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The trajectories of European cities, 1960–2005

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Cities have been viewed for several decades as the places within Europe typically facing the greatest problems associated with economic and population decline. A contrasting view has emerged recently that identifies cities as sites of economic dynamism and social vitality. The paper offers evidence on population change for 310 cities across the whole of Europe to assess how their fortunes have changed over the period from the 1960s through to 2005. It reveals considerable diversity of experience, with one in seven cities described as resurgent on a strict definition of decline followed by growth. They are outnumbered by cities that have experienced continuous growth and those that have had a recent downturn. Taking a long-term overview, the growth of European cities has generally slowed over the last few decades. A short-term perspective suggests something of a recovery within the last five years. Growth and revival are more common in Western Europe and decline is more widespread in the East. The position of larger cities also appears to have improved slightly relative to smaller cities.
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Introduction

For many years cities were identified as the places within Europe typically facing the greatest economic and social problems. Large-scale deindustrialisation and deconcentration of jobs and population put strains on urban communities and public authorities. The research and policy discourse was dominated by the idea of urban crisis and decline (for example, Van den Berg et al., 1982; Begg et al., 1986; Cheshire and Hay, 1989). Some commentators viewed cities as remnants of an industrial era when transport costs were high, supply chains were local and people lived close to work. In a post-industrial world of low communication costs, people and firms preferred to locate where property was cheaper, congestion lower and environmental quality higher (Pascal, 1987; Garreau, 1991).

A contrasting view has emerged recently that identifies cities as sites of renewed economic dynamism and engines of national prosperity (OECD, 2001; Buck et al., 2005; Parkinson et al., 2006). They are seen as sources of innovation and productivity growth in advanced economies dependent on high order business services, research-intensive universities and firms competing and collaborating through face-to-face contact. Cities are also believed to contain the social infrastructure, amenities and career choices to help countries to attract population, particularly groups with the specialised skills and creative talent required to generate and exploit knowledge, and thereby secure competitive advantage (Glaeser et al., 2001; Florida, 2004; Storper and Manville, 2006).

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 (Buck et al., 2005). Researchers have been more cautious about heralding a new era for cities. A special issue of the journal *Urban Studies* was

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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 change in the fortunes of cities, both in relation to past trends and smaller settlements. A preliminary attempt is also made to assess whether there are any obvious attributes associated with urban growth, such as city size and location. These have been key discriminators in the US and UK contexts for several decades. The counter-urbanisation literature found that city size was negatively related to city growth during the 1970s and 1980s, and arguments to the contrary have emerged recently. Cities are defined as continuous built-up areas, in line with established practice (this is discussed further in [Appendix A](#)). The main indicator is population change, partly because consistent economic data across space and time is unavailable at this scale in Europe, and because population is linked with economic change, both as cause and effect, especially over the longer-term.

The paper begins with a brief review of previous comparative research on European cities, followed by a comment on population as an indicator of urban change. It then assesses aggregate patterns of population change across 310 cities with over 200,000 inhabitants in 36 European countries over five-year periods from 1960 through to 2005. Europe is defined as the physical continent to include countries in Western and Eastern Europe. Subsequent sections consider the differences between cities and the final section draws conclusions.

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 shorter 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.

After a decade without any large-scale analysis of this kind, the European Commission published a report based on their Urban Audit that examined conditions across an assortment of 258 cities in 27 countries for the five-year timeframe 1996–2001. Their conclusions were rather limited, with the main finding that contemporary population trends are very diverse, covering the full spectrum from rapid growth to steep decline. Furthermore, “the disparities between cities are far greater than the differences between regions or countries” (European Commission, 2006a, p. 4). There was no assessment of the overall direction of urban change and whether the prospects were positive or negative. There was also no attempt to categorise cities according to their different trajectories or to examine the reasons for these differences.

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

Population as an indicator of urban change

Population is used as the main indicator of city trajectories partly for reasons of data availability and

consistency with previous research.¹ Obtaining reliable economic statistics on cities across Europe is much more difficult. The main complication in obtaining basic demographic data is inconsistent city boundary definitions. Appendix A describes the detailed procedures followed, using available national datasets or estimates by the authors based on them. Population can also be justified as a useful indicator of changing urban conditions, although obviously it does not provide a full picture of urban change.

First, population change is an important *consequence* of urban conditions, especially the availability of economic opportunities (Salt and Clout, 1976; Green and Owen, 1995; Champion and Fisher, 2004; Storper and Manville, 2006).² Migration is a response to differences in employment or the quality of life between places, even if the process of adjustment is inefficient. The bigger the differences, the more worthwhile it may be to move, subject to barriers such as distance, legal restrictions, housing constraints and information on the opportunities available. The propensity of people to move is affected by their age, qualifications, financial resources and sense of attachment.

