

## Chapter 5

# Urban Growth Policies: The Need to Set Realistic Expectations

Paul C. Cheshire

**Abstract** This paper reviews local growth promotion policies in the light of an analysis of the drivers of differential urban growth. It starts by arguing that major shifts in urban functions interacting with European integration and the wider process of internationalisation, have produced incentives to create local growth promotion agencies. The supporters of such agencies and the agencies themselves naturally have to make claims both as to their necessity and their likely success. An analysis of growth drivers, however, shows that there is only a restricted scope for local – indeed any – policy to influence city growth. Moreover, some existing policies work directly against urban economic growth. The most successful policies are likely to be the efficient execution of well known functions, including policies to reduce the costs of city size and efficient public administration. There is a danger, therefore, not only of raising expectations with respect to the potential contribution of local growth promotion agencies but of such agencies concentrating on inappropriate actions which are more visible but likely to be less effective.

**Keywords** Urban growth • Urban policy • Agglomeration economies

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P.C. Cheshire (✉)  
Department of Geography & Environment, London School of Economics,  
Houghton St, London WC2A 2AE, UK  
e-mail: [p.cheshire@lse.ac.uk](mailto:p.cheshire@lse.ac.uk)

# 1 Introduction

There are reasons why ‘competition’ between places is seen to be increasing and city growth promotion agencies are proliferating. There are fundamental forces generating radical urban change and these forces themselves increase the incentives for ‘city growth policies’.

The function of cities throughout the world is being transformed. In the poorer countries, and those that are newly industrialising, a process is in train akin to that which occurred in Europe during the late eighteenth and first half of the nineteenth Centuries. A peasant and rural subsistence population is flocking to the cities which no longer serve as administrative and commercial centres for a dominant rural population but have become the focus of industrial production and now outsourcing of routine services. In OECD countries, the problem that was seen as de-industrialisation is now seen as transformation: a transformation as radical as that associated with the Industrial Revolution. People could have thought of the Industrial Revolution as being a process of ‘de-agriculturalisation’. Indeed, to some extent, people did and regretted the passing of the era of the peasant and a romanticised idyll of rural life. The reality was more that low productivity peasant agriculture chained the mass of the population to the countryside. Most of those who regretted the passing of the feudal age were those who were privileged by it.

In rich countries cities are no longer centres where physical things are produced; or even distributed in bulk. Factories have moved to the Newly Industrialising Countries or to low density green environments and so has wholesale distribution, borne on highways, lorries and containerisation. Cities have become again, as they were before the Industrial Revolution, places where commerce is located, people organise trade, education and business services: centres of culture and tourism, of government and, of course, places to choose to live. Higher education and health care now contribute more to the London economy than manufacturing.

Central to the success of cities are agglomeration economies: firms are more productive because they are located more closely to other firms, to households and to specialist labour. At the same time labour markets are more efficient if there are more opportunities within a given travel time/cost. The paradox is that the great majority of research until Ciccone and Hall (1996) which tried to quantify agglomeration economies looked at them narrowly as enhanced factor productivity in manufacturing. Ciccone and Hall point out the likely driver of agglomeration economies is density of economic activity (more properly ‘effective density’ to include a measure of the cost of contacts between economic agents as well as the number of economic agents within a given area) rather than just city size, although the two are positively correlated, and the service sector is a significant driver of agglomeration economies. Their conclusion, for the US, was that doubling density of economic activity increased labour productivity by 6 % all else equal.

In addition to agglomeration economies in production there are likely to be welfare, or consumption, agglomeration economies, too. Households benefit from greater variety in consumption, greater choice of neighbourhood types and opportunities for social interactions, as city size and density increase. This

consumption advantage of cities is, indeed, what Joshua and Glaeser (2006) claim is the more important driver of the recent urban revival in the US. The key evidence they cite is the rising real price of housing in cities implying that even if urban productivity and wages have been rising relative to rural areas, people are differentially choosing to live in cities causing urban house prices to rise faster than urban productivity. On the other hand, there are costs which rise with density and city size also: notably the price of space and congestion.

