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Cities in Transition:

East European Urban Trajectories 1960-2005

Vlad Mykhnenko* and Ivan Turok

Centre for Public Policy for Regions (CPPR)

University of Glasgow

* Corresponding author: Vlad Mykhnenko (Vlad.Mykhnenko@lbss.gla.ac.uk),

CPPR, Ivy Lodge, University of Glasgow, 63 Gibson Street, Glasgow G12 8LR

ABSTRACT

The paper examines the long-term population trajectories of East European cities and analyses how their fortunes have changed, both in relation to their past growth profiles and to other settlements. The main finding is that the absolute and relative positions of cities have declined sharply since the 1960s and 1970s. During the last decade the population of three-quarters of cities has been contracting, and slightly faster on average than the overall population. The immediate explanation for the downturn appears to be general demographic decline, including a fall in the fertility rate and international out-migration, rather than specific urban factors. Some places have fared less badly than others, including many of the capital cities and the principal centres of rural regions.

KEY WORDS

City trajectories; Population change; Eastern Europe; Transition; Declining cities.

1. INTRODUCTION: A TURNAROUND FOR EAST EUROPEAN CITIES?

Eastern Europe has been through a turbulent period of transition since 1989. The dismantling of the apparatus of state socialism in favour of a market-oriented system was accompanied by sharp economic decline and rising inequality (Campos and Coricelli, 2002; Lane, 2002). By the turn of the millennium, however, all East European economies were growing again and by 2005 they had all recovered to their previous levels of national output or were catching-up fast. They were applauded for their 'tiger-like' dynamism (Kraske and Puhl, 2005), supposedly propelled by pro-business flexibility and low taxes (Åslund, 2004; Economist, 2005; Smith, 2005).

One of the manifestations of recovery has been a construction boom fuelled by rising property prices and speculative investment (Badyina and Golubchikov, 2005; Fawkes, 2007; Tasan 1999). This is one of the factors that have helped the largest cities to move up various world city league **Table**s (Taylor, 2006). Moscow, St. Petersburg, Kiev, Bratislava, Prague, Warsaw, Ljubljana, Tallinn, Budapest, Bucharest, Riga, Sofia and Vilnius have all appeared recently among the world's richest and most expensive big cities (Mercer, 2006; UBS, 2006). Smaller, previously neglected East European cities have also been losing their "dead-end feel" (Buckley, 2006; Condon, 2005).

The potential of East European cities has also been boosted by a 'new conventional wisdom' within the international policy community identifying cities as engines of growth and cohesion (Berg *et al*., 2004; Buck *et al*., 2005; OECD, 2006; Parkinson *et al*., 2006). In a special report for the European Council and Parliament paving the way for the Structural Funds 2007-2013, cities were heralded as drivers of development:

> Cities are home to most jobs, firms and institutes of higher education and their action is decisive in bringing about social cohesion. Cities are home to change based on innovation, spirit of enterprise and economic growth (European Commission, 2006, p. 6).

The image of revitalised cities in the former Eastern Bloc has influenced academia too. A special issue of the *International Review of Sociology* devoted to the theme of 'Capitals of Eastern Europe' was published in July 2006. In its major scholarly statement entitled 'The Comeback of the European Cities', a comprehensive resurgence was said to be taking place:

> The city is being reborn ... The eastern European revolution was … the beginning of a dramatic re-urbanisation […] Over the last two decades … we are observing the re-establishment of the city as a life-form with a civic-civil shape, and … we are in the process of reforesting the de-urbanised wastelands of the twentieth century (Schlögel, 2006, p. 471, 480-1).

There is a range of symptoms cited for this revival, including many social, cultural and symbolic changes. The property boom is usually taken to be most definite sign of renewed economic vitality. According to one typical account, East European city centres and building sites illustrate the main flows of urban energy in the region with the construction of new transport infrastructure (airports, ports and train stations), new housing choices ("villas in the new privileged neighbourhoods or the lofts and renovated old flats in the centres") and "the new needs: malls, shopping centres, drive-ins, fitness centres, gated communities, banks, offices of all kinds, hotels, entertainment worlds" (Schlögel, 2006, p. 481).

The purpose of this paper is to offer original evidence from across Eastern Europe relating to arguments about the revival of cities. The focus is on the fundamental processes of change rather than selective manifestations. 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. An attempt is also made to assess important propositions about the nature of the transformation since 1989, including the reasons why some places have fared better than others.

Cities are defined as continuous built-up areas in line with established practice. 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 review of previous accounts of urban change in Eastern Europe in order to identify propositions for assessment. This is followed by a comment on population as an indicator of urban change. Subsequent sections consider the aggregate patterns and then the differences between cities in the light of the propositions. The analysis is based on a unique, specially assembled dataset involving 150 cities with over 200,000 residents in 19 East European countries between 1960 and 2005.

2. CONSTRAINED CITY GROWTH UNDER STATE SOCIALISM

If it proves to be true, evidence of a city turnaround post-1989 would support a long-standing proposition about *under-urbanisation* in Eastern Europe, first put forward by the Hungarian academics Konrad and Szelényi (1977). They argued that the growth of the urban population under state socialism was much slower than the growth of urban industrial output and jobs because investment in production was promoted over urban infrastructure and housing (Pickvance, 2002; Szelényi, 1981). Whereas the Third World experienced *over*-urbanization as a result of limited industrial development and a shortage of jobs, Eastern Europe's *under*-urbanization was attributed to excessive industrialisation (Konrad and Szelényi, 1977, p. 157-158).

This idea was widely accepted by the end of the 1980s. The inherent investment bias towards heavy industry at the expense of 'non-productive' services, distribution and finance meant that central planners were forced to economise on infrastructure costs associated with urbanisation and consumption (Fuchs and Demko, 1979; Holton, 1984; Kennedy and Smith, 1989; Ofer, 1976). Comparisons of urbanisation levels in Eastern Europe with those elsewhere suggested that for a given level of economic development, state socialist societies had relatively small urban populations (Stuart, 1984).

Central planners also imposed deliberate restrictions on the growth of large cities in order to limit spatial imbalances and urban sprawl (Bialkovskaia and Novikov, 1983; Demidenko, 1980; Khorev, 1984). Although several Western authors have questioned the effectiveness of Soviet policies to redistribute population (Buckley, 1995), most agree that urban growth constraints did matter and that there were "pervasive differences between controlled and uncontrolled cities, the latter growing significantly faster in almost all cases" (Gang and Stuart, 1999, p. 117).

The main implication of the under-urbanisation thesis is that the population of East European cities was set to grow after 1989 (Kostinskiy, 2001, p. 463). Both push and pull factors would be involved. The ending of state farm subsidies and restrictions on agricultural imports would damage the rural economy, leading to a major 'land flight' of the rural poor to cities:

> The mismatch between rural infrastructure, developed according to the logic of state socialism, and economic – typically urban – opportunities, created by 'merchant capitalism', will find no easy solution and sooner or later may result in major geographic shifts of the population (Szelényi, 1996, p. 312).

Cities were also expected to grow as a result of changes in the industrial structure and the economic advantages of urban concentration for firms in service industries. Agglomeration economies and the benefits of spatial proximity for suppliers and buyers were either ignored by central planners or suppressed through large subsidies for production and transport. Therefore, big cities enjoyed no clear advantage under state socialism:

> Market services on the other hand (trade networks, financial services, others) typically enjoy scale advantages and serve mostly lateral links and networks. Therefore they tend to benefit from concentration in big cities. This suggests that as the structural distortion is reduced (from industry to services) there will be some correction in city size (Ickes and Ofer, 2006, p. 413).

The key proposition emerging from this literature is *re-urbanisation*. The demise of state socialism would remove artificial controls on city growth, release surplus labour from the countryside and enable productivity gains from agglomeration. This would result in migration from towns and rural areas and ensure the growth of city populations, both in relation to their historical trajectories and the rest of the country.

3. EXCESSIVE CITY GROWTH UNDER STATE SOCIALISM

There is a contrary proposition in the literature to the effect that state-sponsored industrialisation boosted the urban population artificially. The removal of such support post-1989 would result in the loss of industrial jobs in the cities and cause out-migration to towns and rural areas.

The thesis linking rapid industrialisation with large-scale urbanisation and the modernisation of state socialist societies was developed by Harris (1970) and Lewis and Rowland (1979), and later endorsed by East European scholars (Musil, 1980; Enyedi, 1992; 1998). Long before the idea of under-urbanisation, Harris (1945) described the Soviet Union as 'a land of great cities' and argued that urbanisation was bound up with centrally planned industrialisation. Subsequent authors have used the more judgemental terms 'over-industrialisation' and 'over-urbanisation' to describe a dual imbalance or distortion created under state socialism (Gornostaeva, 1989; Buckley and Tsenkova, 2004).

This idea was elaborated in a recent World Bank report on 'Cities in the Transition Economies' (Buckley and Mini, 2000; see also Tsenkova, 2006). This observed that Eastern Europe was the second most urbanized region of all those in which the Bank was involved, with an urban population of 67 per cent, close behind Latin America. Yet the nature of urbanisation was said to be very different from the rest of the world, having been inflated by a forced industrialisation policy rather than spontaneous productivity-led processes. All East European countries were categorised as over-urbanised, except Albania, and the urban population of the whole region should have been closer to 55 per cent. The report argued that:

> Just as many countries of the region may be considered 'over-industrialized', they may also be considered 'over-urbanised'. These countries have a much higher proportion of their population in cities than is the case in other countries with similar income levels (Buckley and Mini, 2000, p. 11).

The report envisaged that market forces unleashed after 1989 would close subsidised industries and correct the 'excessive urbanisation' and 'over-populated' cities. Heavily industrialised areas would be hardest hit. The roots of this analysis lay in the West, where shifts in competitiveness, technology and macro-economic policy since the 1970s have resulted in large-scale *de-industrialisation* (Martin and Rowthorn, 1986; Rowthorn and Wells, 1987). The decline of manufacturing jobs has had the biggest impact on industrial conurbations in Western Europe and the USA (Cumbers *et al*., 2006; Harrison and Bluestone; 1988; Turok and Edge, 1999). It was believed that the fate of East European cities would be similar:

> Many workers in these over-industrialized cities will 'vote with their feet' and move away from cities … To place their overall experience in context, it is akin to what occurred in the city of Pittsburgh in the United States which for many years lost population as the steel industry restructured … The traditional World Bank perspective – that urbanization will accompany, or even be a prerequisite, to realizing sustained growth – is not likely to apply in many of these countries (Buckley and Mini, 2000, p. 12).

The main proposition emerging from this literature is *de-urbanisation*. The end of state-sponsored industrialisation and greater openness to international competition would hit jobs in the cities and encourage people to move to towns and rural areas. City populations should therefore decline, both in relation to their historical trajectories and the rest of the country.

4. NATIONAL DEMOGRAPHIC DECLINE

The main source of population growth in East European cities in the decades before and after World War II was large-scale migration from the countryside (Lewis and

Rowland, 1979; Musil, 1980). Relatively high fertility rates were also important. By the end of the 1970s, rural-urban migration and fertility had declined considerably (Stuart, 1984). Lewis and Rowland (1979) noted that fertility in the European part of the USSR had fallen below the replacement rate and without significant migration from elsewhere, economic and social development would be compromised.

Since then, the United Nations Department of Economic and Social Affairs has argued that fertility in Eastern Europe has fallen below replacement rates to an extent that is "unprecedented in human history" (UNDESA, 2006a, p. xxi). Mortality "has been stagnant or even increasing, largely as a result of deteriorating social and economic conditions" (ibid, p. xvii). Combined with emigration, Eastern Europe faces "quite striking prospects" and is projected to lose about 25 per cent of its current population by 2050 (ibid, p. 9). UNDESA expects Russia, Ukraine, Belarus, Bulgaria, Romania, Latvia, Lithuania and Estonia to have some of the biggest demographic declines in the world. The main reason for the contraction between 1990-2005 in half of East European countries (Belarus, Bulgaria, Croatia, Czech Republic, Hungary, Russia and Ukraine) was more deaths than births. The main source of decline in the other half was emigration.