Second, population change is also an important *influence* on urban economic conditions (Glaeser et al., 2001; Glaeser, 2005; Florida, 2004; Krugman, 2005). There is evidence that sheer population size and deep labour pools increase agglomeration economies and productivity (Rosenthal and Strange, 2004; Rice et al., 2006). Loss of population has certainly caused wider economic and environmental problems for cities (Cheshire and Hay, 1989; Begg et al., 1986). Shifts in the level of population affect local jobs through demand for consumer goods and services, housing, schools, etc. Changes in working age residents also affect the supply of skills, which may influence mobile investment decisions. The composition of the new population is bound to have an important bearing on the scale and nature of the economic impact.

¹ “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; Carlini and Mills, 1987; Glaeser and Gottlieb, 2006).

² Population movements *within* cities (such as suburbanisation) are less strongly related to employment shifts, but our concern is with change at the level of the city as a whole. One of the reasons why city population changes may not correspond exactly to changes in employment is pure demographic change, namely differential birth and death rates. A second reason is that there are a variety of constraints and time lags affecting 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 who have retired or who are outside the workforce through illness or disability.

These interactions may be becoming more important with higher incomes and rising personal mobility. Falling household sizes may enable higher mobility because people have fewer dependents. Higher incomes and mobility may mean that the quality of life features more strongly in comparative urban change. Pressures to migrate from some regions have also increased with the loss of jobs in agriculture, mining and manufacturing industries as a result of rising productivity and intensified international competition. And falling barriers to international migration within the enlarged European Union are making it easier for people to move between European countries. Previous studies devoted very little attention to international migration.

Several questions for examination arise out of this discussion. First, has the trajectory of European cities changed in recent years, perhaps because of stronger economic and demographic forces for concentration, such as the growth of service industries and smaller households? Second, have the fortunes of big cities altered more than smaller cities, perhaps because of the larger scale of opportunities and amenities available to firms and people, or is city size still negatively related to city growth because of counter-urbanisation? Third, have cities with a sunnier climate (a measure of the quality of life) grown more than cities

elsewhere? Finally, have Western European cities fared differently from those in the East because of the major political and economic upheavals in the latter?

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 more comprehensive in covering all 310 cities (in 36 countries) with over 200,000 inhabitants in 2000 (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. The two halves of Europe are defined in *Appendix A*.

The starting point is whether cities are growing or declining in absolute terms, and whether the balance has changed in recent years. The notion of revival implies 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, per-

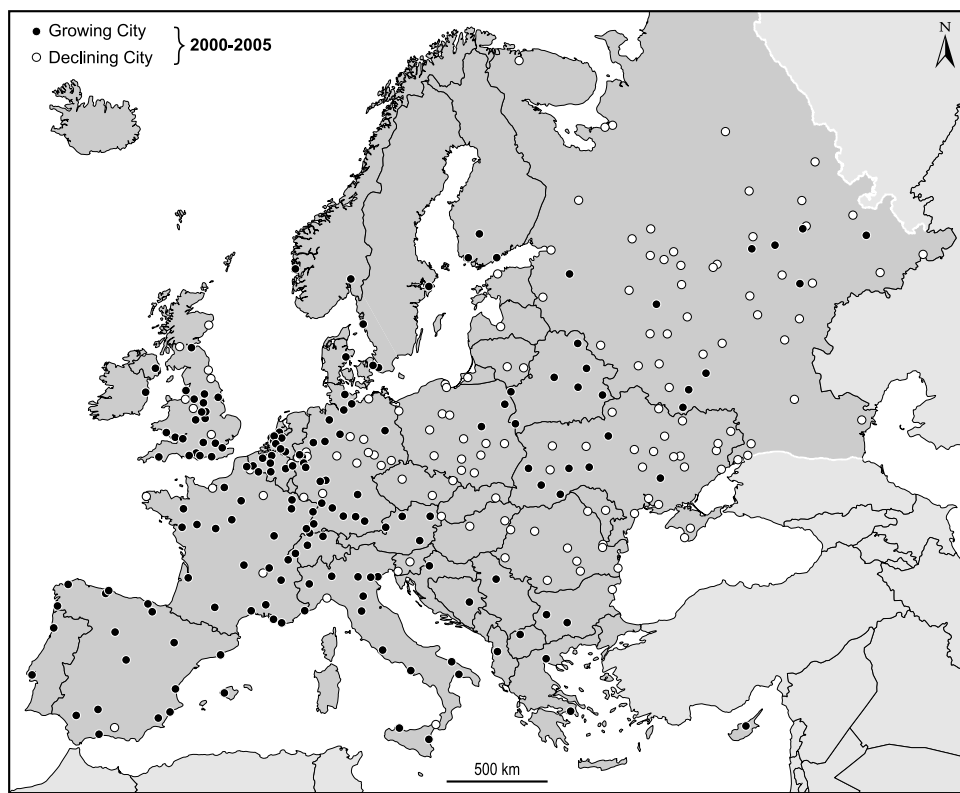


Figure 1 Recent trajectory of cities included in the study.