Interacting with this change in the functions of cities and the increasing salience of agglomeration economies has been a double process of integration. In Europe, we have deliberately promoted integration by reducing the costs and barriers to trade, investing in trans-European transport links (most obviously the Channel Tunnel and the Øresundsbron link) and reducing the barriers to labour mobility. This has reinforced an international process of 'globalisation' or internationalisation, brought about both by conscious policies to reduce trade barriers and impediments to international capital movements but also by radical technical changes in transport and communications.

In combination these changes have led to economic activity becoming very much more spatially mobile but they have also conferred advantages and disadvantages on particular types of cities. In Western Europe and North America those specialising in old, resource based activities and in manufacturing, have suffered. Larger cities, and especially those with more skilled and flexible labour, strong international connections and with a diverse range of economic activities, have gained. But the scope for economic change at the city level and the perception that economic success is more dependent on city and regional capacities has created strong incentives for local policy makers to try to influence outcomes, to develop 'growth promotion' policies.

Systematic analysis of the drivers of urban economic growth, however, show that there is only a restricted impact even the most successful local policies can have on the growth trajectory of any urban area and that most of the factors influencing differential rates of growth are outside the control of any policy maker at the local or national level. There are, however, systematic factors relating to systems of urban government arrangements and how these map onto the functional reality of urban regions that appear to condition the potential contribution – restricted though that may be – of local policy. There is thus a problem facing local policy makers and the agencies they represent. On the one hand they need to promote themselves and talk up their ability to influence local economic performance. If they do not they cannot secure the resources necessary to perform their roles. Moreover given the perception of footloose activity and growth up for grabs, they may seem to be failing in their responsibilities if they do not promote their cities as locations for growth. On the other hand, since their real ability to influence outcomes is restricted, there is a serious danger that they will set unrealistic expectations and lose credibility.

The purpose of the present paper is to try to chart a course between these two dangers and define more clearly the set of growth drivers which policy makers may hope to influence and the factors which condition their ability to successfully promote growth. In the process I hope to identify some of the actions which are potentially at least likely to be more effective and offer a better return. The conclusion here is that the most effective functions of policy are still those

derived from classic local public finance analysis. Policy is most effective at promoting growth when it is inconspicuous and facilitates actions by private actors, supplies local public goods and focuses on resolving problems of local market failure.

## 2 Why the Pressure for Local Growth Promotion?

The main factors generating increased pressure for local growth promotion were outlined in the introduction. In this section I elaborate a little on them and the influence they have been exerting on patterns of urban development. As was suggested above, European integration is really just a local, policy driven, additional element in the process of economic internationalisation affecting all trading economies. A particular feature of European integration is that not only have we encouraged trade in goods and services by reducing tariffs and non-tariff barriers but we have strongly encouraged the mobility of capital and labour. De facto labour and capital is more mobile throughout the world but this is a particular feature of integration within the European Union.

Given the increasing freedom to trade both within and beyond Europe this has led to an increasing footlooseness of economic activity. Not only the whole European market can be served from any point within Europe but a multinational can trade beyond the European Union as well. A Japanese car plant in Britain can ship its output to Russia as well as Poland: an American pharmaceuticals company can sell its French manufactured drugs in North Africa.

There are net gains from free trade and factor mobility but these gains can only be realised if there are losers as well as winners. The Cecchini Report (CEC 1988) and associated studies such as Buigues et al. 1990, for example, identified four sources of gain from European integration. These were:

1. The ability to exploit economies of scale more fully;
2. Increased competition leading to industrial rationalisation and re-organisation;
3. A greater exploitation of comparative advantage;
4. Dynamic effects from additional investment flowing from the exploitation of the above listed sources of gain.

The most cursory analysis of these sources of gain tells one immediately that there will not only be losers as well as winners but that the process of extracting the benefits will necessarily entail an uneven spatial distribution of them. If there are not, there can be no gains from integration. Exploiting economies of scale more fully and more efficient industrial organisation, imply closing smaller and less efficient plants/establishments. Exploiting comparative advantage means activities which lack comparative advantage have to close as the local market is supplied by more efficient producers elsewhere. If there are dynamic gains because of induced investment and growth, these gains, too, will be differentially located in gaining firms, plants, establishments and sectors, and the locations where these

are concentrated. That there are losers as well as winners does not mean that there is not a potential Pareto gain from the whole process; just that the winners cannot win unless in the process they are taking market share from the losers. Since firms and establishments have specific locations, and some locations will be more specialised in 'winning' activities and some in 'losing' ones, there will also be an uneven spatial distribution of the gains (and losses) from integration. There will be losing places/regions as well as winning ones.

