and after', in Andrusz, G., Harloe, M., and Szelenyi, I. (eds) *Cities After Socialism: Urban and Regional Change and Conflict in Post-Socialist Societies*, Oxford: Blackwell, pp. 286-317.
- Treivish, A., Brade, I. and Nefedova, T. (1999) 'Russian cities at a crossroads', *GeoJournal*, 49, pp. 115-127.
- Turok, I. and Edge, N. (1999) *The Jobs Gap in Britain's Cities: Employment Loss and Labour Market Consequences*, Bristol: Policy Press.
- Wießner, R. (1999) 'Urban development in East Germany – specific features of urban transformation process', *GeoJournal*, 49, pp. 43-51.

APPENDIX A: METHODS AND SOURCES

This note describes the procedures followed to define consistent spatial units and to identify suitable data sources for analysing long-run European city trajectories.

A.1 Definition of the city

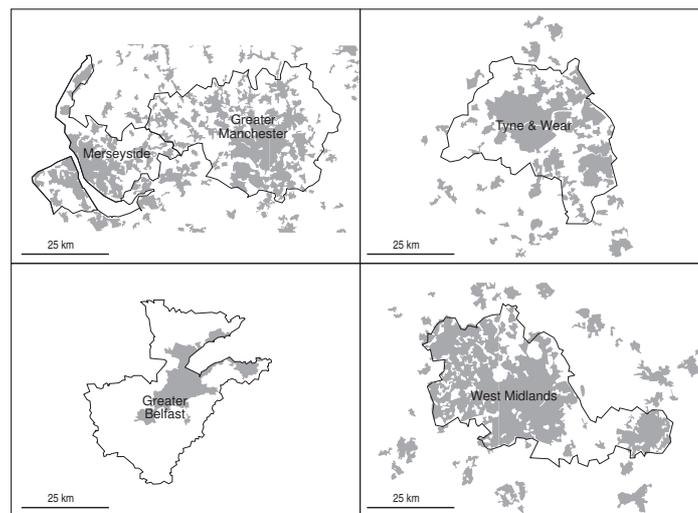
The extensive temporal and geographical scope of the analysis meant that the definition of cities had to be clear and consistent in terms of internal structure, external boundary definition and size thresholds. The relevant concept of the city was the commonsense idea of a continuous built-up area larger than a certain population size - a concentrated spatial form of socio-economic development. This is a physical and functional rather than an administrative definition, equivalent to the notion of a conurbation or metropolitan area. The concern was with change in the city as a whole, rather than particular parts such as the core area or suburban ring. This avoids the possibility of population decline appearing to be a problem where it simply reflects rising incomes and households choosing to live at lower densities in the suburbs.

The definitional task was most straightforward in about a dozen countries where the national statistics agencies provide consistent population figures for spatial units that equate with continuous built-up areas. In these cases we used the national definitions of cities, after checking that they were indeed appropriate, and making minor adjustments if not (see below). They include ‘census urban agglomerations’ in Austria and Greece, ‘principal urban areas’ in Cyprus, boroughs (*arrondissements*) for most cities in Belgium, ‘urban poles’ for most French cities (and *arrondissements* in a few cases where the urban pole extended well beyond the built-up area), ‘metropolitan agglomerations’ in the Netherlands, ‘urban localities/areas’ for most Scandinavian cities, ‘agglomerations’ in Switzerland, and former ‘metropolitan counties’ in the UK and Ireland (for some examples, see Map A.1). In most cases the boundaries of these entities were enlarged over time to reflect the physical growth of the cities.

Cities were defined as settlements with a population of over 200,000 in the year 2000, or the closest available year, using population census data. The 200,000 threshold is inevitably somewhat arbitrary, although it accords with several previous studies of urban development in Europe, as does the timing of its application (towards the end of

the time series) (van den Berg *et al*, 1982; Cheshire and Hay, 1989).¹ At least three previous studies of urban trends in Britain used a higher threshold of 250,000 (Begg *et al*, 1986; Fothergill *et al*, 1985; Turok and Edge, 1999) and the recent State of the English Cities report used a lower threshold of 125,000 (Parkinson *et al*, 2006). Clearly, there is no single correct answer.