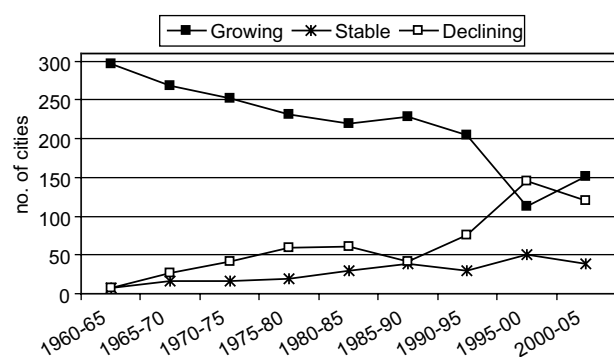


Figure 2 The number of growing, declining and stable cities, 1960–2005. *Note:* The ‘stable’ group includes cities with a $\pm 0.11\%$ arithmetic mean change in population per year (i.e. $\pm 5\%$ absolute population change between 1960 and 2005).

haps for the first time in several centuries. This consistent downward trend belies the suggestion of a general turnaround in the fortunes 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.

Absolute population growth is a demanding test of urban fortunes since it is also affected by wider demographic trends, and it is widely known that the natural rate of 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 urban trends. 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 than cities growing more slowly. It may have been accurate to describe most cities as ‘engines of growth’ during this era since they were drawing resources to them and

growing more strongly than other places. The increase in city populations 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; Van den Berg et al., 1982; Fielding, 1993). It was influenced by ‘push’ factors, such as the transfer of population out of agriculture, as well as the positive attractions of cities in economic and other respects.

Table 1 also shows that the proportion of cities that were growing faster than their nations fell during the subsequent three decades until the late 1990s, when for the first time there were more cities lagging than leading national trends. This is consistent with Figure 2. Indeed the implication is slightly worse, with rather more declining cities and fewer growing cities. Both relative and absolute figures suggest that the late 1990s was the worst period for European cities as a whole, with decline most widespread. There was a slight improvement in the first few years of the new millennium, although there were still more cities in relative decline than growing.

The absolute rates of growth for cities and their nations are also shown in Table 1. During the early 1960s, cities were growing at nearly three times the rate of their national populations, indicating 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 and 05, but cities were still growing more slowly than their national populations.

The relative position of cities over time can also be simply illustrated by the share of the population living in these places. Figure 3 shows the increasing proportion of Europe’s total population living in the 310 cities. Their share rose steadily during the 1960s and 1970s, but then stabilised to peak at just over 37% in 2000.

Figure 3 shows a big difference between Western and Eastern Europe. The proportion of Western Europe’s population living in cities of over 200,000 peaked in 1970 at over 43% and then fell back slightly. The proportion of Eastern Europe’s population in cities started from a much lower level and rose steeply until it reached just over 30% in 1990.

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
Number of growing cities ^a	241	243	226	215	190	185	165	128	145
Number of declining cities ^a	69	67	84	95	120	125	145	182	165
Average annual city pop. growth rate ^b	2.87	2.57	2.32	1.42	0.97	0.76	0.30	–0.13	0.09
Average annual national pop. growth rate ^b	1.08	0.82	0.76	0.58	0.59	0.43	0.01	0.02	0.15

^a 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).

^b These average figures are unweighted.

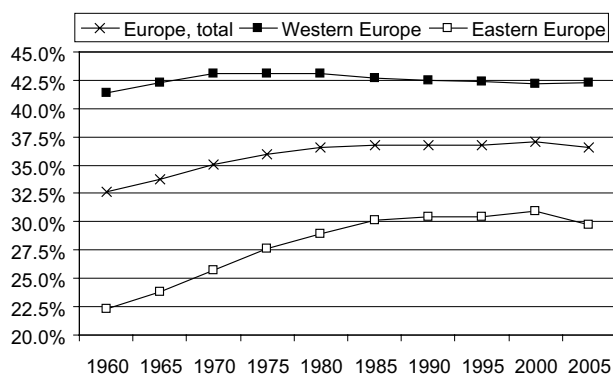


Figure 3 Proportion of the population living in Europe's 310 largest cities, 1960–2005.

It then stopped rising, partly because of the economic and political difficulties across the region at the time (Treivish et al., 1999; Nefedova and Treivish, 2003). It also stabilised at a much lower level than in the West. The proportion of people living in 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 responsible for the relative downturn in Europe's city population since 2000.

The broad message is that the decline in city growth rates since the 1960s seems to be more the result of a falling rate of urbanisation than wider demographic change, such as a slowdown in the birth rate. Put simply, the overall pattern for European cities appears to be long-term slowdown or stagnation rather than revitalisation. It may be that the diminishing agricultural population in many countries by the 1980s and 1990s meant fewer people seeking to move to cities, and/or that a weakening urban economy meant fewer opportunities available for people to take up.

Different trajectories of change

The next step involves unpacking the aggregate pattern of change to explore the extent of diversity among cities and to examine their different trajectories. We define 'resurgence' in a straightforward way as a period of population decline followed by a period of population growth (see Beauregard, 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 a downturn, or a period of continuous growth or decline.