At the same time integration within Europe reduced the incentive for national governments to control the activities of 'place promotion' agencies. If activity is more mobile, the locational choice of a firm serving the British and European market is no longer restricted to, say, either London or Manchester, any more than is that of a firm aiming to serve the Swedish and European markets confined to say Linköping or Jönköping. Firms become increasingly able to choose any comparable city-region in the EU offering a competitive location for their particular markets. So by restricting the activities of growth promotion agencies in, say, London or Jönköping, national governments had increasingly little reason to believe they would be benefiting their regions which national policy might in principle favour. Indeed this may partly explain the increasing tendency of national governments to force re-location of national agencies to such target regions: for example, the British government's requirement that the National Statistical Office move to South Wales or significant parts of the BBC move to Manchester.<sup>1</sup>

Two examples illustrate the way in which large companies exploited the opportunities created by this dual process of European integration and internationalisation. Tambrands is the dominant seller of tampons in OECD countries. Up to 1989 it served the markets of Western Europe via four national companies marketing between them 220 separate packages. It re-organised post 1990 into one EU-wide company with its HQ in London, its marketing based in Paris and selling only two basic, multilingual packages to the whole of Western Europe. By 1992 its European sales had increased 48 % and its sales per employee by 21 %.

Curzon Global Partners represents a different type of exploitation of the opportunities arising from European economic integration and internationalisation. It was a specialist US financial services company originating in Boston. Taking advantage of financial products and expertise developed in the large, integrated US market and anticipating the effects of the creation of the Euro and the freeing up of competition within the EU in financial services, it established itself with a

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<sup>1</sup> Interestingly a policy increasingly criticised as being contrary to the long term growth prospects of the poorer regions to which the agency is re-located on the grounds that the main advantage of the poorer regions is lower wage costs and government agencies typically have national wage agreements (and, even more typically, when moving, agree to do so without reduction in wages to workers who move). It is argued that the longer term result is to crowd out private sector employment in such regions and allow the public agencies to attract the most skilled labour. This is quite apart from any possibility that such activities as National Statistics or broadcasting might be subject to agglomeration economies not only affecting their own costs but affecting the costs of private sector firms in the prosperous regions.

joint venture based in London in 1997. In that year it had four European employees and no funds under management. By 2004 the company had evolved into an independent venture, still based in London, but with 100 offices across the EU, 210 employees, €10.6 bn of managed funds and €60 mn annual revenues.

In this process of integration the winning and losing regions have not been randomly distributed. Particular types of places have had specific advantages and disadvantages. Partly this reflected the sectors most affected by an increased ability to trade and re-structure. Older manufacturing sectors had had only minor barriers to trade, especially within Europe, since the 1960s but the Single European Market and liberalisation since about 1990, have particularly affected tradable services and previously protected sectors such as telecommunications, pharmaceuticals or defence related industries. These advanced sectors had a particular dependence on very highly skilled labour and because they tended to have high value to weight ratios for their products (or rely, like financial services or the media, on business travel of highly paid personnel) on accessibility to major international airports. It is not chance that industrial premises close to Heathrow airport are the most expensive per square metre of any in the world (KingSturge 2008)<sup>2</sup>. In addition, functions within sectors are differentially affected. As the example of Tambrands illustrates, HQs tended to concentrate, and concentrate in the largest cities with good international communications. London appears to have a comparative advantage in HQs of multinational enterprises. In 1990 28 % of the HQs of major European companies were in London (Rozenblat and Pumain 1993): between 1997 and 2002 35 % of new multinational HQ projects were in the London region and moreover, projects in London were weighted towards those of the biggest companies (Ernst and Young 2003). As Durantón and Puga (2005) show, functional specialisation between cities is a widespread phenomenon.