Map A.1: Examples of different city definitions



In the other countries we had to construct continuous built-up areas ourselves. Since different national and international data sources were employed and for different points in time, the basic geographical units used as the building blocks had to be simple and broadly comparable. Local authorities were chosen partly for reasons of data availability. The point of departure in most countries was all urban local authority districts with a population of over 200,000 in 2000, or the closest available year, using population census data. To assess whether the administrative boundary of a qualifying city covered the whole built-up area, a series of topographic maps of Europe were consulted along with the national and European statistical agencies' maps of administrative territories (Eurostat, 2004; topographic maps at www.expedia.co.uk). In cases of 'under-bounding', where the administrative boundaries did not encompass the continuous built-up area, the core local authority district was amalgamated with adjoining districts that clearly formed part of the larger urban area. For example, we constructed 'Greater Belfast' by amalgamating six adjacent local government districts of Belfast, Castlereagh, North Down, Lisburn,

Carrickfergus, and Newtownabbey (Map A.1). In some cases the NUTS-3 region was used instead of the local authority where it provided a better fit to the built-up area or local authority data was unavailable.

In places where the population of the core local authority was below 200,000 in 2000, but it clearly formed part of a larger built-up area, that settlement was included on the list of cities (for example, Middlesbrough had 141,000 residents while Teesside conurbation had 464,000; Liège in Belgium had 186,000 while *Arrondissement de Liège* had 585,000). Where there was an established local name for the larger settlement, this was used (for example, Tyne and Wear covering the conurbation around Newcastle upon Tyne, and Ruhr District Conurbation around the Ruhr valley in Germany). Otherwise, ‘greater’ was added to the core city name to distinguish the larger settlement from the core district (for example, Greater Barcelona and Greater Toulouse). The local authorities that were not contiguous with other urban districts or that covered the whole built-up area were classified as freestanding cities and their conventional city names were used (for example, Vilnius in Lithuania, Århus in Denmark, and Swansea in the UK).

Recognising that the physical growth of cities can be substantial over time, and that administrative boundaries can alter radically too, we took a painstaking case-by-case approach and examined every city’s continuous built-up area in the early 2000s. The boundary drawn around each city enabled suburban expansion and edge city growth and consolidation to be captured. Similar approaches have been used before in academic research (Turok and Edge, 1999), data collection (Brinkhoff, 2006), the European Urban Audit (European Commission, 2004) and the recent State of the English Cities report (Parkinson *et al*, 2006). Brinkhoff’s work on the world’s largest agglomerations and the Urban Audit defined some of their cities on the basis of built-up areas and others on the basis of travel-to-work areas, which is an obvious source of inconsistency. The Urban Audit is based on a sample of cities within each country and the lower size threshold varies between countries, which are additional sources of inconsistency.¹ Brinkhoff’s urban agglomerations in Europe are overlapping and not mutually exclusive. Our procedure was similar to the State of English Cities report, except that we took a broader view of selected conurbations and did not, for example,

separate Birkenhead from Merseyside, Bradford from Leeds, or Bolton and Rochdale from Greater Manchester.

An alternative approach to using built-up areas is to define cities on the basis of ‘functional urban regions’ (van den Berg *et al*, 1982; Cheshire and Hay, 1989), which are similar to travel-to-work areas but with cities always at the core. These are inevitably larger than built-up areas because they include the hinterlands of employment centres from which commuters flow, including satellite towns. This is a useful concept for some purposes in capturing the sphere of labour market influence or ‘economic footprint’ of a city. However, a study of the demographic trajectory of cities as discrete entities should arguably focus on the continuous physical area, as the city is conventionally defined. In addition, the systematic definition of travel-to-work areas is very time consuming and requires regular updating in the light of changing commuting patterns. Consequently the task has only been completed in a few countries. Several urban researchers have resorted instead to using NUTS-3 regions to encompass the surrounding commuter settlements of major employment centres. The NUTS Regulation lays down a minimum population threshold of 150,000 and a maximum of 800,000 for the average size of NUTS-3 regions in each country. Despite aiming to ensure “that regions of comparable size all appear at the same NUTS level, each level still contains regions which differ greatly in terms of area, population, economic weight ...” (Eurostat, 2004, p.13). For example, NUTS-3 regions range from 19,000 to 5.2 million population, and from just 12 sq. km. to 99,000 sq. km. (Eurostat, 2004, p.24-25). The indiscriminate use of NUTS-3 regions as the building blocks for every city raises concerns about inconsistency between countries.

Europe was defined according to the physical meaning of the continent in order to avoid political confusion and cultural sensitivities. This is normally taken to include the land area between the Arctic Ocean, Atlantic Ocean and the Mediterranean, Black and Caspian Seas. The eastern boundary runs along the Ural Mountains and the Ural River. There are 36 independent states covered by this territory.