Figure 4 shows the nine most common trajectories in schematic form. The categories are mutually exclusive and are distinguished only by 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

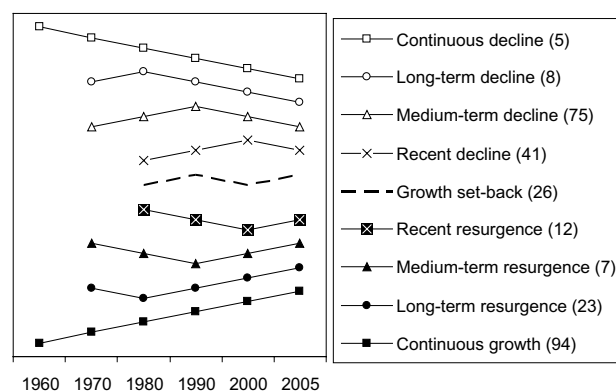


Figure 4 Trajectories of individual cities, 1960–2005.

durations of decline or growth and are specified on the basis of less than 45 years in order to keep down the number of unclassified cities. 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 the nine trajectories. The 19 unclassified cities followed more complicated or volatile patterns of change. The number that followed each recognised trajectory is shown in the key to Figure 4 and the individual cities are listed by country in Appendix B.

The most common profile, followed by 30% of cities, was continuous growth. There were 20 French cities in this group (67% of all French cities in the dataset), 11 from Spain (61% of Spanish cities) and 10 from Germany (36% of former West German cities). The second most common trajectory, with 24 per cent of 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 (49% of Russian cities), 17 from Ukraine (55%), eight from Poland (50%) and six from Romania (55%). The third most common pattern, with 13% of 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 (32%), six from Ukraine (19%) and six from Poland (38%).

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

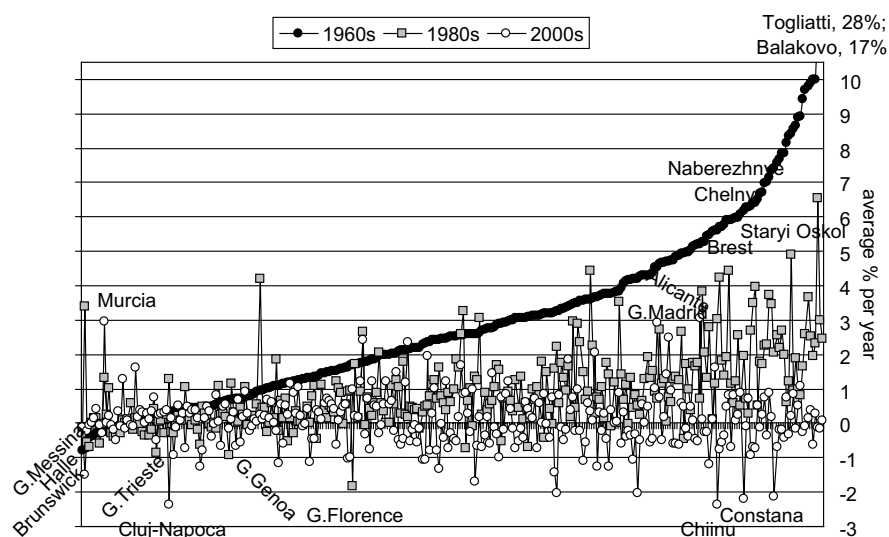


Figure 5 Average growth rate of cities during different time periods. *Note:* the chart shows the growth rate of each city in the 1960s, 1980s and early 2000s, scaled by its growth rate in the 1960s.

turned around during the 1980s. Of these 42 resurgent cities (14% of all cities), 13 were located in the UK (45% of all UK cities), seven in former West Germany (25%), five in Belgium (100%) and five in Italy (31%).

The discontinuous trajectory in the middle of *Figure 4* 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).

Figure 4 confirms considerable diversity of experience among cities. There is a large group that have had long-term growth and another large group that have had a downturn since 1990. The number of resurgent cities is modest. One in seven cities has had a positive turnaround since 1980 and one in 16 since 1990.

Another important observation is that national distinctions seem to matter. There appear to be big differences between cities in different countries, suggesting that national economic conditions, settlement structures and/or governance arrangements play a part in shaping their trajectories. Among the countries with more than six cities, those in France and Spain are most likely to have experienced long-term growth. Cities in Russia, Poland, Ukraine and Romania are most likely to have had a downturn since 1990. Cities in Belgium and the UK are most likely to have experienced a positive turnaround.

A consistent pattern of slowdown

One of the reasons for the limited number of resurgent cities may be the level 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 reason for this may be 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.

The remaining sections consider whether there are any other obvious factors that may be associated with variations in the fortunes of cities, such as city size.

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, physical constraints on land availability and planning restrictions on peripheral urban expansion 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, new urban theories suggest that big cities are now better placed than smaller settlements because of the larger scale of opportunities, amenities, infrastructure and skills available to firms and people (Buck et al., 2005).