Emigration has only been recognised as a major demographic issue in Eastern Europe in the last few years. During the 1990s migration to Western Europe was not considered a very significant concern, especially compared with growing population pressures from the global South (Manfrass, 1992; Misiti *et al*, 1995). East-West migration was expected to increase, but the level would be modest and the composition "highly selective" in terms of skill and initiative (White and Sporton, 1995, p. 160). Migration discussions focused on the movements of Russian-speaking people between parts of the former USSR (Pilkington, 1998; Vitkovskaya, 1999).

Within the urban studies literature there has been little apparent awareness of the extent of natural change or international migration. Research has focused on internal migration patterns, especially suburbanisation and deconcentration in largest metropolitan areas since 1989 (Nuissl and Rink, 2005; Ott, 2001; Tammaru *et al*, 2004). Authors have been concerned with whether these trends will bring about inner

city decline on a par with what has happened in the USA (Rieniets, 2005). Emigration of urban residents to the West has only been discussed in the popular media to date (Cienski, 2006; Laitner and Wagstyl, 2004; Smee, 2006; Wheeler, 2006).

The central proposition emerging from this literature is generalised *demographic decline* associated with worse socio-economic conditions. A decline in the natural rate of population change and emigration would damage city trajectories along with other parts of the country. City populations should decline, both in absolute terms and in relation to their historical patterns and Western Europe.

5. DIVERGENT CITY FORTUNES POST-1989

The above propositions each imply a single dominant trajectory for cities after 1989. The underlying demographic and economic forces were thought to be common to most cities. Others have offered more variable accounts. Musil (1993) was the first to suggest 'path-divergence', namely that city trajectories would depend on the structural mix of their economies, given the decline of mining and manufacturing and the growth of services. Cities would also become more dependent on their internal economic, institutional, educational and physical assets and resources (see also De Melo and Ofer, 1999; Nefedova and Treivish, 2003; Sailer-Fliege, 1999; Treivish *et al*., 1999). Tsenkova and Nedović-Budić (2006) argued that post-1989 transitions to democracy, markets and decentralised government would become the major drivers of economic and social change in different places, eventually generating a 'mosaic of diverse urban experiences' across the region.

City fortunes were also expected to depend on their proximity to Western Europe. This was considered conducive to growth through access to prosperous markets and foreign investment, while peripheral cities in eastern areas were more precarious (Hamilton 1999; Iyer, 2003; Musil, 1993). Capital cities were also presumed to be the main beneficiaries of the transition to capitalism as preferred locations for high order business services, media activities and multinational offices (Brade and Rudolph, 2004; Hall, 1993; Therborn, 2006). Large cities would benefit from agglomeration economies (e.g. shared infrastructure, amenities and labour pool) and attract

disproportionate investment and migration (Musil, 1993, 2005; Ickes and Ofer, 2006). The main 'losers' were presumed to include small and medium-sized cities and conurbations dependent upon declining industries (De Melo and Offer, 1999; Kovács, 1999).

Hamilton (1999, 2005) argued that highly differentiated historical legacies of the communist and inter-war periods – the 'power of the past' – also lay behind divergent development. Variations in city growth were also supposed to reflect national trajectories. Rowland (1996, 1998) explained the fortunes of urban areas in the former Soviet Union by the performance of their national economies. East European urban typologies proposed by Hamilton *et al* (2005, p. 12-13) and Tosics (2005, p. 71-75) reflected national characteristics above all. Hamilton *et al* (2005) and Tammaru *et al* (2004) attributed the economic divergence between cities to their location in either 'leading transition countries' (i.e. 'fast-track' EU applicant states) or lagging regions elsewhere. The EU and NATO enlargement processes were believed to be significant exogenous drivers of economic success for individual countries and hence for their cities (Musil, 2005; Tsenkova and Nedović-Budić, 2006).

Evidence from the USA suggests that quality of life as reflected in the climate may be an increasing influence on growth in different places as people become more affluent and mobile (Florida, 2004; Glaeser *et al*., 2001). An additional source of population growth in Eastern Europe, especially for cities in European Russia, was expected to come from the decline of settlements in regions with severe climates (e.g. Siberia and Russia's Far East). Transformation would mean a withdrawal of subsidies to producers in these areas and hence a loss of jobs and livelihoods (Hill and Gaddy, 2003; Thornton and Ziegler, 2002). Large sections of the population would migrate in search of work to places with more moderate climates (Ickes and Ofer, 2006, pp. 413-414; Pivovarov, 2003, pp. 59-62).

Several propositions about *divergence* emerge from this literature. They stem from the premise that cities in transition would have to rely increasingly on their own resources, so that well-endowed and well-located cities would fare relatively well. The post-1989 change in individual city fortunes would be driven by differences in (i)

quality of life; (ii) size; (iii) political status; (iv) regional location; (v) industrial structure, and (vi) national economic and political conditions. Political capitals and large cities should benefit from advanced producer services and international connectivity. Cities closest to the economic, political and technological core of (Western) Europe should grow more strongly than those on the periphery. Cities in fast-growing economies should fare better than in slow-growing economies. **Table** 1 summarises these propositions.

6. METHOD

Population is used as the main indicator of city trajectories partly for reasons of data availability and consistency with previous research (Berg *et al,* 1982; Cheshire and Hay, 1989; Hamilton, 1979; Harris, 1970). The main complication in obtaining basic demographic data is inconsistent city boundary definitions.

The relevant concept of the city is the commonsense idea of a continuous built-up area larger than a certain population size. 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 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 a conurbation or metropolitan area. The concern is with change in the city as a whole, rather than particular parts. 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 definitional task was straightforward in most cases, since East European city boundaries have expanded progressively to reflect physical growth. Therefore, municipal authorities tend to cover spatial units that equate with continuous built-up areas. Cities were defined as settlements with a population of over 200,000 in the year 2000, using population census data. The 200,000 threshold 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). In six cases where the administrative

Table 1: Summary of propositions

Proposition	Absolute or relative change	Main demographic mechanism(s)	Main economic mechanism(s)
1. **Re-urbanisation**: cities should fare better than they did before, and better than the rest of the country post-1989, with a growing population	Relative growth	Rural/town to city migration	Productivity gains from agglomeration economies. Release of labour from agricultural restructuring.
2. **De-urbanisation**: cities should fare worse than they did before, and worse than the rest of the country post-1989, with a declining population	Relative decline	City to town/rural migration	Withdrawal of state support causing deindustrialisation and job loss.
3. **Demographic decline**: cities and the rest of the country should fare worse than they did historically, and worse than Western Europe	Absolute and relative decline	Natural change (declining fertility, rising mortality). International migration	Economic decline during transition period. Social insecurity (e.g. as a result of rising unemployment and contraction of the socialist welfare state).
4. **Divergence**: some cities should fare better than others, depending on their: a) quality of life b) size c) political status d) regional location e) industrial structure f) national conditions	Relative growth and decline	Cities with expanding economic opportunities and a high quality of life benefit most from in-migration. Cities with cold climates, polluted environments and declining economic opportunities lose from out-migration.	Large cities benefit from agglomeration. Capital cities benefit from high order business services. Industrial and mining cities suffer from deindustrialisation. Cities close to the West benefit from access to markets and foreign investment.

boundary did not cover the built-up area – around the core cities of Berlin, Leipzig, Dresden, Katowice, Volgograd and Donets'k – we constructed our own city definitions by amalgamating the core local authority district with adjoining districts that clearly formed part of the continuous built-up area (for a complete list of statistical and mapping sources used, see Mykhnenko and Turok, 2007).

Eastern Europe was defined according to both the physical and political-economy meanings of the region in order to avoid confusion and cultural sensitivities. This includes all former state socialist societies located in the land area between the eastern part of Germany and the Ural Mountains and the Ural River. In 2000, there were 19 independent states covered by this territory plus the former East Germany. The 150 cities that emerged in the study are home to 31% of East Europeans. They range in size up to Moscow (with 10.4 million) and are distributed as follows: European Russia (56), Ukraine (31), Poland (16), Romania (11), former East Germany (8), Belarus (7), Bulgaria and Czech Republic (3 each), Hungary, Lithuania and Slovakia (2 each), and Albania, Bosnia and Herzegovina, Croatia, Estonia, Latvia, Macedonia, Moldova, Serbia and Montenegro, and Slovenia (1 each). The full list is in **Table** 3 of the Appendix. Three clear size bands are apparent:

(i) 85 'small' cities (57% of all) with between 200,000 and 400,000 people;

(ii) 42 'medium-sized' cities (28%) with between 400,000 and 1 million; and

(iii) 23 'large' cities (15%) with a population of over 1 million.

Thirty-six Russian cities located outside Europe were excluded. Oral and Atyrau – Kazakhstan's two cities on the Ural River were below the 200,000 threshold.

Population can also be justified as useful indicator of changing urban conditions, although obviously it does not provide the full picture. First, it is an important *consequence* of urban economic conditions, especially the availability of jobs (Cheshire and Hay, 1989; Kuznets and Thomas, 1957; Salt and Clout, 1976). Migration is often a response to differences in economic opportunity between places, even if the process of adjustment is inefficient. The bigger the disparities, the greater the incentive for people to move, subject to barriers such as distance, legal restrictions, housing constraints and information on the opportunities available.

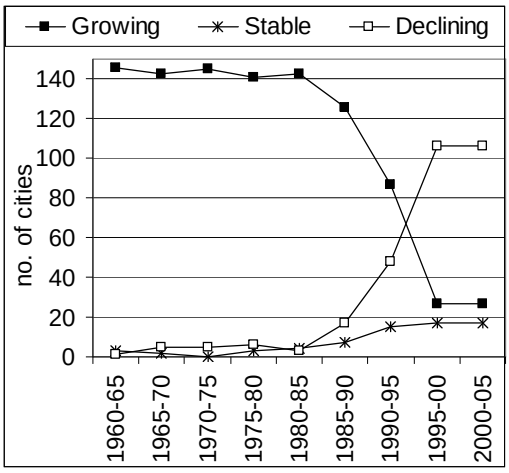
Second, it is also an important *influence* on urban economic conditions (Glaeser and Gottlieb, 2006; Krugman, 2005). There is mounting evidence that sheer population size and deep labour pools increase agglomeration economies and productivity (Rosenthal and Strange, 2004; Rice et al, 2006). Loss of population has certainly caused economic and environmental problems for cities (Cheshire and Hay, 1989; Oswalt, 2005). Shifts in the level of population affect local jobs through demand for goods and services, housing, schools, etc. Changes in the working age population also affect the supply of skills, which may influence mobile investment decisions. The following sections assess the four propositions about the changing fortunes of East European cities under post-communism.

7. AGGREGATE PATTERNS OF CHANGE

A Consistent Pattern of Slowdown

Has the fall of state socialism unleashed urbanisation trends and set East European cities on a course of resurgent growth, as suggested in the first proposition? **Figure** 1 shows the number of growing, stable and declining cities (defined as an absolute change in population) in successive five-year periods between 1960 and 2005. It reveals that the number of growing cities has fallen dramatically from around 144 (96% of all cities) between 1960 and 1985 to just 27 (18%) in the period 1995-2005. Since the mid-1990s, the overwhelming majority of East European cities have experienced a contraction in population, for the first time since World War II. The political and economic upheaval of the 1990s was clearly associated with a striking reversal in the position of cities. This initial finding refutes the idea of re-urbanisation and suggests the very opposite.