The 310 cities that emerged in our study are listed in Appendix C and range in size from Bila Tserkva in Ukraine (with 200,000 population) to the Greater London metropolitan area (with nearly 10.6 million). Three clear size bands are apparent:

- (i) 145 ‘small’ cities (47% of all) with between 200,000 and 400,000 people;
- (ii) 100 ‘medium-sized’ cities (32%) with between 400,000 and 1 million; and
- (iii) 65 ‘large’ cities (21%) with a population of over 1 million.

The three capitals of Greater London (10.6m), Greater Moscow (10.4m) and Greater Paris (9.6m) are exceptionally large. In terms of political-economy, 160 cities are in ‘Western’ Europe, defined as traditional market-oriented economies, including Austria (4 cities), Belgium (5), Cyprus (1), Denmark (2), Finland (3), France (30), Greece (2), Ireland (1), Italy (16), Netherlands (9), Norway (2), Portugal (2), Sweden (3), Switzerland (5), Spain (18), the UK (29), and the former West Germany (28, excluding West Berlin). Former state socialist societies of ‘Eastern’ Europe have 150 cities, including Albania (1), Belarus (7), Bosnia and Herzegovina (1), Bulgaria (3), Croatia (1), Czech Republic (3), the former East Germany (8, including Greater Berlin), Estonia (1), Hungary (2), Latvia (1), Lithuania (2), Macedonia (1), Moldova (1), Poland (16), Romania (11), Russia (57), Serbia and Montenegro (1), Slovakia (2), Slovenia (1), and Ukraine (31). They are all listed in Appendix C.

The 200,000 population threshold meant the exclusion of very small countries, dependent territories and islands, including Andorra, Faeroe Islands, Gibraltar, Guernsey, Iceland, Jersey, Liechtenstein, Luxembourg, Malta, Isle of Man, Monaco and San Marino. Istanbul was excluded because it is the only city in Turkey that lies (partly) in Europe compared with 28 others located in Asia. Russia also spans the two continents: 57 of its cities located within the physical entity of Europe were included and 36 cities located in Asia were excluded. Oral and Atyrau – Kazakstan’s two cities situated on the Ural River, the traditional physiographic boundary between Europe and Asia, were below the 200,000 population size threshold.

A.2. Data sources and population estimates

There were three main sources of demographic statistics used in the study. The core population data was derived from the most authoritative and regular sources – annual statistical yearbooks and key population and vital statistics published between 1960 and 2005 by the 39 national statistical agencies and general register offices, routinely up-dated through their on-line databases.¹ In addition, we used the annual

international collections of national population statistics – the United Nations *Demographic Yearbook* series (various years) and the UN International Statistical Institute's *International Statistical Yearbook of Large Towns* (ISI 1962, 1963, 1964, 1970), which were especially helpful in obtaining population data for smaller countries and early historical periods. We also used Eurostat (the Statistical Office of the European Communities), especially its population collection within the *Main Demographic Indicators*

(http://epp.eurostat.cec.eu.int/portal/page?_pageid=0,1136162,0_45572076&_dad=portal&_schema=PORTAL); latest accessed date: 14 February 2006).

Given the long timescale covered by the study, we felt that a five-year interval was sufficient to produce a manageable set of 10 cross-sectional times-series population data. In doing so we faced three kinds of data-related problems. First, there was missing data, especially in countries where there was no tradition of producing annual or mid-census population estimates for cities or urban areas, including France and most of southern and south east Europe. Second, there were discontinued data series, mostly involving local authority units and urban agglomerations where a boundary change occurred with no reliable official estimates linking the previous and new population figures. For example, Antwerp went from a population of 196,000 in 1980 to 490,000 in 1985. The third and biggest challenge involved countries with comprehensive administrative reforms in the 1960s and 1970s resulting in a complete re-drawing of municipal boundaries that we were seeking to use as building blocks to construct the built-up area.

Depending on the direction of the population estimate needed (a backward or forward projection), the length of the data gap and the level of the local authority or regional unit for which regular and consistent data was available, simple mathematical formulas were used to generate estimates in a consistent way. The basic principle was to consider the continuous built-up area as an intermediate level between the core local authority unit (in under-bounded cities) and a wider city-region (such as relevant NUTS-level regions of proportional size). We estimated the missing annual population growth rate for a 'city' as the mean of the observed growth rate for the lower-level authority and the rate for the larger statistical region. For example, we were able to estimate the population of 'our' Great London metropolitan area in 1960,

1965 and 1970 on the basis of the growth rate of Greater London and the old statistical regions of South-East and East Anglia (minus Greater London), before using our main procedure of amalgamating the relevant core city population figures (Great London in this case) with adjoining urban districts into a continuous built-up area.