Together these changes increasing the mobility of economic activity, reducing the incentives for national governments to restrict the activities of local growth promotion agencies and the perception, based on fact, that the gains of European integration and internationalisation were up for grabs but tended to favour particular kinds of city regions at the expense of others substantially increased incentives to create local development – or ‘growth promotion’ – agencies.

Before moving on to analyse the role and potential contribution of ‘growth promotion’ there is one more aspect of urban change that should be considered: the apparently increasing importance of agglomeration economies.

Cities impose costs – of pollution, waste disposal, congestion, crime, and most systematically, of increased land/space prices. These costs all rise with city size. The fear of ‘grid-lock’ is at least 2000 years old – as old as ancient Rome. The city authorities of ancient Rome imposed their own special form of ‘congestion charge’:

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<sup>2</sup> A combination of the particularly restrictive British system of land use regulation which constricts the supply of all types of space and the strong demand for access to Heathrow by producers and distributors of high value goods and goods the value of which is significantly determined by speed and reliability of delivery (such as parts for complex machine tools, aircraft or medical equipment).

heavy wagons were only allowed to enter the city during restricted hours in the night when other traffic was lighter.

Yet despite these costs of city size large cities exist and, as we shall see below, there is evidence that larger cities have been systematically outperforming smaller ones over the past 20 years or so. So cities must 'produce' something. There must be a trade-off between the costs and benefits of increasing city size. The benefits are significantly in the form of agglomeration economies, external to individual agents and benefiting both the costs of producing and the incomes and welfare of individual households and people.

The precise mechanisms producing agglomeration economies are still imperfectly understood but there is increasingly sophisticated and persuasive research estimating their net impacts. For example Rosenthal and Strange (2004) suggest credible estimates of the impact of increasing city size on total factor productivity range from about 3–8 % for every doubling of city size. More recently a number of authors, such as Graham and Kim (2008), have produced evidence showing wide variation in the incidence of agglomeration economies between sectors, with the highest values being found in several traded services and the lowest in manufacturing and construction. It is likely that it is agglomeration economies, coupled with decreased costs of communication, that have accelerated the functional specialisation between cities noted by Duranton and Puga (2005).

But as was remarked in the introduction, larger city size does not just confer advantages on producers and factor productivity, but it also provides advantages to individuals both via the effect of city size on labour market matching, allowing for higher expected lifetime earnings (Costa and Kahn 2000), and directly on welfare. This latter effect arises through the greater choices in consumption and competition between sellers larger cities facilitate: and not just consumption of market goods and services but of more intangible 'goods' such as social interactions and the ability to choose to live in congenial neighbourhoods.

Variations in the incidence of agglomeration economies between firms and activities and the costs of city size (more expensive space is a more significant cost for a family with many dependent children or space intensive activities such as manufacturing) mean that different activities and households are likely to sort between city sizes. If preferences also vary between households in their taste for consuming 'urban' as opposed to low-density amenities and lifestyles, this would reinforce the sorting effect between sizes of cities. There is categorically no single, optimal, city-size. Because of externalities, in the absence of intervention, there may, however, be a tendency for each city to grow beyond its optimal size. If we consider a city open to inward movement then people would tend to move to the city until the marginal private benefit was equal to the marginal private cost; but since each new arrival would impose costs on existing inhabitants in the form of congestion and space prices, each city would tend to grow beyond its optimal size. This is likely to be a purely theoretical case, however, since – particularly in Europe – we impose very stringent growth controls on cities. These partly take the form of land use controls, especially the widespread application of growth boundaries (in the UK, policies of 'urban containment') and densification.

But another de facto restriction on urban growth is the effect of policies to reduce spatial disparities – universal in the EU. These reduce the growth of the largest (and most prosperous) cities in favour of smaller and more peripheral ones. This is regardless of the fact that since one feature of urban size is rising costs, higher money wages in larger cities are partly compensation for higher housing and other costs, reflecting also the agglomeration economies making labour more productive in larger cities. The differential in real wages between larger and smaller cities may be far smaller than those in money wages.