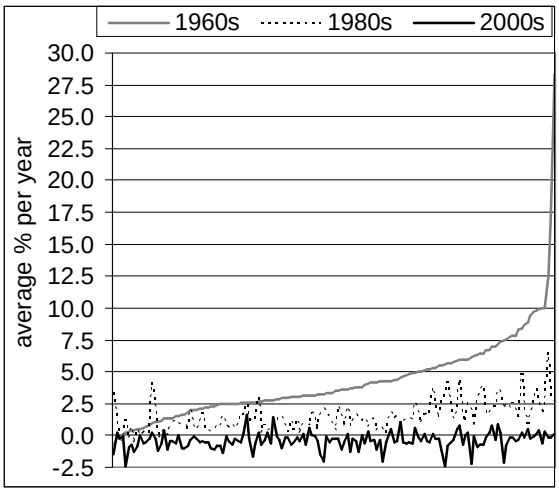
Figure 1: The number of East European cities with growing, declining, and stable population, 1960-2005



Notes: 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).

Figure 2 tracks the actual population growth rate of the 150 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 provides further evidence of a generalised slowdown turning into decline for most cities. Two-thirds of them had a growth rate of over 3% per annum during the 1960s (nearly a third were growing at over 5% per annum). The growth rate slowed sharply by the 1980s, when only 15 cities were growing at 3% or more per annum. The general upward sloping curve of the 1960s is still apparent in the 1980s, albeit at a much lower gradient and with considerable variability between cities. This means that the cities growing fastest in the 1960s were still tending to grow fastest twenty years later. However, this relationship seems to have disappeared by the early 2000s, when there were only three cities growing at more than 1% per annum anywhere.

Figure 2: Average population change rates of East European cities during different time periods, 1960-2005



Notes: The chart shows the growth rate of each city in the 1960s, 1980s, and 2000-2005, scaled by its growth rate in the 1960s.

The general slowdown appears to have obscured or eliminated any obvious consistent pattern of change. It also appears to have reduced the big divergence in city growth rates evident under state socialism. The difference between the fastest growing and declining city dropped from 29% per annum in the 1960s to just 4% in the early 2000s. The post-communist transformation has resulted in a 'negative convergence' of urban trajectories.

Appendix **Table** 2 lists the ten fastest growing and declining cities in each decade since the 1960s. Under state socialism there were two main types of fast growing city. One was new state-sponsored company towns, mostly in Russia. The best known were Togliatti (Tolyatti), location of Russia's largest car plant (VAZ - producers of the Lada brand), built near a major hydroelectric power station on the Volga River, and Naberezhnye Chelny, site of the world's largest KAMAZ heavy truck plant. The other group included principal urban centres and administrative capitals of agricultural regions, chiefly in Belarus and Ukraine. Virtually the only declining cities throughout this period were those experiencing out-migration from East Germany, a few old mining towns, and capital cities placed under tight size restrictions. The composition of the fastest growing and declining categories has altered since the transition. We explore the reasons for this in later sections.

Absolute and Relative Growth Trends

Absolute population change is a demanding test of urban fortunes since it partly reflects national demographic trends, and we have already referred to evidence that the natural rate of demographic change (live births compared to deaths) in Eastern European has slowed considerably since the 1960s. A measure of population change in cities *relative* to national change is therefore an important supplementary indicator. Relative growth or decline provides a clue the scale of net migration flows between cities and other settlements, in other words whether people are moving to or away from cities on balance.

Table 2 shows the number of cities that were growing faster and slower than their national average in each five-year period between 1960 and 2005. The number experiencing relative growth vastly outnumbered those in relative decline during the 1960s and 1970s. Cities could well have been described as 'engines of growth' during this era since they were drawing in resources and growing much more strongly than other settlements. Their increase in population went well beyond the general excess of births over deaths. There was considerable net rural-urban migration in all East European countries except East Germany during this period.

The number of cities growing faster than their nations fell during the 1980s and 1990s, when for the first time there were more cities lagging than leading national trends. This is consistent with the data in **Figure** 1, although the implication is not quite so negative, with the number of declining cities slightly lower and the number of growing cities slightly higher. Both relative and absolute Figures suggest that the second half of the 1990s was the worst period for East European cities, when decline was most widespread. There was some improvement in the first five years of the new millennium, with the number of relatively growing cities recovering to just exceed those that were still shrinking. The downward spiral seems to have halted, although city populations are still contracting on average.

Table 2: Relative and absolute population changes in East European cities and nations, 1960-2005

	1960-65	1965-70	1970-75	1975-80	1980-85	1985-90	1990-95	1995-00	2000-05
Number of relatively **growing** cities*	143	139	141	138	131	113	94	62	77
Number of relatively **declining** cities*	7	11	9	12	19	37	56	88	73
Average annual **city** population growth rate**	3.67	3.73	3.67	2.33	1.80	1.00	0.16	-0.45	-0.39
Average annual **national** population growth rate**	1.17	0.99	0.86	0.73	0.75	0.40	-0.45	-0.34	-0.28

Notes: * Relatively growing cities have a rate of population change above their national average. Relatively declining cities have a rate of population change below their national average. ** These average figures are not weighted.

The absolute rates of population growth for cities and their nations are also shown in **Table** 2. During the 1960s and 1970s, cities were on average growing at more than three times their national growth rates, indicating very strong urbanisation trends. The differential narrowed during the 1980s and 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 declining slightly faster on average than their national populations.

Urban Decline

To put the magnitude of population change into a broader perspective, **Figure** 3 compares the average rate of change in Eastern European cities with their Western counterparts. It shows that from a position of far stronger growth in the 1960s and 1970s, the trajectory of cities in the East has been transformed and is now much worse than in the West. The slowdown among cities in the West occurred earlier and was more gradual. It is also worth noting that cities in the West have never declined on average.

Figure 3: City growth rates in Western and Eastern Europe and in the two regionally fastest shrinking cities, 1960-2005

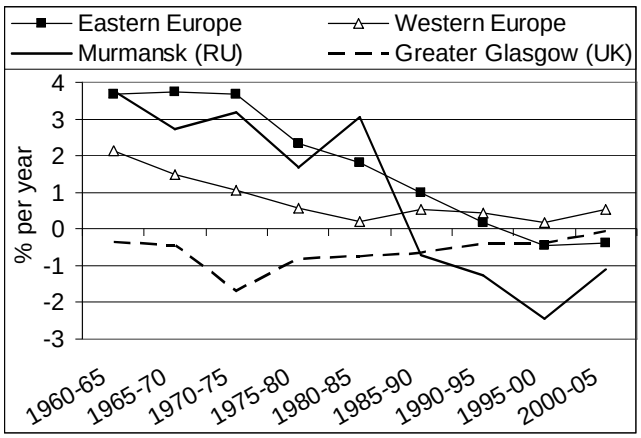


Figure 3 also compares the city that has experienced the greatest decline in Eastern Europe (Murmansk, Russia) with the city that has contracted the most in the West (Greater Glasgow, UK). The Glasgow conurbation lost 24% of its population between 1960-2005. Murmansk lost the same proportion, but in only a third of the time, between 1990-2005. Halle in East Germany experienced a similar fate. The aggregate

and individual city trajectories suggest that the pace of post-1989 slowdown in Eastern Europe has been considerably faster than in the West.

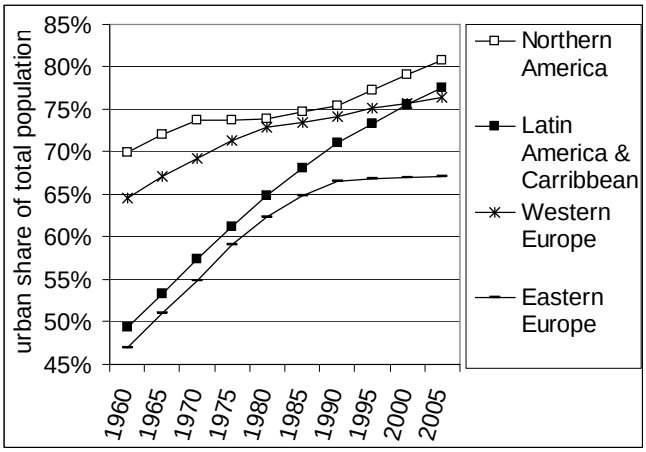
The prevalence of shrinking cities strongly refutes the first proposition - re-urbanisation. Between 1990 and 2005, East European cities fared worse than they did before, and slightly worse than the rest of the country.

8. DE-URBANISATION?

Does this support the second proposition - general de-urbanisation after 1989? The evidence presented thus far shows that most cities moved from a growth trajectory to one of decline during the 1990s and there was a big fall in the average growth rate. However, de-urbanisation is a relative concept rather than an absolute one. **Table** 2 shows that many cities shifted from a trajectory of growth relative to their national populations to one of decline. A higher average city growth rate than their national populations in the 1960s and 1970s was also transformed into a higher average rate of decline. Yet, the difference between the number of cities experiencing relative growth and decline was small by 2000-05 and the gap between the average city and national rates of decline was slight. This suggests a limited and partial process of de-urbanisation rather than a general and powerful one.

In addition, it is possible to test the World Bank prediction that the level of urbanisation in Eastern Europe would decline from 67% to 55%. The United Nations makes estimates of the urban population for every country in the region. Their statistics differ from those in this paper because they include many cities and towns with less than 200,000 people. **Figure** 4 aggregates the UN data and compares the average level of urbanisation across the region between 1960 and 2005. It shows the rising proportion of Eastern Europe's population living in urban areas between 1960-1990. This stabilised in the 1990s to a peak at just over 67% in 2005. This is neither a trajectory of de-urbanisation nor continuing urbanisation.

Figure 4: Urbanisation in Eastern Europe in international perspective, 1960-2005



Source: Authors' own calculations on the basis of UNDESA (2006b) and UNSD (2006)

Figure 4 also shows a marked contrast between the situation in Eastern Europe and other regions. Western Europe (76.4% urban), North America (80.8%) and Latin America (77.6%) have all experienced continuing urbanisation to a higher level. Something distinctive appears to have occurred in Eastern Europe.

The evidence presented thus far offers more support for the de-urbanisation thesis than for re-urbanisation, but the process does not appear to be very strong. There has been a sharp slowdown in the absolute and relative growth rate of East European cities since the 1980s to a position of absolute contraction, but cities are not haemorrhaging population to towns and rural areas. The population is declining in the rest of the country too.

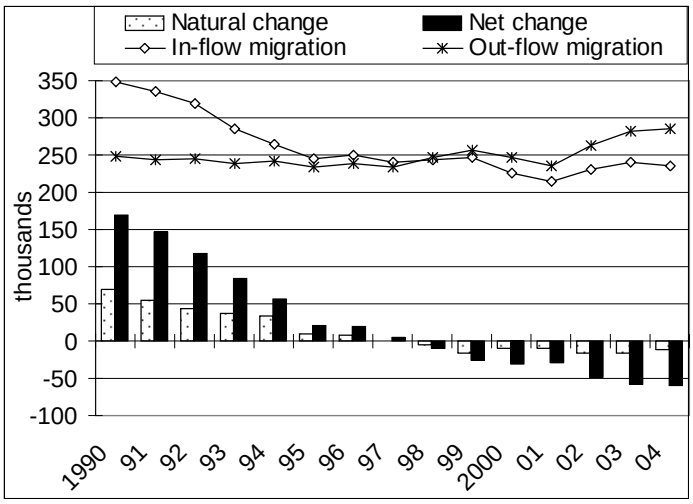
9. GENERAL DEMOGRAPHIC DECLINE

The stark reversal in the fortunes of most Eastern European cities to the situation of a shrinking population is more consistent with the third proposition than with the first two, particularly because the population is contracting everywhere. Urbanisation was the dominant demographic process in the 1960s and 1970s, but this seems to have been replaced by general demographic decline.

Unfortunately it is difficult to obtain consistent data across the cities and regions to provide a full and convincing account of this. Ideally, demographic change would be disaggregated into its migration and natural change components, and beyond that into the separate categories of internal and international migration, and fertility and mortality. The UNDESA (2006a) report quoted earlier suggested that emigration was the main source of decline in some countries and low fertility in the others, but this data is unavailable at the city-level.