The main disadvantage of the amalgamation procedure used here is the inclusion of large, predominantly rural adjoining districts in the population of some cities where no smaller lower-level units existed in the vicinity of the core city to capture suburban growth beyond its administrative boundary. For example, the population of the city of Ulm (West Germany) had to be combined with the rural district (*Landkreise*) of Neu-Ulm to capture long-term demographic changes in the Ulm metropolitan area in a way that was consistent with the procedure used elsewhere. In some cases, therefore, our definition of the city is better suited to examining growth *trends* than to comparing its actual size with other cities.

APPENDIX B: TRAJECTORIES OF INDIVIDUAL CITIES, 1960-2005

<i>Continuous decline</i>					
1. Wuppertal (W. Germany)	2. G. Leipzig (E. Germany)	3. G. Glasgow (UK)	4. Merseyside (G. Liverpool; UK)	5. Tyne and Wear (G. Newcastle; UK)	
<i>Long-term decline</i>					
1. G. Lens (France)	2. G. Le Havre (France)	3. Ruhr District Conurbation (G. Essen; W. Germany)	4. Brunswick (W. Germany)	5. G. Saarbrücken (W. Germany)	6. Chemnitz (E. Germany)
7. Magdeburg (E. Germany)	8. Budapest (Budapest)				
<i>Medium-term decline</i>					
1. Varna (Bulgaria)	2. Prague (Czech Rep.)	3. Brno (Czech Rep.)	4. Ostrava (Czech Rep.)	5. Tallinn (Estonia)	6. Erfurt (E. Germany)
7. Rostock (E. Germany)	8. Debrecen (Hungary)	9. Rīga (Latvia)	10. Vilnius (Lithuania)	11. Kaunas (Lithuania)	12. Chişinău (Moldova)
13. Lodz (Poland)	14. Wrocław (Poland)	15. Poznań (Poland)	16. Gdańsk (Poland)	17. Bydgoszcz (Poland)	18. Upper Silesian Conurbation (G. Katowice; Poland)
19. Częstochowa (Poland)	20. Kielce (Poland)	21. Bucharest (Romania)	22. Timișoara (Romania)	23. Constanța (Romania)	24. Brașov (Romania)
25. Brăila (Romania)	26. Oradea (Romania)	27. St. Petersburg (Russia)	28. Nizhniy Novgorod (Russia)	29. Samara (Russia)	30. Rostov-on-Don (Russia)
31. Ufa (Russia)	32. Perm' (Russia)	33. Saratov (Russia)	34. Izhevsk (Russia)	35. Yaroslavl' (Russia)	36. Penza (Russia)
37. Tula (Russia)	38. Ivanovo (Russia)	39. Br'iansk (Russia)	40. Kursk (Russia)	41. Tver' (Russia)	42. Archangel (Russia)
43. Murmansk (Russia)	44. Smolensk (Russia)	45. Vladimir (Russia)	46. Saransk (Russia)	47. Tambov (Russia)	48. Taganrog (Russia)
49. Petrozavodsk (Russia)	50. Dzerzhinsk (Russia)	51. Orsk (Russia)	52. Rybinsk (Russia)	53. Pskov (Russia)	54. Severodvinsk (Russia)
55. Bratislava (Slovakia)	56. Košice (Slovakia)	57. Ljubljana (Slovenia)	58. Granada (Spain)	59. Kharkiv (Ukraine)	60. Dnipropetrovs'k (Ukraine)
61. Odesa (Ukraine)	62. G. Donets'k (Ukraine)	63. Zaporizhzhia (Ukraine)	64. Mariupol' (Ukraine)	65. Luhans'k (Ukraine)	66. Simferopol' (Ukraine)
67. Sevastopol' (Ukraine)	68. Kherson (Ukraine)	69. Cherkasy (Ukraine)	70. Symu (Ukraine)	71. Horlivka (Ukraine)	72. Zhytomyr (Ukraine)
73. Dniprodzerzhyns'k (Ukraine)	74. Kirovohrad (Ukraine)	75. Kremenchuk (Ukraine)			
<i>Recent decline</i>					
1. G. Reims (France)	2. G. Brest (France)	3. G. Mannheim (W. Germany)	4. G. Kassel (W. Germany)	5. G. Heerlen (Netherlands)	6. Krakow (Poland)
7. Szczecin (Poland)	8. Lublin (Poland)	9. Gdynia (Poland)	10. Radom (Poland)	11. Toruń (Poland)	12. Iași (Romania)
13. Cluj-Napoca (Romania)	14. Craiova (Romania)	15. Galați (Romania)	16. G. Volgograd (Russia)	17. Ul'ianovsk (Russia)	18. Orenburg (Russia)
19. R'iazan' (Russia)	20. Naberezhnye	21. Lipetsk (Russia)	22. Astrakhan' (Russia)	23. Kirov (Russia)	24. Kaliningrad (Russia)