Figure 6 shows the average rate of population growth for cities of different sizes between 1960 and 2005. The growth of 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 consider-

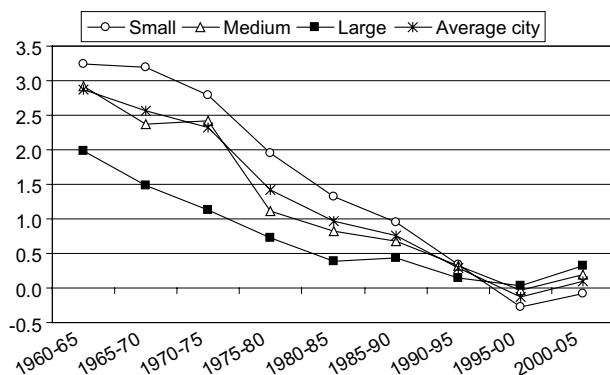


Figure 6 Population growth rates for cities of different sizes, 1960–2005. *Note:* Small cities are defined as between 200–400,000 population; medium cities are 0.4–1 m; and large cities have over 1 m population.

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

ably 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, while small cities slowed even more steeply between the 1970s and 1990s. Small cities have actually experienced contraction 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.

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 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.

The evidence of a reversal in the relative position of large and small cities is important and worth

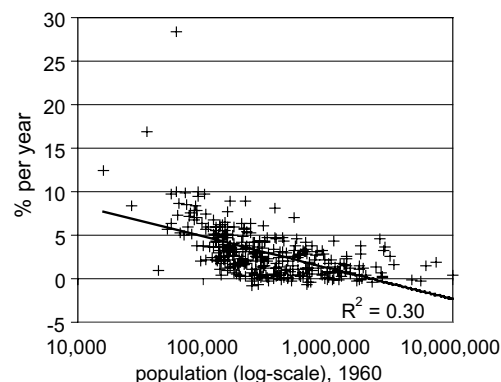


Figure 7 Relationship between city size and growth rate, 1960–70.

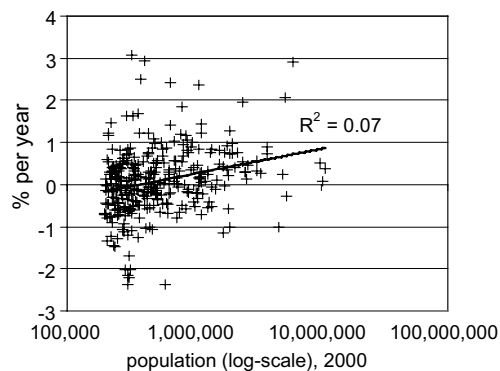


Figure 8 Relationship between city size and growth rate, 2000–05.

investigating further. A simple method is to correlate city size and population growth rate at the beginning and end of this era. *Figures 7 and 8* show this relationship in the 1960s and four decades later between 2000 and 05. 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.

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 agricultural population is larger, given the general structural shift in employment from agriculture towards industry and

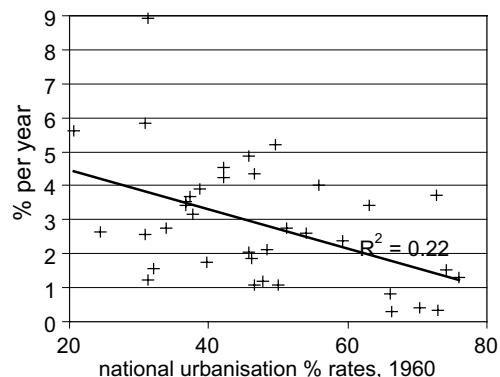


Figure 9 Relationship between urbanisation and city growth rates, 1960–70.

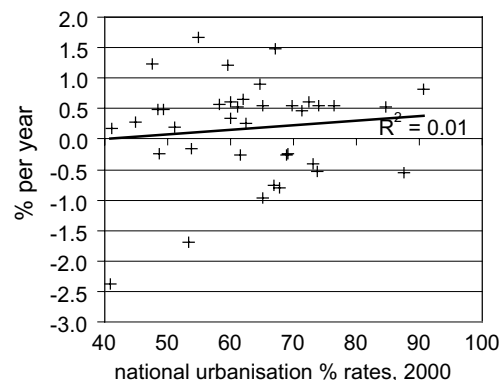


Figure 10 Relationship between urbanisation and city growth rates, 2000–05.

then services as economies modernise and mature (Rowthorn and Wells, 1987).

Using United Nations 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 and 05. 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 Szelényi, 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 Szelényi, 1998; Medvedkov and Medvedkov, 1999).

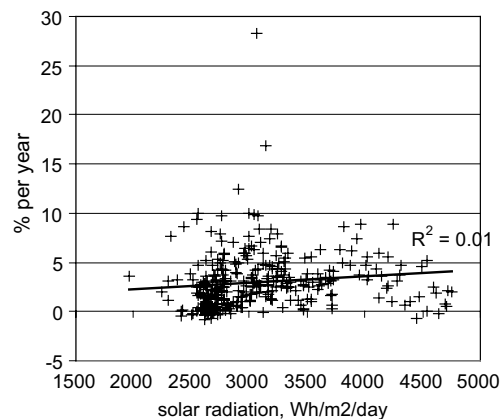


Figure 11 Relationship between solar radiation and city growth rate, 1960–70. *Note:* Solar radiation is expressed in watt-hours per sq. metre per day. *Source:* European Commission (2006b).