A case study can illustrate some of the dynamic processes at work. Poland is the largest country for which consistent time-series data could be obtained on migration flows and natural change. **Figure** 5 provides a simple breakdown of demographic change in Poland's urban areas into natural change, in- and out-migration over the period 1990-2004. Net change represents the sum of all three categories. It shows the strong positive contribution to urban areas of *both* natural change and net migration in the early 1990s decreasing until a turning point around 1997/98. Since then both processes have moved into reverse and contributed to the decline of Poland's urban population. The influence of net migration generally appears to have out-weighed natural change, both before and after the turning point.

Figure 5: Population change in Poland's urban areas by source (thousands), 1990-2004



Source: GUS, 2005.

A crucial category missing from this analysis is international migration. Emigration is inadequately captured in national and local statistics. People leaving cities are typically defined as domestic migrants, unless they have formally declared to the relevant municipal, tax, or police authorities that they are moving abroad on a 'permanent basis'. This may not happen for several years or even longer.[1]

Further demographic data was obtained for selected Czech, Lithuanian, Polish and Ukrainian cities. Analysis not reported here because of space constraints revealed that *both* natural change and net migration contributed their loss of population. The relative importance of these processes, and the balance between domestic and international migration (where data was available), seemed to vary between cities and time-periods, making generalisation difficult. It is also worth noting that natural change and migration are not completely independent processes since economic migrants are more likely than the rest of the population to be of childbearing age, so there is a knock-on population effect through their children.

Additional research is clearly required to establish the different components of demographic change in cities and the rest of the country. This would help to shed further light on the dynamics and causes of population decline, including changing economic and social circumstances and government policy.

10. DIVERGENT TRAJECTORIES

A Long-Term Perspective

Some general urban patterns have already emerged, alongside differences between countries. But how big were the differences between individual cities? The fourth proposition is that city trajectories would diverge with the decline of central planning and the emergence of market processes. Greater reliance on indigenous assets would mean that the differences between cities would grow depending on their resource endowments and location.

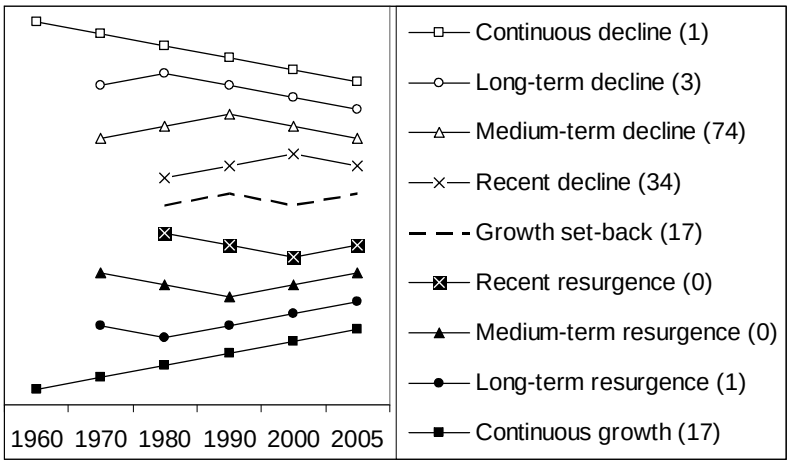
The first step in this analysis involved unpacking the aggregate pattern of change to examine the extent of diversity among cities and the different trajectories of

individual cities over time. We characterise 'growth' and 'decline' in a very straightforward way as a rising or falling population.

Figure 6 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 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. In addition to continuous decline, there are three other categories of contraction:

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

Figure 6: Trajectories of individual cities, by number, 1960-2005



Almost all (98%) of the 150 cities followed one of the nine trajectories. The three unclassified cities followed more complicated or volatile patterns of change. The number that followed each recognised trajectory is shown in the key to **Figure** 6 and the individual cities are listed by country in Appendix **Table** 3.

The most common trajectory followed by half of all cities was 'medium-term decline'. This included all cities in the Czech Republic, Estonia, Latvia, Lithuania, Moldova, Slovakia, and Slovenia; over half of Romanian and Ukrainian cities, and half of all Polish and Russian cities. The second most common trajectory, with almost a quarter of cities, was 'recent decline', including roughly a third of Polish, Romanian and Russian cities, and a fifth of Ukrainian. Taking these groups together, 108 cities (72%) experienced several decades of growth followed by a downturn after 1990.

The third most common pattern, with one in nine cities, was the uneven trajectory in the middle of **Figure** 6. These cities grew in the 1980s, declined in the 1990s and then recovered in the early 2000s. They include all the cities in Bosnia and Herzegovina, Croatia, and Serbia and Montenegro, two of Bulgaria's three cities, four of the seven Belarusian cities and one-fifth of the Ukrainian cities.

A similar number of cities experienced 'continuous growth', including those in Albania and Macedonia, three of the seven Belarusian cities, one-eighth of Russian and Polish cities, and two Ukrainian cities. Only four cities experienced continuous or long-term decline, including three of East Germany's eight cities (Greater Leipzig, Chemnitz, and Magdeburg) and one of Hungary's two cities (Budapest). Only one city (Greater Berlin) experienced a period of decline followed by growth ('resurgence').

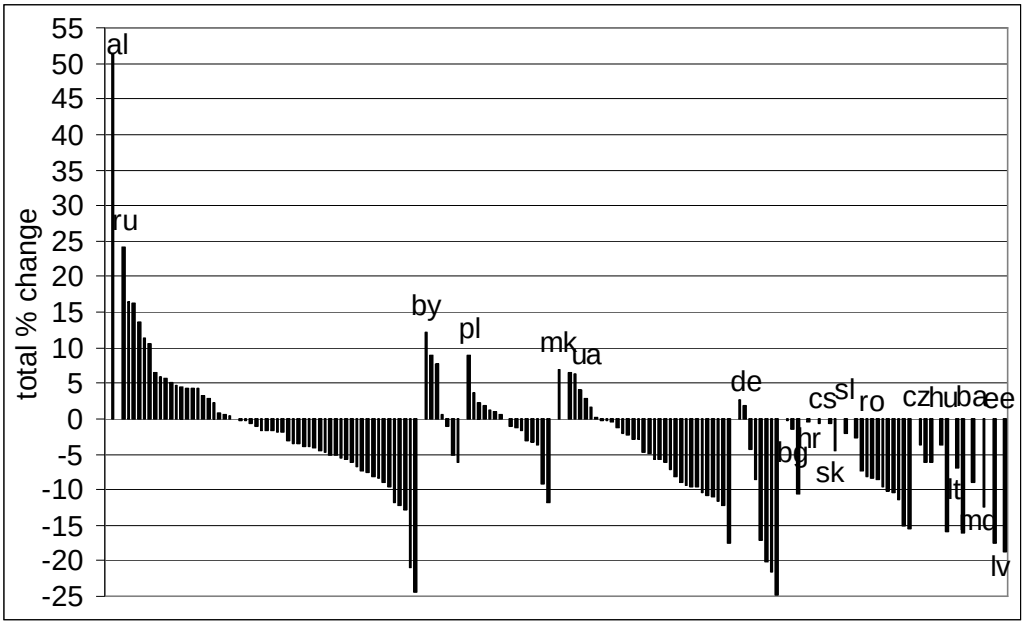
Overall, the extent of divergence revealed here is somewhat limited in that the majority of cities conform to a basic pattern of long-term growth followed by decline. Meanwhile a minority of cities have experienced uninterrupted growth. There is also a small indication in these results that national distinctions matter in that the balance between different trajectories varies between countries.

A Post-1989 Perspective

This analysis of trajectories does not reveal the differences in the rates of growth or decline between cities, so it risks understating the extent of divergence. The next logical step is to look at the actual rates of change, comparing cities with each other and with their national demographic trends. **Figure** 7 shows the percentage change in

the total population of the 150 cities between 1990 and 2005, grouped within each country and ranked from the fastest growing to the fastest declining (for national codes, see Appendix **Table** 1).

Figure 7: Individual city growth rates under post-communism, 1990-2005



Note: the chart shows the percentage population change of each city between 1990 and 2005, grouped nationally and scaled by the fastest growing city within countries.

One the clearest points to emerge from **Figure** 7 is the wide spectrum within most countries between cities that have fared relatively well and those that have not. In Russia, Poland and Belarus, roughly half the cities have grown and half have declined. Within Russia, the city of Staryi Oskol in the south-west expanded by 24%, while Murmansk in the north-west declined by 24%. National distinctions also seem to matter in that decline dominates the city profiles of most other countries, especially Romania, East Germany and Ukraine, where there are enough cities to generalise. Even here, however, there is still a range of different rates of decline.

Bearing in mind an earlier observation about the need to consider relative population change as well as absolute change, especially in view of the general demographic decline in Eastern Europe, we have added relative rates of change to the analysis. Three separate categories of change have been introduced as a refinement of the absolute growth/decline distinction.

The first category includes cities that have gained population in absolute terms between 1990 and 2005 ('gainers'). The second category is the novel one. It includes cities that have lost population, but more slowly than their national average. They have retained a larger share of their national populations, i.e. growth in relative terms but not in absolute terms ('retainers'). The third group covers cities that have contracted more quickly than national trends ('losing population'). The terminology of gainers and losers does not imply that cities have been in direct competition for population.

Table 4 in the Appendix shows the detailed results. There were 42 gainers, 34 retainers and 74 losers. Each category is quite diverse, but some notable differences emerge. First, most national capital cities are among the first group of gainers, indicating relatively strong growth. Second, there is a surprising number of large cities dominated by mining and manufacturing included among the gainers and retainers.[2] The third and largest type of growing city (especially in the retainers category) includes those between 200-400,000 population which are principal centres in rural regions dependent on agriculture.[3] The category of declining cities contains a large number of old industrial conurbations and ports.[4]

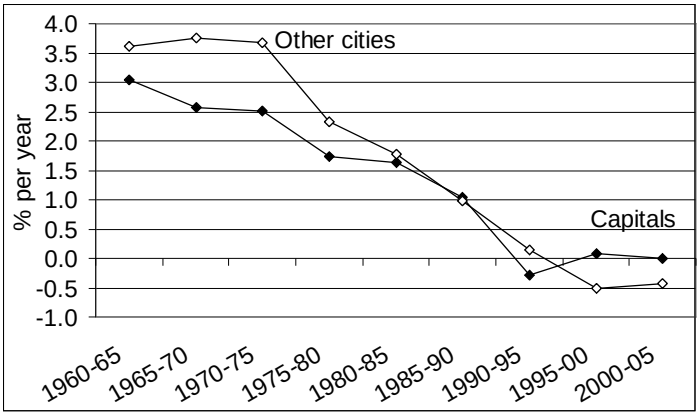
Considering the differences between countries, there is a higher incidence of declining cities in Romania, East Germany and Poland, and a higher incidence of gainers and retainers in Belarus, Ukraine and Russia. When the countries with fewer cities are also taken into account, there appears to be a disproportionate number of declining cities in the countries that are most integrated with Western Europe. This may be attributable, at least in part, to the greater ease of emigration. The following section explores this further.

Core-periphery differences: political status and regional location

There is some similarity between reasons why one might expect the fate of cities with capital status to better than those without, and cities close to the economic and political core of Europe to be better than those on the periphery. They include proximity to leading political, financial and cultural institutions, high-level corporate functions and product markets. The differences were examined in three ways.