	Chelny (Russia)				
25. Kaluga (Russia)	26. Orel (Russia)	27. Cherepovets (Russia)	28. Vologda (Russia)	29. Kostroma (Russia)	30. Yoshkar-Ola (Russia)
31. Syktyvkar (Russia)	32. Shakhty (Russia)	33. Balakovo (Russia)	34. Mykolaiv (Ukraine)	35. Poltava (Ukraine)	36. Chernihiv (Ukraine)
37. Rivne (Ukraine)	38. Ternopil' (Ukraine)	39. Luts'k (Ukraine)	40. G. Aberdeen (UK)	41. G. Luton (UK)	
<i>Growth set-back</i>					
1. G. Linz (Austria)	2. Homel' (Belarus)	3. Mahilëu (Belarus)	4. Vicebsk (Belarus)	5. Babruisk (Belarus)	6. Sarajevo (Bosnia and Herzegovina)
7. Sofia (Bulgaria)	8. Plovdiv (Bulgaria)	9. Zagreb (Croatia)	10. G. Béthune (France)	11. G. Taranto (Italy)	12. Voronezh (Russia)
13. Great Novgorod (Russia)	14. Belgrade (Serbia)	15. G. Barcelona (Spain)	16. Málaga (Spain)	17. G. Bilbao (Spain)	18. Valladolid (Spain)
19. La Coruña (Spain)	20. Kiev (Ukraine)	21. L'viv (Ukraine)	22. Kryvyi Rih (Ukraine)	23. Vinnytsia (Ukraine)	24. Chernivtsi (Ukraine)
25. Ivano-Frankivs'k (Ukraine)	26. Swansea (UK)				
<i>Recent resurgence</i>					
1. G. Charleroi (Belgium)	2. G. Liège (Belgium)	3. G. Valenciennes (France)	4. G. Rome (Italy)	5. G. Milan (Italy)	6. G. Turin (Italy)
7. G. Florence (Italy)	8. G. Venice (Italy)	9. West Midlands (G. Birmingham; UK)	10. South Yorkshire (G. Sheffield; UK)	11. G. Manchester (UK)	12. Plymouth (UK)
<i>Medium-term resurgence</i>					
1. G. Brussels (Belgium)	2. G. Antwerp (Belgium)	3. G. Ghent (Belgium)	4. G. Copenhagen (Denmark)	5. G. Lübeck (W. Germany)	6. West Yorkshire (G. Leeds-Bradford; UK)
7. G. Edinburgh (UK)					
<i>Long-term resurgence</i>					
1. G. Vienna (Austria)	2. G. Hamburg (W. Germany)	3. G. Düsseldorf (W. Germany)	4. G. Bremen (W. Germany)	5. Bielefeld (W. Germany)	6. G. Krefeld (W. Germany)
7. G. Kiel (W. Germany)	8. G. Berlin (E. Germany)	9. G. Amsterdam (Netherlands)	10. G. Rotterdam (Netherlands)	11. G. Hague (Netherlands)	12. G. Utrecht (Netherlands)
13. G. Oslo (Norway)	14. Bergen (Norway)	15. G. Porto (Portugal)	16. G. Basel (Switzerland)	17. G. London (UK)	18. G. Bristol (UK)
19. G. Belfast (UK)	20. G. Nottingham (UK)	21. Derby (UK)	22. G. Portsmouth (UK)	23. G. Blackpool (UK)	
<i>Continuous growth</i>					
1. Tirana (Albania)	2. G. Graz (Austria)	3. G. Salzburg (Austria)	4. Minsk (Belarus)	5. Hrodna (Belarus)	6. Brest (Belarus)
7. G. Nicosia (Cyprus)	8. Århus (Denmark)	9. G. Helsinki (Finland)	10. G. Tampere (Finland)	11. G. Turku (Finland)	12. G. Paris (France)
13. G. Lille (France)	14. G. Nice (France)	15. G. Toulouse (France)	16. G. Bordeaux (France)	17. G. Nantes (France)	18. G. Toulon (France)
19. G. Strasbourg	20. G.	21. G. Rouen	22. G. Nancy	23. G. Metz	24. G. Tours