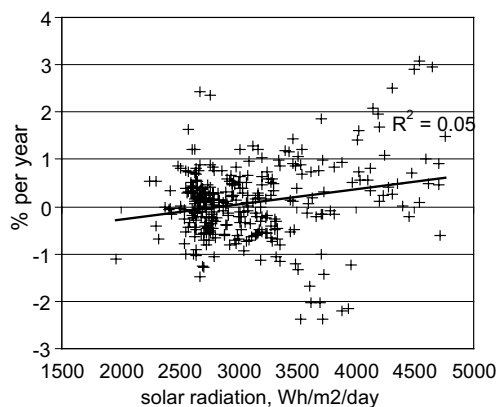


Figure 12 Relationship between solar radiation and city growth rate, 2000–05. *Note:* Solar radiation is expressed in watt-hours per sq. metre per day. *Source:* European Commission (2006b).

The significance of climate

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 (Carlino and Mills, 1987; Glaeser et al., 2001; Florida, 2004). 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, based on data from the European Commission (2006). There is no significant relationship between the two variables and this has not changed over the last four decades. Cities with high levels of solar radiation (generally southern Europe) have not grown any faster or slower than cities with low levels. Of course this is not a complete measure of climate. For example, seasonal factors may be relevant with longer daylight hours in northern Europe in summer offsetting the attractions of sunnier cities to the south. It is also a narrow measure of the quality of life since it excludes social and recreational amenities.

Differences between Western and Eastern Europe

Important differences between Western and Eastern European cities are already apparent from the above discussion. *Figure 13* 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

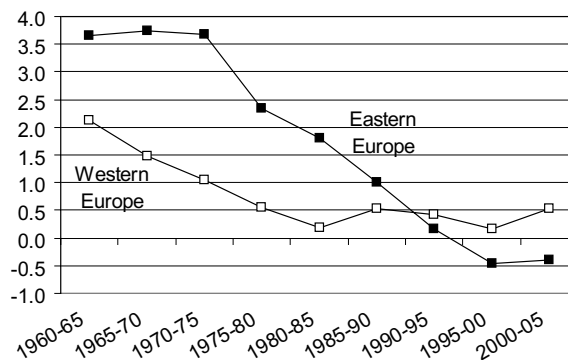


Figure 13 City growth rates in Western and Eastern Europe, 1960–2005.

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 1* showed a big contrast between East and West in the incidence of growing and declining cities between 2000 and 05. No less than 78% of cities in the West were growing during this period, while 82% of cities in the East were declining.

Conclusions

A simple question was posed at the outset – whether there has been a change in the fortunes of European cities, possibly 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, 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 cities turned around during the 1980s, so the occurrence of urban revitalisation is not merely a recent phenomenon.

One of the basic reasons there are not more resurgent cities is that nearly a third of all cities have been growing continuously. The sheer extent of long-term city growth, especially in Western Europe, indicates that absolute urban decline has only affected a minority of cities here, although the diminishing rate

of growth of these cities since the 1960s 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 more restricted than the phenomenon of negative turnaround, especially in Eastern Europe. These declining cities contradict notions of a generalised urban revival in Europe.

Considering the cities that are growing more slowly together with those that are now declining leads to the conclusion that the fortunes of most cities have actually waned over the last three decades, both in relation to their past trajectories and relative to smaller urban and rural areas. In addition, the average growth rate across all 310 cities (measured in absolute terms and relative to their national averages) has slowed considerably since the 1960s and 1970s. Cities are growing on average, but at a 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 that are growing. Both indicators suggest that the late 1990s was the worst period for European cities overall, and that the population has been rising since around 2000.

The turn of the millennium may transpire to be an important turning point, although past experience suggests caution about heralding a new urban era. Some parts of Europe have been there before. The average growth rate of Western European cities recovered in the late 1980s following the nadir in the early 1980s, but there was a setback in the 1990s. It is too soon to be confident that the very recent increase 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. The average growth rate of large cities also exceeds that of small cities, although it is still low by historical standards. It appears that the strong net domestic 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 full explanation for these findings is beyond the scope of this paper. Lower urban employment levels are 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 in some countries that this was linked with deindustrialisation and deconcentration of economic activity (Begg et al., 1986; Breheny, 1999; Turok and Edge, 1999). There may also be continuing independent forces for deconcentration of population, including household preferences for more space, gardens and access to the countryside. Compared with the 1960s and 1970s, a smaller agricultural workforce has reduced

the rural population that once sought work in the cities.