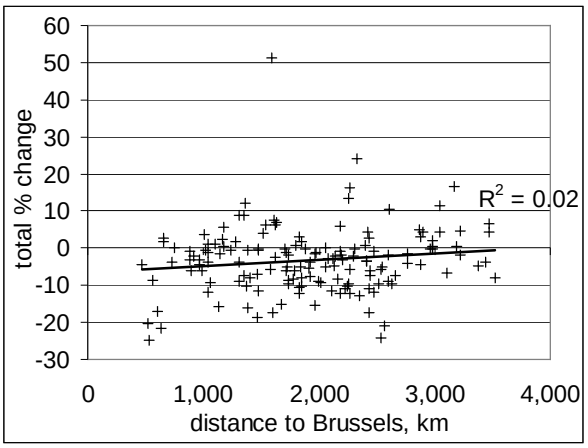
First, the average growth rate of capital cities was compared with the other cities. **Figure** 8 shows a significant change in the relative fortunes of the two groups. City size controls imposed by socialist state planners meant that national (and then mostly republican) capitals grew at a much slower pace than other cities between 1960 and 1980. However, the position had turned around by the second half of the 1990s. The population of capital cities appears to have stabilised over the last decade while other cities are declining. Therefore, capital cities are more likely to be gainers or retainers in the terminology used above.

Figure 8: Population growth rates of capital cities and other cities in Eastern Europe, 1960-2005



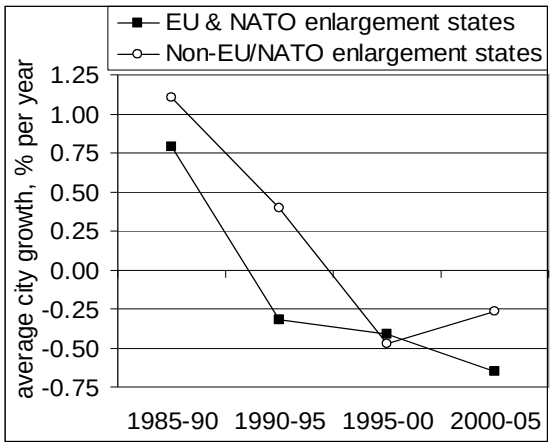
Second, the growth rates of cities close to the core of Western Europe were compared with those on the periphery. **Figure** 9 shows the correlation between city growth rates between 1990 and 2005 and physical (crow-flies) distance of each city to Brussels, headquarters of both the European Union (EU) and North Atlantic Treaty Organisation (NATO). It shows no significant difference between the fortunes of cities at different distances from the heart of Europe.

Figure 9: Relationship between the physical proximity to the West and total population change in cities, 1990-2005



Third, the average growth rate of cities in countries strongly linked to the West was compared with the other cities. The former were defined as countries that have become integrated more closely with Western Europe and North America since 1990 through both the EU and NATO enlargement processes (i.e. Bulgaria, Czech Republic, East Germany, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, and Romania). **Figure** 10 shows that city growth rates declined sharply in both groups of states throughout the 1990s. The formal entry of the East European applicant states into NATO was not until in 1999 and 2004, and the EU in 2004 and 2007. The changes associated with enlargement included the lifting of restrictions on travel and greater ease of access for migration from East to West. This appears to have accelerated population decline in the cities of the new member states, although the full impact is yet to be seen, especially in the official statistics. Meanwhile, the rate of decline in the other group of post-communist states appears to have slowed down. This finding is contrary to expectations.

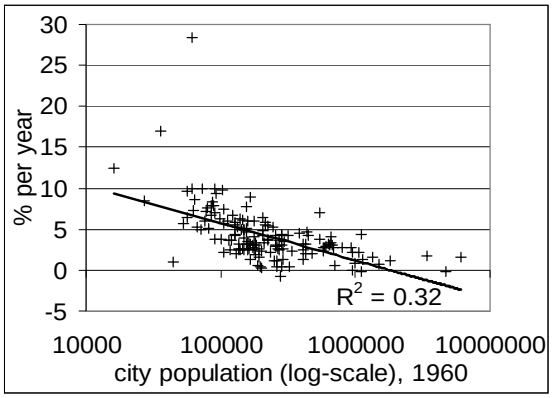
Figure 10: Relationship between the national integration with the West (EU/NATO membership) and population change in cities, 1985-2005



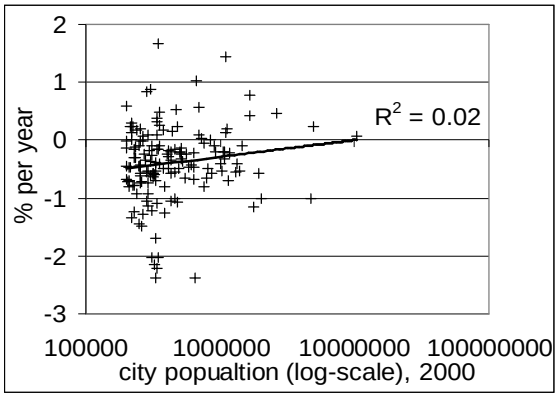
The significance of city size and quality of life

The proposition that larger cities would benefit more from the transition than smaller cities was examined by comparing city growth rates with their size. Scatter-plots and correlations were produced exploring the relationship between city size and population growth between 1960-1970 (**Figure** 11) and then again four decades later between 2000-2005 (**Figure** 12). The relationship was negative and quite steep in the 1960s, indicating that the larger the city, the slower the rate of growth. Cities with between 200-400,000 population were growing at about 4% per year on average during the 1960s, compared with just over 2% for cities with over a million people. This had changed by the early 2000s, when relationship between city size and growth rates had disappeared. Cities with over a million people were declining at about 0.2% per year on average compared with about 0.4% for cities with 200-400,000 people. **Figure** 12 shows that the difference was not statistically significant. A big slowdown in the growth rate of smaller cities turning into decline was the key to the change in the relative position of large and small cities. The fortunes of large cities have changed less during the transition.

Figure 11: Relationship between city size and growth rate in 1960s



Figures 12: Relationship between city size and growth rate in 2000s



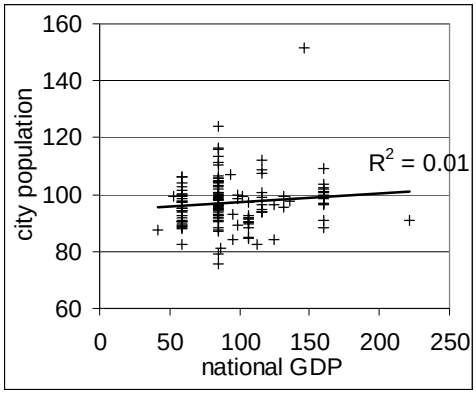
The proposition that cities in remote regions with harsh climates would lose population to places with moderate climates was assessed by comparing city growth rates with the amount of solar radiation received. This is probably the most important aspect of climate that can be directly measured (in watt-hours per square metre per day). Scatter-plots and correlations were produced of the relationship between solar radiation and city growth in 1960-1970 and then again in 1990-2005.[5] The very clear conclusion was that there is no significant relationship between the two variables and this has not changed over the last four decades. Cities with a sunnier climate in southern parts of Eastern Europe have not grown any faster or slower on average than cities in northern parts of the region.

National economic performance and industrial structure

The proposition that national economic performance would affect the fortunes of individual cities within each country was assessed by comparing city growth rates

with changes in national gross domestic product. **Figure** 13 shows the change in GDP between 1990 and 2005 against an index of the change in population for each city over the same period. There does not appear to be any obvious relationship between the change in national economic output and individual city trajectories from this evidence. Cities do not appear to have contracted more in countries where economic growth has been relatively weak compared with countries where it has been strong. It is possible that it is too soon to see large-scale permanent emigration from cities and countries where the economy has been sluggish, especially as the legal barriers have only recently been lowered in some countries and are still in place in others.

Figures 13: Relationship between population change in individual cities and national economic performance, 1990-2005 (indexes, 1990 = 100)



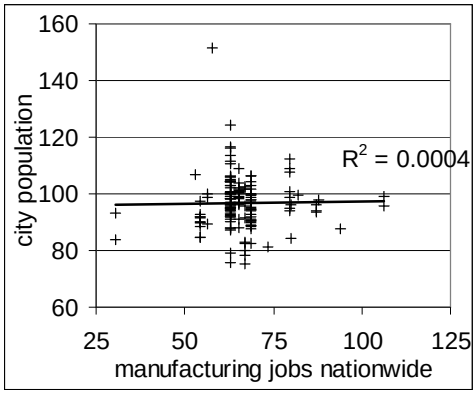
Source: Authors' own calculations on the basis of IMF, 2006.

It was not possible to test the proposition that the city's industrial structure would affect its demographic fortunes directly because data on the changing industrial composition of individual cities was unavailable. Instead, the analysis was undertaken using changes in the national industrial structure, specifically the change in manufacturing jobs between 1990 and 2005. The focus was on manufacturing as the established economic base of most East European cities. The basic proposition being assessed was that the fate of cities in countries experiencing substantial de-industrialisation would be worse than where manufacturing decline was more limited.

Figure 14 shows no obvious relationship between change in manufacturing employment and city population between 1990-2005. Cities do not seem to have

contracted more in countries where de-industrialisation has been marked compared with countries where manufacturing jobs have held up better. It may be that it is either too soon to see large-scale permanent emigration from the former, or that the effects of de-industrialisation have been offset by the growth of service industries, which were previously undeveloped.

Figures 14: Relationship between population change in individual cities and national employment in manufacturing, 1990-2005, (indexes, 1990 = 100)



Source: Authors' own calculations on the basis of ILO, 2006.

11. CONCLUSION

There has been a dramatic turnaround in the population trajectories of East European cities since the 1960s and 1970s. At that time most cities were growing rapidly and on average at more than three times their national population growth rates, indicating very strong net rural-urban migration. There was a sharp reversal in their absolute and relative positions during the 1980s and 1990s. During the last decade the population of three-quarters of cities has been contracting; and slightly faster on average than the overall population. This contradicts the widespread suggestion in the literature of a revival of East European cities since the fall of state socialism, based apparently on the physical manifestations of improvement. The only sign of support for this in the underlying population trends is that the incessant downward growth rate trajectory appears to have halted since around 2000, and even recovered very slightly overall.

The immediate explanation for the downturn of cities appears to be general demographic contraction rather than specific urban factors. The fertility rate has

fallen sharply everywhere and net rural-urban migration appears to have been replaced by international out-migration, although limitations on available data preclude a detailed account of this. With the increasing integration of Eastern and Western Europe, the prospects are for further population loss through emigration because of better employment prospects and living standards in the West. The scale of this obviously depends on future economic conditions in the East. Emigration will also affect remaining fertility rates because economic migrants tend to be of childbearing age.

There are differences between the fortunes of individual cities, although the disparities are smaller than they were in the 1960s and 1970s and decline is the dominant trajectory. Further research is required to fully explain why some cities have fared better or worse than others, although certain factors seem to be relevant while others can probably be ruled out.

First, the relative position of capital cities has changed over the last four decades, from lagging behind the average growth rate of cities to a position of stability rather than decline. A second, related conclusion is that smaller and medium-sized cities have experienced a sharper downturn than larger cities, except perhaps where they function as the principal centres of rural regions. Third, cities in countries which are more detached from Western Europe legally and economically appear to have declined less than places that are more closely integrated, perhaps because travel and emigration have become easier for people living in the latter. Clearly, this may prove to be a temporary phenomenon.

Several attributes do not appear to be important in distinguishing between cities with different trajectories. They include the climate, geographical proximity to Brussels and national economic performance. In addition, de-industrialisation does not appear to have had the severe and widespread impact that it had on former industrial cities in Western Europe, although there are specific cities that have been very hard-hit. This may be because the scale and distribution of manufacturing job losses have different from the West or because they have been offset to a greater extent by the growth of services.