(France)	Grenoble (France)	(France)	(France)	(France)	(France)
25. G. Montpellier (France)	26. G. Rennes (France)	27. G. Orléans (France)	28. G. Avignon (France)	29. G. Dijon (France)	30. G. Mulhouse (France)
31. G. Angers (France)	32. G. Cologne (W. Germany)	33. G. Frankfurt (W. Germany)	34. G. Stuttgart (W. Germany)	35. G. Nuremberg (W. Germany)	36. G. Bonn (W. Germany)
37. G. Karlsruhe (W. Germany)	38. G. Augsburg (W. Germany)	39. G. Aachen (W. Germany)	40. Freiburg im Breisgau (W. Germany)	41. G. Ulm (W. Germany)	42. G. Athens (Greece)
43. G. Thessaloniki (Greece)	44. G. Dublin (Ireland)	45. G. Naples (Italy)	46. G. Palermo (Italy)	47. G. Bari (Italy)	48. G. Catania (Italy)
49. G. Verona (Italy)	50. G. Padua (Italy)	51. Skopje (Macedonia)	52. G. Eindhoven (Netherlands)	53. G. Leiden (Netherlands)	54. G. Dordrecht (Netherlands)
55. G. Tilburg (Netherlands)	56. Warsaw (Poland)	57. Białystok (Poland)	58. G. Lisbon (Portugal)	59. Moscow (Russia)	60. Kazan' (Russia)
61. Togliatti (Russia)	62. Cheboksary (Russia)	63. Belgorod (Russia)	64. Sterlitamak (Russia)	65. Nizhnekamsk (Russia)	66. Staryi Oskol (Russia)
67. G. Madrid (Spain)	68. G. Valencia (Spain)	69. G. Seville (Spain)	70. Saragossa (Spain)	71. Palma de Mallorca (Spain)	72. Córdoba (Spain)
73. Alicante (Spain)	74. Vigo (Spain)	75. Gijón (Spain)	76. Vitoria- Gasteiz (Spain)	77. Oviedo (Spain)	78. G. Stockholm (Sweden)
79. G. Gothenburg (Sweden)	80. G. Malmö (Sweden)	81. G. Bern (Switzerland)	82. G. Zurich (Switzerland)	83. G. Geneva (Switzerland)	84. G. Lausanne (Switzerland)
85. Khmel'nyts'kyi (Ukraine)	86. Bila Tserkva (Ukraine)	87. G. Cardiff (UK)	88. G. Leicester (UK)	89. G. Hull (UK)	90. G. Brighton (UK)
91. G. Southampton (UK)	92. G. Bournemouth (UK)	93. G. Reading (UK)	94. Medway (UK)		

Note: G. – “Greater”.

NOTES

ⁱ “From a conceptual viewpoint, the work on stages of urban development seems mainly to be indifferent as to whether specification is in employment or population terms. The empirical work is all but exclusively in terms of population ... there can be no doubt that at all stages (of urban growth and decline) there is causal interaction between population and employment movement” (Cheshire and Hay, 1989, p.31; see also OECD, 1983 and Glaeser and Gottlieb, 2006).

ⁱⁱ Population movements *within* cities (such as suburbanisation) are less strongly related to employment shifts, but our main concern is with change at the level of the city as a whole. One of the reasons why changes in city-level population over time may not coincide exactly with changes in employment is pure demographic change, namely differential birth and death rates in different places. A second reason is that there are a variety of constraints and consequential time lags on the capacity of the population to adjust to economic change through migration. Third, some forms of migration reflect non-employment factors, such as quality of life and/or cost of living, especially for people outside the workforce, including those who have retired or who are unable to work through illness or disability.

ⁱⁱⁱ Of course none of this is inevitable since migration may also involve people who are economically inactive, including those who are retired, studying or have domestic responsibilities.

^{iv} The ‘economic core’ was defined as the West European cities (with at least 200,000 people) included in the 50 most prosperous regions (NUTS-3) in 2002, based on Eurostat 2005 and regional GDP data for Iceland, Switzerland, and Norway.