A more recent contributory factor in the wealthiest cities may be higher productivity levels and innovation leading to higher workforce incomes, but without equivalent growth in jobs, and therefore not causing strong population growth. Time lags may be important elsewhere: the conurbations of Glasgow, Merseyside and Tyne and Wear have experienced higher employment over the last decade, but demographic trends have not caught up (Parkinson et al., 2006; Turok and Bailey, 2004). This apparent discrepancy 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.

Another challenge is to better understand the implications of the recent population increase in some cities, especially the larger ones in Western Europe. At least part of the reason for the growth in cities such as London, Milan, Turin, Brussels, Birmingham and Manchester is international migration, mostly from beyond Europe but probably from Eastern Europe too. It is well known that immigrants tend to go to places where earlier incomers live, which usually means cities (OECD, 2006). Hence, city growth may be driven by ‘chain’ migration, whereby inflows of migrants reinforce existing settlement patterns. Most incomers are also of childbearing age and many come from cultures with higher birth rates, so they give a further boost to the population through their children. One of important questions arising is whether this increase in population contributes to self-sustaining economic growth? The stimulus to cities may be limited if the migrants are not integrated into the labour market. It may prove short-lived if the indigenous population move out of the cities or if the migrants follow the residential preferences of locals and increasingly disperse to other places.

Acknowledgments

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Appendix A. Methods and sources

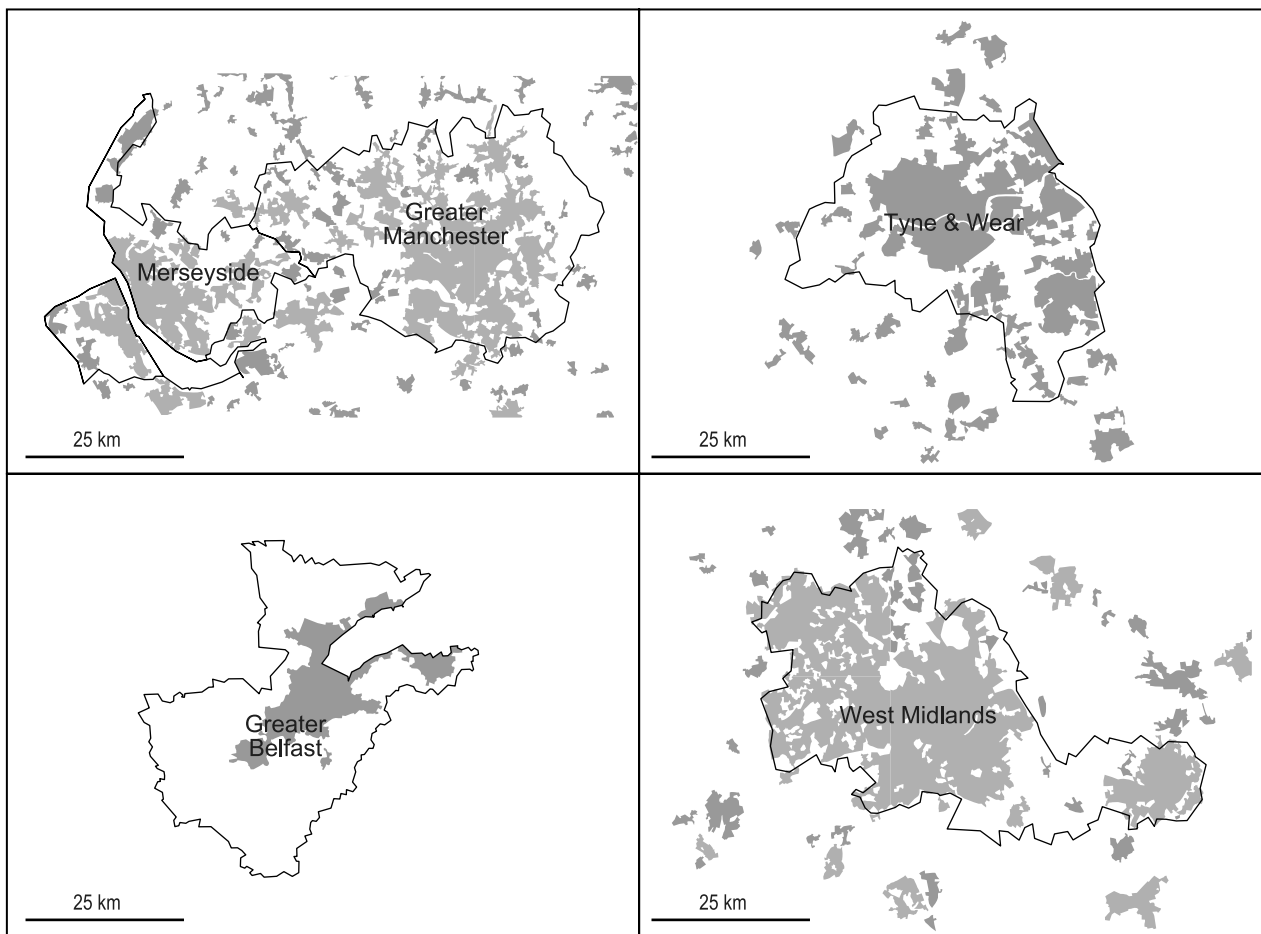
This note describes the procedures followed to define consistent spatial units and to identify suitable data sources for analysing long-run European city trajectories.