NOTES

1. According to the Polish Central Statistical Office (GUS, 2005) 18,900 people emigrated from Poland in 2004. During the same year about 100,000 Poles registered for work in the UK alone (Home Office, 2006). The latter **Figure** excludes self-employed migrants (e.g. construction workers) and dependants.
2. The gainers and retainers include: Staryi Oskol (iron and steel), Nizhnekamsk (petrochemicals, power), Togliatti (automotive), Shakhty (coal), Sterlitamak (petrochemicals), Cheboksary (automotive), Lipetsk (iron and steel), Orenburg (engineering), Syktyvkar (shipbuilding, paper-pulp), Greater Volgograd (metals, petrochemicals, power), Lublin (automotive, machinery), Kraków (iron and steel, oil refining, chemicals), Gdynia (shipbuilding, port), Mahilëu (chemicals, electric engineering), Naberezhnye Chelny (automotive), Balakovo (chemicals, power), Mykolaiv (shipbuilding, port), Ul'ianovsk (automotive), Cherepovets (iron and steel), Izhevsk (metals and automotive), Rostov-on-Don (engineering), Craiova (engineering and machinery), Kryvyi Rih (iron and steel), Kremenchuk (automotive), Mariupol' (iron and steel, port), L'viv (automotive, machinery, electric engineering) and Plovdiv (metals, machine-building, textiles).
3. These include: Belgorod, Hrodna, Białystok, Brest, Rivne, Khmel'nyts'kyi, Kaluga, Astrakhan', Yoshkar-Ola, Ternopil', Toruń, Bila Tserkva, Vologda, R'iazan', Kirov, Chernihiv, Ivano-Frankivs'k, Luts'k, Kostroma, Orel, Babruisk, Cherkasy, Penza, Pskov, Poltava, Sumy, Vinnytsia, Chernivtsi and Zhytomyr.
4. The most prominent include: Murmansk (mining, port), Rostock (shipbuilding, port), Severodvinsk (shipbuilding, naval base), Riga (engineering, shipbuilding, port), Tallinn (engineering, shipbuilding, port), Horlivka (coal, chemicals, engineering), Braşov (machine-building, metal-processing), Dniprodzerzhyns'k (iron and steel), the Upper Silesian conurbation (coal, iron and steel), Ivanovo (textiles), Kherson (shipbuilding, oil refinery, port), Dnipropetrovs'k (iron and steel, engineering, chemicals), Greater Donets'k (coal, iron and steel, heavy engineering), Galaţi (iron and steel), Zaporizhzhia (power, iron and steel, engineering, automotive), Dzerzhinsk (chemicals), Luhans'k (heavy engineering), Łódż (textiles), Archangel (port), Odesa (port), Nizhniy Novgorod (automotive, shipbuilding, electric engineering, machinery), Samara (petrochemicals,

engineering, power), Ostrava (coal, iron and steel), Perm' (oil refining, engineering), Ufa (petrochemical, engineering), Gdańsk (shipbuilding, port), Košice (iron and steel) and Szczecin (shipbuilding, port).

5. The Figures are not reproduced in the paper because of space constraints.

REFERENCES

ÅSLUND, A. (2004) An expanding Europe, in decline, *The Washington Post*, April 25.

BADYINA, A. and GOLUBCHIKOV, O. (2005) Gentrification in central Moscow – a market process or a deliberate policy? Money, power and people in housing regeneration in Ostozhenka, *Geografiska Annaler*, 87B(2), pp. 113-129.

BERG, VAN DEN L., BRAUN, E. and VAN DER MEER, J. (2004) *National Urban Policies in the European Union*. Rotterdam: EURICUR Erasmus University.

BERG, VAN DEN L., DREWETT, R., KLAASEN, L. *ET AL*. (1982) *Urban Europe: A Study of Growth and Decline*. Oxford: Pergamon.

BIALKOVSKAIA, V. and NOVIKOV, V. (1983) Urbanization and the problem of restricting the growth of very large cities, *Problems of Economics*, 26(6), pp. 23-39.

BRADE, I. and RUDOLPH, R. (2004) Moscow, the global city? The position of the Russian capital within the European system of metropolitan areas, *Area*, 36(1), pp. 69-80.

BUCK, N., GORDON, I., HARDING, A. and TUROK, I. (2005) *Changing Cities: Rethinking Urban Competitiveness, Cohesion and Governance*. London: Palgrave.

BUCKLEY, C. (1995) The myth of managed migration: migration control and market in the Soviet period, *Slavic Review*, 54(4), pp. 896-916.

BUCKLEY, N. (2006) Comment and analysis: from shock therapy to consumer cure: Russia's middle class starts spending, *Financial Times*, October 31.

BUCKLEY, R.M. and MINI, F. (2000) *From Commissars to Mayors: Cities in the Transition Economies*. Washington, DC: The World Bank.

CAMPOS N.F. and CORICELLI, F. (2002) Growth in transition: What we know, what we don't, and what we should, *Journal of Economic Literature*, 40(3), pp. 793-836.

CHESHIRE, P. and HAY, D. (1989) *Urban Problems in Western Europe*, London: Unwin Hyman.

CIENSKI, J. (2006) Employers struggle to fill factories as Polish workers go west, *Financial Times*, October 25.

CONDON, C. (2005) Neglected city starts to lose its dead-end feel, *Financial Times*, December 9.

CUMBERS, A., BIRCH, K., and MACKINNON, D. (2006) Revisiting the old industrial region: adaptation and adjustment in an integrating Europe. Centre for Public Policy for Regions, Working Paper 1, University of Glasgow.

DE MELO, M. and OFER, G. (1999) The Russian city in transition: the first six years in 10 Volga capitals. Policy Research Working Paper Number 2165. Washington, DC: The World Bank.

DEMIDENKO, E.S. (1980) *Demografisheskie problemy i perspektivy bol'shikh gorodov*. Moscow: Statistika.

ECONOMIST (2005) Special report: Simplifying tax systems. The case for flat taxes, *The Economist*, April 14 (http://www.economist.com/displaystory.cfm?story_id=3860731; last accessed 8 January 2007).

ENYEDI, G. (1992) Urbanisation in east central Europe: social processes and societal responses in the state socialist systems, *Urban Studies*, 29(6), pp. 869-880.

ENYEDI, G. (1998) Transformation in central European postsocialist cities, in: G. ENYEDI (Ed.) *Social Change and Urban Restructuring in Central Europe*, pp. 9-34. Budapest: Akadémiai Kiadó.

EUROPEAN COMMISSION. (2006) *Cohesion Policy and Cities - The Urban Contribution to Growth and Jobs in the Regions: Communication from the Commission to the Council and Parliament*. Luxembourg: Office for Official Publications of the European Communities.

FAWKES, H. (2007) Kiev becomes latest property hotspot, *BBC News*, January 5 (http://news.bbc.co.uk/go/pr/fr/-/1/hi/business/6228205.stm; last assessed 8 January 2007).

FLORIDA, R. (2004) *The Rise of the Creative Class*. New York: Basic Books.

FUCHS, R.J. AND DEMKO, G.J. (1979) Geographic inequality under socialism, *Annals of the Association of American Geographers*, 69(2), pp. 304-318.

GANG, I.N. and STUART, R.C. (1999) Mobility where mobility is illegal: internal migration and city growth in the Soviet Union, *Journal of Population Economics*, 12, pp. 117-134.

GLAESER, E. and GOTTLIEB, J. (2006) Urban resurgence and the consumer city, *Urban Studies*, 43(8), pp. 1275-1299.

GLAESER, E., KOLKO, J. and SAIZ, A. (2001) Consumer city, *Journal of Economic Geography*, 1, pp.27-50.

GORNOSTAYEVA, G.A. (1989) Osobennosti sovremennoi urbanizatsii v SSSR, in: YU.L. PIVOVAROV and O.V. GRITSAY (Eds) *Mirovaya urbanizatsiya: geograficheshiye problemy*, pp. 39-51. Moscow: Akademia Nauk SSR.

GUS (Central Statistical Office of Poland). (2005) *Rocznik demograficzny. Demographic Yearbook of Poland*, Warsaw: GUS.

HALL, P. (1993) Forces Shaping Urban Europe, *Urban Studies*, 30(6), pp. 883-898.

HAMILTON, F.E.I. (1979) Urbanization in socialist Eastern Europe: the macro-environment of internal city structure, in: R.A. FRENCH and F.E.I. HAMILTON (Eds) *The Socialist City: Spatial Structure and Urban Policy*, pp. 167-194. Chichester, England: John Wiley & Sons.

HAMILTON, F.E.I. (1999) Transformation and space in Central and Eastern Europe, *The Geographical Journal*, 165(2), pp. 135-144.

HAMILTON, F.E.I., PICHLER-MILANOVIĆ, N. and DIMITROVSKA ANDREWS, K. (2005) Introduction, in: F.E.I. HAMILTON, K. DIMITROVSKA ANDREWS, and N. PICHLER- MILANOVIĆ (Eds) *Transformation of Cities in Central and Eastern Europe: Towards Globalization*, pp. 3-21. Tokyo: United Nations University Press.

HARRIS, C.D. (1945) The cities of the Soviet Union, *Geographical Review*, 35(1), pp. 107-121.

HARRIS, C.D. (1970) *Cities of the Soviet Union: Studies in Their Functions, Size, Density, and Growth*. Chicago: Rand McNally.

HARRISON, B. and BLUESTONE, B. (1988) *The Great U-Turn: Corporate Restructuring and the Globalising of America,* New York: Basic Books.

HILL, F. and GADDY, C.G. (2003) *The Siberian Curse: How Communist Planners Left Russia Out in the Cold*. Washington, DC: The Brookings Institution.

HOLTON, R.J. (1984) Cities and the transitions to capitalism and socialism, *International Journal of Urban and Regional Research*, 8(1), pp. 13-37.

HOME OFFICE *ET AL*. (2006) *Accession Monitoring Report: May 2004 – September 2006*. London: Home Office Immigration and Nationality

Directorate, http://www.ind.homeoffice.gov.uk/6353/aboutus/accessionmonitoringreport9.pdf.

HUSDO (Donets'k Oblast Chief Statistical Department). (2004a) *Statystychnyi shchorichnyk Donetskoi oblasti za 2003 rik*. Donetsk: HUSDO.

HUSDO (Donets'k Oblast Chief Statistical Department). (2004b) *Statystychnyi shchorichnyk Donetskoi oblasti za 2003 rik*: *Dodatok (tablychnyi material)*. Donets'k: HUSDO.

HUSLO (Luhans'k Oblast Chief Statistical Department). (2004a) *Statystychnyi shchorichnyk Luhans'koi oblasti za 2003 rik*, Chastyna I. Luhans'k: HUSLO.

HUSLO (Luhans'k Oblast Chief Statistical Department). (2004b) *Statystychnyi shchorichnyk Luhans'koi oblasti za 2003 rik*, Chastyna II. Luhans'k: HUSLO.

ICKES, B.W. and OFER, G. (2006) The political economy of structural change in Russia, *European Journal of Political Economy*, 22, pp. 409-434.

ILO (International Labour Organisation). (2006) *LABORSTA Internet Database*. Geneva: ILO, http://laborsta.ilo.org.

IMF (International Monetary Fund). (2006) *World Economic Outlook Database*, September 2006 edn. Washington, DC: IMF, http://www.imf.org/external/pubs/ft/weo/2006/02/data/index.aspx.

IYER, S.D. (2003) Increasing unevenness in the distribution of city sizes in Post-Soviet Russia, *Eurasian Geography and Economics*, 4495), pp. 348-367.

KENNEDY, M.D. and SMITH, D.A. (1989) East central European urbanization: a political economy of the world-system perspective, *International Journal of Urban and Regional Research*, 13(4), pp. 597-624.

KHOREV, B. (1984) Current scientific and practical problems in restricting the growth of large cities in the USSR, *Problems of Economics*, 27(8), pp 3-19.

KONRAD, G. and SZELÉNYI, I. (1977) Social conflicts of under-urbanization, in: M. HARLOE (Ed.) *Captive Cities*, pp. 157-174. London: John Wiley & Sons.

KOSTINSKIY, G. (2001) Post-socialist cities in flux, in: R. PADDISON (Ed.) *Handbook of Urban Studies*, pp. 451-465.

KOVÁCS, Z. (1999) Cities from state-socialism to global capitalism: an introduction, *GeoJournal*, 49, pp. 1-6.