Definition of the city

The extensive temporal and geographical scope of the analysis meant that cities had to be defined clearly and consistently in terms of internal structure, external boundary and size thresholds. The relevant concept is 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 definition (the *de facto* city) rather than an administrative or legal one (the *de jure* city) (Parr, 2007). It covers the continuous or near-continuous territory devoted to land uses such as housing, industrial and commercial activity, transport, education and other public services and spaces. In larger urban areas it is equivalent to the idea of a conurbation or metropolitan area. The concern is 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 or falling household size and people choosing to live at lower densities in the suburbs.

The task was simplest 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.

In the other countries we had to construct continuous built-up areas ourselves. Since different national and international data sources were used, the basic geographical building blocks had to be simple and broadly comparable. The spatial units



Map A.1 Examples of different city definitions.

with the most readily available data are local authorities. 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.

The size threshold was cities with a population of over 200,000 in the year 2000, or the closest available year, using population census data. This figure is inevitably somewhat arbitrary, although it accords with several previous studies, as does the timing of its application (towards the end of the time series) (van den Berg et al., 1982; Cheshire and Hay, 1989). At least three previous studies 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.

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). 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 (Brinkoff, 2006), the European Urban Audit (European Commission, 2004) and the recent State of the English Cities report (Parkinson et al., 2006). Brinkoff'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. The Urban Audit is based on a sample of cities within each country and the lower size threshold varies between countries.³ Brinkoff'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 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 can be very much larger than built-up areas because they include the commuter hinterlands of employment centres, including satellite towns. This is a useful concept for capturing the economic interactions between the city and its surrounding territory. However, it is a region and not a city. 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 (Parr, 2007). The definition of travel-to-work areas is also technically demanding and requires regular updating in the light of changing commuting patterns. Consequently the task has been completed in very 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 compara-

³ The Urban Audit (European Commission, 2004) aimed to include 258 cities in 25 EU member states and 2 applicant countries with data at three points in time (1991, 1996, and 2001). By June 2006, this full series of population data was available for 174 cities and partial data for another 72 cities. Of these 246 cities, 139 had a population above 200,000, 70 had between 100 and 200,000 and 37 had less than 100,000. The smallest settlement was Campobasso in Italy with 50,752 residents in 2001. All 139 of the Urban Audit cities with over 200,000 people were included in the database of 310 cities that we assembled.

ble 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, pp. 24–25). The indiscriminate use of NUTS-3 regions as the building blocks for every city raises bigger 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 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 (10.6 m), Greater Moscow (10.4 m) and Greater Paris (9.6 m) 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 (56), Serbia and Montenegro (1), Slovakia (2), Slovenia (1) and Ukraine (31).

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: 56 of its cities located within the physical entity of Europe were included and 36 cities located in Asia were excluded. Oral and Atyrau –

Kazakhstan’s two cities situated on the Ural River, the traditional physiographic boundary between Europe and Asia, were below the 200,000 population size threshold.

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.⁴ 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.ec.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 redrawing 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 for-

⁴ This figure includes the statistical agency of the former GDR as well as separate general register offices for Scotland and Northern Ireland.

mulas 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

Continuous decline

- | | | | | |
|------------------------------|-------------------------------|-----------------------|--|---|
| 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) |
|------------------------------|-------------------------------|-----------------------|--|---|

Long-term decline

- | | | | | | |
|------------------------------|----------------------------|--|------------------------------|--------------------------------------|-----------------------------|
| 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) | | | | |

Medium-term decline

- | | | | | | |
|--|------------------------------|-----------------------------------|-------------------------------------|----------------------------|---|
| 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. Łódź (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. Dnipro
dzerzhyn'sk
(Ukraine) | 74. Kirovohrad
(Ukraine) | 75. Kremenchuk
(Ukraine) | | | |

(continued on next page)

Appendix B (continued)

Recent decline

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 Chelny (Russia)	21. Lipetsk (Russia)	22. Astrakhan' (Russia)	23. Kirov (Russia)	24. Kaliningrad (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)	

Growth set-back

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)				

Recent resurgence

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)

Medium-term resurgence

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)					

Long-term resurgence

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)	

Continuous growth

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 (France)	20. G. Grenoble (France)	21. G. Rouen (France)	22. G. Nancy (France)	23. G. Metz (France)	24. G. Tours (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)

Appendix B (continued)

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. Thessaloníki (Greece)	44. G. Dublin (Ireland)	45. G. Naples (Italy)	46. G. Palermo (Italy)	47. G. Bari (Italy) (Netherlands)	48. G. Catania (Italy)
49. G. Verona (Italy)	50. G. Padua (Italy)	51. Skopje (Macedonia)	52. G. Eindhoven	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”.

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