KRASKE, M. and PUHL, J. (2005) Eastern Europe's economic boom: the tiny tigers, *Spiegel Online*, December 21

(http://www.spiegel.de/international/spiegel/0,1518,391649,00.html; last accessed 8 January 2007).

KRUGMAN, P. (2005) Second winds for industrial regions?, in: D. COYLE, W. ALEXANDER, and B. ASHCROFT (Eds) *New Wealth for Old Nations: Scotland's Economic Prospects*, pp. 35-47. Princeton: Princeton University Press.

KUZNETS, S. and THOMAS, D.S. (1957), *Population Redistribution and Economic Growth: United States, 1870-1950*, Vol. I, Methodological Considerations and Reference **Table**s. Philadelphia: American Philosophical Society.

LAITNER, S. and WAGSTYL, S. (2004) Europe is coming to terms with a westward march, *Financial Times*, July 12.

LANE, D. (Ed.) (2002) *The Legacy of State Socialism and the Future of Transformation*. Lanham, MD: Rowman & Littlefield.

LEWIS, R.A. and ROWLAND, R.H. (1979) *Population Redistribution in the USSR: Its Impact on Society, 1897-1977*. New York: Praeger.

MANFRASS, K. (1992) Europe: south-north or east-west migration?, *International Migration Review*, 26(2), pp. 388-400.

MARTIN, R. and ROWTHORN, R. E. (Eds) (1986) *The Geography of De-industrialisation*. Basingstoke, England: Macmillan.

MERCER HUMAN RESOURCE CONSULTING. (2006) *Worldwide Cost of Living Survey 2006: City Rankings*. London: MHRC.

MISITI, M., MUSCARÀ, C., PUMARES, P., *ET AL* (1995) Future migration into southern Europe, in: R. HALL and P. WHITE (Eds) *Europe's Popualtion: Towards the Next Century*, pp. 161-188. London: UCL Press.

MUSIL, J. (1980) *Urbanization in socialist countries*. White Plains, NY: Sharpe.

MUSIL, J. (1993) Changing Urban Systems in Post-communist Societies in Central Europe : Analysis and Prediction, *Urban Studies*, 30(6), pp. 899-905.

MUSIL, J. (2005) Why socialist and post-socialist cities are important for forward looking urban studies. Paper for the conference on 'Forward Look on Urban Science', University of Helsinki.

MYKHNENKO, V. and TUROK, I. (2007) 'European Regions and Cities Dataset 1960 - 2005: Methods and Sources', Centre for Public Policy for Regions (CPPR) Working Paper No. 3, University of Glasgow. Available at: http://www.cppr.ac.uk/centres/cppr/publications/

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.

OECD (ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT) (2006) *Competitive Cities in the Global Economy*, Paris: OECD.

OFER, G. (1976) Industrial structure, urbanization, and the growth strategy of socialist countries, *The Quarterly Journal of Economics*, 90(2), pp. 219-244.

OSWALT, P. (Ed.) *Shrinking Cities,* Vol. 1, International Research. Ostfildern-Ruit, Germany: Hatje Cantz Verlag.

OTT, T. (2001) From Concentration to Deconcentration – Migration Patterns in the Post-socialist City, *Cities*, 18(6), pp. 403-412.

PARKINSON, M., CHAMPION, T., EVANS, R., *ET AL* (2006) *State of the English Cities*. London: Office of Deputy Prime Minister.

PARR, J. B. (2007) 'Spatial definitions of the city: four perspectives', *Urban Studies,* 44(2), pp. 381-392.

PICKVANCE, C. (2002). State socialism, post-socialism and their urban patterns: theorising the central and Eastern European experience, in: J. EADE and C. MELE (Eds) *Understanding the City: Contemporary and Future Perspectives*, pp.183-203. Oxford: Blackwell.

PILKINGTON, H. (1998) *Migration, Displacement and Identity in Post-Soviet Russia*. London: Routledge.

PIVOVAROV, YU.L. (2003) The Urbanization of Russia in the Twentieth Century: Perceptions and Reality, *Sociological Research*, 42(2), pp. 45-65.

RICE, P., VENABLES, A. and PATTACHINI, E. (2006) Spatial determinants of productivity: Analysis for the UK regions, *Regional Science and Urban Economics*.

RIENIETS, T. (2005) Global shrinkage, in: P. OSWALT (Ed.) *Shrinking Cities,* Vol. 1, International Research, pp. 20-34. Ostfildern-Ruit, Germany: Hatje Cantz Verlag.

ROSENTHAL, S. and STRANGE, W. (2004) Evidence on the nature and sources of agglomeration economies, in: V. HENDERSON and J. THISSE (Eds) *Handbook*

of Urban and Regional Economics, Vol. 4, pp. 2119-2171. Amsterdam: North Holland.

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.

ROWLAND, R.H. (1998) Metropolitan population change in Russia and the former Soviet Union, 1897-1997, *Post-Soviet Geography and Economics*, 39(5), pp. 271-296.

ROWTHORN, R.E. and WELLS, J.R. (1987) *De-industrialization and Foreign Trade*. Cambridge: Cambridge University Press.

SAILER-FLIEGE, U. (1999) Characteristics of post-socialist urban transformation in East Central Europe, *GeoJournal*, 49, pp. 7-16.

SALT, J. and CLOUT, H. (Eds) (1976) *Migration in Post-war Europe: Geographical Essays*. Oxford: Oxford University Press.

SCHLÖGEL, K. (2006) The Comeback of the European Cities, *International Review of Sociology- Revue Internationale de Sociologie*, 16(2), pp. 471-485.

SMEE, J. (2006) Exodus from east leaves land of broken promises to the wolves and neo-Nazis, *The Guardian*, November 15.

SMITH, T. (2005) Slovakia's economy enjoys EU boom, *BBC News*, May 2nd (http://news.bbc.co.uk/go/pr/fr/-/1/hi/world/europe/4506109.stm; last assessed 8 January 2007).

STUART, R. C. (1984) The sources of Soviet urban growth, in: H. W. MORTON AND R. C. STUART (Eds) *The Contemporary Soviet City*, pp. 25-41. London: Macmillan.

SZELÉNYI, I. (1981) Urban development and regional management in Eastern Europe, *Theory and Society*, 10(2), pp. 169-205.

SZELÉNYI, I. (1996) Cities under socialism – and after, in: G. ANDRUSZ, M. HARLOE, and I. SZELÉNYI (Eds) *Cities after Socialism: Urban and Regional Change and Conflict in Post-socialist countries*, pp. 286-317. Oxford: Blackwell.

TAMMARU, T., KULU, H. and KASK, I. (2004) Urbanization, suburbanization, and counterurbanization in Estonia, *Eurasian Geography and Economics*, 45(3), pp. 212-229.

TASAN, T. (1999) Warsaw under transformation: new tendencies in the housing market, *GeoJournal*, 49, pp. 91-103.

TAYLOR, A. (2006) Zurich tops expats' quality of life league, *Financial Times*, April 10.

THERBORN, G. (2006) Eastern Drama. Capitals of Eastern Europe, 1830s-2006: An Introductory Overview, *International Review of Sociology – Revue Internationale de Sociologie*, 16(2), pp. 209-242.

THORNTON, J. and ZIEGLER, C. (2002) (Eds) *Russia's Far East: Region at Risk*. Seattle, WA: University of Washington Press.

TOSICS, I. (2005) City development in Central and eastern Europe since 1990: the impact of internal forces, in: F.E.I. HAMILTON, K. ET AL (Eds) *Transformation of Cities in Central and Eastern Europe: Towards Globalization*, pp. 44-78. Tokyo: United Nations University Press.

TREIVISH, A., BRADE, I., and NEFEDOVA, T. (1999) Russian cities at a crossroads, *GeoJournal*, 49, pp. 115-127.

TSENKOVA, S. (2006) Beyond transitions: understanding urban change in post-socialist cities, in: S. TSENKOVA and Z. NEDOVIĆ-BUDIĆ (Eds) *The Urban Mosaic of Post-Socialist Europe: Space, Institutions and Policy*, pp. 21-50. Heidelberg: Physica-Verlag.

TSENKOVA, S. and BUCKLEY R.M. (2004) Housing policy in transition vities: the unfinished agenda, in: S. TSENKOVA and Z. BUDIC-NEDOVIC (Eds) *Winds of Societal Change: Remaking Post-communist Cities*, pp. 83-102. University of Illinois Urbana Champaign: Russian and East European Centre.

TSENKOVA, S. and NEDOVIĆ-BUDIĆ, Z. (2006) The post-sociliast urban world, in: S. TSENKOVA and Z. NEDOVIĆ-BUDIĆ (Eds) *The Urban Mosaic of Post-Sociliast Europe: Space, Institutions and Policy*, pp. 349366. Heidelberg: Physica-Verlag.

TUROK, I. and EDGE, N. (1999) *The Jobs Gap in Britain's Cities: Employment Loss and Labour Market Consequences*, Bristol: The Policy Press.

UBS (2006) *Prices and Earnings. A Global Comparison of Purchasing Power in 71 Cities around the World*. Zurich: UBS AG.

UNDESA (United Nations Department of Economic and Social Affairs Population Division) (2006a) *World Population Prospects: The 2004 Revision,* Vol. III, Analytical Report. New York: UN.

UNDESA (United Nations Department of Economic and Social Affairs Population Division) (2006b) World Urbanization Prospects: The 2005 Revision Data Online, http://esa.un.org/unup

UNSD (United Nations Statistical Division) (2006) Population Density and Urbanization: Statistics, http://unstats.un.org/unsd/demographic/sconcerns/densurb/densurb2.htm

VITKOVSKAYA, G. (1999) Potential migration of Russian-speaking populations from Central Asia to Russia, in: G. J. DEMKO, G. IOFFE, and ZH. ZAYONCHKOVSKAYA (Eds) *Popualtion under Duress: The Geodemography of Post-Soviet Russia*, pp. 137-148. Boulder, CO: Westview Press

WHEELER, B. (2006) 1,425,000 migrants in two years?, *BBC News*, August 23 (http://news.bbc.co.uk/go/pr/fr/-/1/hi/uk_politics/5274476.stm; last assessed 11 January 2007).

WHITE, P. and SPORTON, D. (1995) East-west movements: old barriers, new barriers?, in: R. HALL and P. WHITE (Eds) *Europe's Population: Towards the Next Century*, pp.142-160. London: UCL Press.

APPENDIX

Table A.1: National abbreviation codes

Code	Country	Code	Country
AL	Albania	LT	Lithuania
BY	Belarus	MK	Macedonia
BA	Bosnia and Herzegovina	MD	Moldova
BG	Bulgaria	PL	Poland
HR	Croatia	RO	Romania
CZ	Czech Republic	RU	European Russia
EE	Estonia	CS	Serbia and Montenegro
DE	E. Germany	SV	Slovakia
HU	Hungary	SL	Slovenia
LV	Latvia	UA	Ukraine

Table A.2: Ten fastest growing and declining cities ranked by annualised rates of population change, 1960-2005

	1960s	1970s	1980s	1990s	2000-05
			Fastest growing cities*		
1.	Togliatti (RU)	Naberezhnye Chelny (RU)	Naberezhnye Chelny (RU)	Tirana (AL)	Tirana (AL)
2.	Balakovo (RU)	Nizhnekamsk (RU)	Staryi Oskol (RU)	Staryi Oskol (RU)	Sofia (BG)
3.	Naberezhnye Chelny (RU)	Staryi Oskol (RU)	Brest (BY)	Moscow (RU)	Kryvyi Rih (UA)
4.	Great Novgorod (RU)	Togliatti RU)	Ternopil' (UA)	Nizhnekamsk (RU)	Hrodna (BY)
5.	Saransk (RU)	Ternopil' (UA)	Nizhnekamsk (RU)	Shakhty (RU)	Brest (BY)
6.	Belgorod (RU)	Braşov (RO)	Luts'k (UA)	Belgorod (RU)	Minsk (BY)
7.	Cheboksary (RU)	Belgorod (RU)	Ivano-Frankivs'k (UA)	Togliatti (RU)	Bila Tserkva (UA)
8.	Rivne (UA)	Rivne (UA)	Hrodna (BY)	Hrodna (BY)	Zagreb (HR)
9.	Cherepovets (RU)	Khmel'nyts'kyi (UA)	Cheboksary (RU)	Białystok (PL)	Skopje (MK)
10.	Skopje (MK)	Chernihiv (UA)	Ul'ianovsk (RU)	Ternopil' (UA)	Mahileu (BY)
			Fastest declining or slowest growing cities**		
1.	Halle (DE)	Halle (DE)	Chemnitz (DE)	Rostock (DE)	Chişinău (MD)
2.	Greater Berlin (DE)	Greater Leipzig (DE)	Greater Leipzig (DE)	Halle (DE)	Cluj-Napoca (RO)
3.	Greater Leipzig(DE)	Ploieşti (RO)	Greater Dresden (DE)	Murmansk (RU)	Constanţa (RO)
4.	Greater Dresden (DE)	Greater Berlin (DE)	Magdeburg (DE)	Magdeburg (DE)	Galaţi (RO)
5.	Cluj-Napoca (RO)	Greater Dresden (DE)	Budapest (HU)	Tallinn (EE)	Iaşi (RO)
6.	Magdeburg (DE)	Horlivka (UA)	Erfurt (DE)	Rīga (LV)	Braşov (RO)
7.	Shakhty (RU)	Shakhty (RU)	Horlivka (UA)	Severodvinsk (RU)	Timişoara (RO)
8.	Chemnitz (DE)	Budapest (HU)	Archangel (RU)	Horlivka (UA)	Halle (DE)
9.	Brno (CZ)	Ljubljana (SL)	Ostrava (CZ)	Chemnitz (DE)	Ploieşti (RO)
10.	Erfurt (DE)	Chemnitz(DE)	Prague (CZ)	Plovdiv (BG)	Oradea (RO)

Notes: * 1 is the fastest growing city. ** 1 is the fastest declining city.

Table A.3: Trajectories of individual cities, 1960-2005

Continuous decline:					
1. Greater Leipzig (DE)					
Long-term decline:					
1. Chemnitz (DE)		2. Magdeburg (DE)		3. Budapest (HU)	
Medium-term decline:					
1. Varna (BG)	2. Prague (CZ)	3. Brno (CZ)	4. Ostrava (CZ)	5. Tallinn (EE)	6. Erfurt (DE)
7. Rostock (DE)	8. Debrecen (HU)	9. Rīga (LV)	10. Vilnius (LT)	11. Kaunas (LT)	12. Chişinău (MD)
13. Lodz (PL)	14. Wrocław (PL)	15. Poznań (PL)	16. Gdańsk (PL)	17. Bydgoszcz (PL)	18. Upper Silesian Conurbation (Greater Katowice; PL)
19. Częstochowa (PL)	20. Kielce (PL)	21. Bucharest (RO)	22. Timişoara (RO)	23. Constanţa (RO)	24. Braşov (RO)
25. Brăila (RO)	26. Oradea (RO)	27. St. Petersburg (RU)	28. Nizhniy Novgorod (RU)	29. Samara (RU)	30. Rostov-on-Don (RU)
31. Ufa (RU)	32. Perm' (RU)	33. Saratov (RU)	34. Izhevsk (RU)	35. Yaroslavl' (RU)	36. Penza (RU)
37. Tula (RU)	38. Ivanovo (RU)	39. Br'iansk (RU)	40. Kursk (RU)	41. Tver' (RU)	42. Archangel (RU)
43. Murmansk (RU)	44. Smolensk (RU)	45. Vladimir (RU)	46. Saransk (RU)	47. Tambov (RU)	48. Taganrog (RU)
49. Petrozavodsk (RU)	50. Dzerzhinsk (RU)	51. Orsk (RU)	52. Rybinsk (RU)	53. Pskov (RU)	54. Severodvinsk (RU)
55. Bratislava (SV)	56. Košice (SV)	57. Ljubljana (SL)	58. Kharkiv (UA)	59. Dnipropetrovs'k (UA)	60. Odesa (UA)
61. Greater Donets'k (UA)	62. Zaporizhzhia (UA)	63. Mariupol' (UA)	64. Luhans'k (UA)	65. Simferopol' (UA)	66. Sevastopol' (UA)
67. Kherson (UA)	68. Cherkasy (UA)	69. Sumy (UA)	70. Horlivka (UA)	71. Zhytomyr (UA)	72. Dniprodzerzhyns'k (UA)
73. Kirovohrad (UA)			74. Kremenchuk (UA)		
Recent decline:					
1. Krakow (PL)	2. Szczecin (PL)	3. Lublin (PL)	4. Gdynia (PL)	5. Radom (PL)	6. Toruń (PL)
7. Iaşi (RO)	8. Cluj-Napoca (RO)	9. Craiova (RO)	10. Galaţi (RO)	11. Greater Volgograd (RU)	12. Ul'ianovsk (RU)
13. Orenburg (RU)	14. R'iazan' (RU)	15. Naberezhnye Chelny (RU)	16. Lipetsk (RU)	17. Astrakhan' (RU)	18. Kirov (RU)

19. Kaliningrad (RU)	20. Kaluga (RU)	21. Orel (RU)	22. Cherepovets (RU)	23. Vologda (RU)	24. Kostroma (RU)
25. Yoshkar-Ola (RU)	26. Syktyvkar (RU)	27. Shakhty (RU)	28. Balakovo (RU)	29. Mykolaiv (UA)	30. Poltava (UA)
31. Chernihiv (UA)	32. Rivne (UA)		33. Ternopil' (UA)	34. Luts'k (UA)	
Growth set-back:					
1. Homel' (BY)	2. Mahilëu (BY)	3. Vicebsk (BY)	4. Babruisk (BY)	5. Sarajevo (BA)	6. Sofia (BG)
7. Plovdiv (BG)	8. Zagreb (HR)	9. Voronezh (RU)	10. Great Novgorod (RU)	11. Belgrade (CS)	12. Kiev (UA)
13. L'viv (UA)	14. Kryvyi Rih (UA)	15. Vinnytsia (UA)	16. Chernivtsi (UA)	17. Ivano-Frankivs'k (UA)	
Long-term resurgence:					
1. Greater Berlin (DE)					
Continuous growth:					
1. Tirana (AL)	2. Minsk (BY)	3. Hrodna (BY)	4. Brest (BY)	5. Skopje (MK)	6. Warsaw (PL)
7. Białystok (PL)	8. Moscow (RU)	9. Kazan' (RU)	10. Togliatti (RU)	11. Cheboksary (RU)	12. Belgorod (RU)
13. Sterlitamak (RU)	14. Nizhnekamsk (RU)	15. Staryi Oskol (RU)	16. Khmel'nyts'kyi (UA)	17. Bila Tserkva (UA)	
No definite trajectory:					
1. Greater Dresden (DE)	2. Halle (DE)		3. Ploieşti (RO)		

Table A.4: Three groups of East European cities by population trends, 1990-2005

Cities gaining population (positive growth)	Cities retaining population (negative growth above the national average)	Cities losing population (negative growth below the national average)
1. Tirana (AL)	1. Kirov (RU)	1. Halle (DE)
2. Staryi Oskol (RU)	2. Ul'ianovsk (RU)	2. Murmansk (RU)
3. Nizhnekamsk (RU)	3. Cherepovets (RU)	3. Rostock (DE)
4. Moscow (RU)	4. Chernihiv (UA)	4. Severodvinsk (RU)
5. Belgorod (RU)	5. Sofia (BG)	5. Magdeburg (DE)
6. Hrodna (BY)	6. Ivano-Frankivs'k (UA)	6. Rīga (LV)
7. Togliatti (RU)	7. Zagreb (HR)	7. Tallinn (EE)
8. Shakhty (RU)	8. Luts'k (UA)	8. Horlivka (UA)
9. Białystok (PL)	9. Kostroma (RU)	9. Chemnitz (DE)
10. Brest (BY)	10. Orel (RU)	10. Kaunas (LT)
11. Minsk (BY)	11. Babruisk (BY)	11. Budapest (HU)
12. Skopje (MK)	12. Cherkasy (UA)	12. Constanța (RO)
13. Sterlitamak (RU)	13. Varna (BG)	13. Braşov (RO)
14. Rivne (UA)	14. Penza (RU)	14. Rybinsk (RU)
15. Khmel'nyts'kyi (UA)	15. Izhevsk (RU)	15. Chişinău (MD)
16. Kaluga (RU)	16. Petrozavodsk (RU)	16. Tula (RU)
17. Kaliningrad (RU)	17. Pskov (RU)	17. Dniprodzerzhyns'k (UA)
		18. Upper Silesian
18. Cheboksary (RU)	18. Rostov-na-Donu (RU)	Conurbation (PL)
19. Astrakhan' (RU)	19. Simferopol' (UA)	19. Ivanovo (RU)
20. Yoshkar-Ola (RU)	20. Poltava (UA)	20. Kherson (UA)
21. Lipetsk (RU)	21. Craiova (RO)	21. Cluj-Napoca (RO)
22. Orenburg (RU)	22. Kryvyi Rih (UA)	22. Dnipropetrovs'k (UA)
23. Syktyvkar (RU)	23. Kremenchuk (UA)	23. Greater Donets'k (UA)
24. Ternopil' (UA)	24. Erfurt (DE)	24. Galați (RO)
25. Toruń (PL)	25. Sumy (UA)	25. Zaporizhzhia (UA)
26. Greater Volgograd (RU)	26. Vinnytsia (UA)	26. Timişoara (RO)
27. Bila Tserkva (UA)	27. Sevastopol' (UA)	27. Iaşi (RO)
28. Vologda (RU)	28. Chernivtsi (UA)	28. Dzerzhinsk (RU)
29. Greater Berlin (DE)	29. Zhytomyr (UA)	29. Luhans'k (UA)
30. Warsaw (PL)	30. Vilnius (LT)	30. Kharkiv (UA)
31. Kazan' (RU)	31. Mariupol' (UA)	31. Kirovohrad (UA)
32. Lublin (PL)	32. L'viv (UA)	32. Lodz (PL)
33. Greater Dresden (DE)	33. Sarajevo (BA)	33. Archangel (RU)
34. Kiev (UA)	34. Plovdiv (BG)	34. Odesa (UA)
35. Krakow (PL)		35. Ploieşti (RO)
36. Gdynia (PL)		36. Greater Leipzig (DE)
37. R'iazan' (RU)		37. Bucharest RO)
38. Mahileu (BY)		38. Tver' (RU)
39. Radom (PL)		39. Brăila (RO)
40. Naberezhnye Chelny (RU)		40. Orsk (RU)
41. Balakovo (RU)		41. St. Petersburg (RU)
42. Mykolaiv (UA)		42. Oradea (RO)

		43. Nizhniy Novgorod (RU) 44. Samara (RU) 45. Brno (CZ) 46. Vicebsk (BY) 47. Vladimir (RU) 48. Ostrava (CZ) 49. Taganrog (RU) 50. Smolensk (RU) 51. Tambov (RU) 52. Homel (BY) 53. Br'iansk (RU) 54. Perm' (RU) 55. Saratov (RU) 56. Bratislava (SV) 57. Saransk (RU) 58. Ufa (RU) 59. Great Novgorod (RU) 60. Debrecen (HU) 61. Prague (CZ) 62. Częstochowa (PL) 63. Yaroslavl' (RU) 64. Voronezh (RU) 65. Bydgoszcz (PL) 66. Poznań (PL) 67. Kursk (RU) 68. Ljubljana (SL) 69. Kielce (PL) 70. Gdańsk (PL) 71. Wrocław (PL) 72. Košice (SV) 73. Belgrade (CS) 74. Szczecin (PL)

Note: Cities are ranked according to their total population change rates.