### 3 Growth Promotion as an Economic Activity

If we suspend our disbelief and assume that policy agencies promoting local growth can generate growth, then it is apparent that local growth promotion is the production of a *local public good*<sup>3</sup>. Any extra growth generated is non-rival in consumption: if one person's employment prospects improve that does not reduce those of another. And it is non-excludable. If the effects of local growth spill over to improve the prospects of neighbouring jurisdictions there is nothing the community which had expended the effort to promote local growth can do about it.

This immediately raises the question: how will growth promotion policies be provided? We need to view them as form of investment: there are costs now but returns (growth dividends) are expected in the future. So we can analyse the incentives facing jurisdictions conditioning their probability of engaging in effective growth promotion. Other things being equal a local community will be more likely to engage seriously in growth promotion the lower are the costs to them of engaging and the greater are the expected gains to participating agents.

At least in Europe, one factor determining the expected growth dividends will be the extent to which a location is exposed to potential integration effects – either because of the industrial structure of the local economy or because of its location: or a mix of both. A second, more political economy type factor, will influence the probability of forming a local growth promotion coalition. That is the extent to which local political control is influenced by representatives of agents gaining most from local growth. These will be 'rent' earners – not just local property earners but those earning quasi-rents as well, such as those who possess locally applicable but scarce skills. In addition, economic agents the revenues of which derive from the existing local economic structure will have a greater incentive to promote local growth: agents such as utilities, business service providers or dominant locally based firms. An inspection of the business supporters of almost any local growth promotion agency will provide evidence of the power of economic rents and self-interest in driving political action. The agency for London, London First, for example includes the most prominent representatives of all those sectors

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<sup>3</sup>This section draws on Cheshire and Gordon 1996.



identified above as well as some representatives of the near market sector including the London School of Economics.

The third factor, and the most important for the present analysis, is the extent of spillover losses. For a given potential expected growth dividend to the local economy, the value to any jurisdiction will be determined by the proportion of the whole local economy it represents. Take, for example, a city like Brussels. For historic and political reasons it is a bilingual enclave between the Flemish speaking north of Belgium and the French speaking south. In 1991, the population of the administrative region of Brussels – the city at the centre of the Brussels economic region, was some 960,000: but the population of its economic region, defined as the area from which workers commuted to work in the economic core of Brussels, was over 3,500,000 (IAURIF 2003). Thus any success a growth promotion agency funded by the citizens of Brussels might have would be largely lost, in the form of spillovers, to households living in other jurisdictions spread over nearly a third of Belgium.

In analysing the incentives to establish local growth promotion agencies, however, we need to consider the costs as well as the benefits. There may be some hopeless cases of regions that expect to be influenced strongly by integration and the increased mobility of economic activity but the agencies which represent them make a judgement that their location or industrial structure is so disadvantageous that no local efforts can be expected to have much impact. The incentive in such regions is therefore to lobby national governments and the EU to undertake direct redistribution: in other words, for policies at a national or European level to reduce 'spatial disparities'. For jurisdictions that judge their prospects to be better or even promising if helped by appropriate local growth promotion policies, the costs of such policies will be significantly determined by the transactions costs involved in forming an effective 'growth promotion club', typically a public private partnership led by the relevant local government or public agency. These transactions costs will increase as the number of local jurisdictions encompassing the area containing the growth dividends increases; and perhaps as there is less clearly a single, dominant, local jurisdiction to lead the others.

Together these arguments lead one to conclude that the factors which will determine the probability that any given local economic region will effectively engage in growth promotion will relate to the degree of fragmentation of the local jurisdictions within it. The larger is the leading administrative authority relative to the size of the economic region, the less will be any spillover losses from policy induced growth and the lower will be transactions costs. If we can define the area most closely approximating the 'economic region' of an urban centre, therefore, we can easily identify a variable to reflect the incentive and capacity of the city/region to form a growth promotion club or agency. If such agencies have any influence on the growth rates of the territories they represent then, in addition, this variable should be correlated with differences in growth between cities. We have a sort of 'anti-Tiebout' (Tiebout 1956) world in which local public goods (in this case extra growth) have spillover effects across jurisdictions but people are relatively immobile between jurisdictions. For a given 'economic

region' more, smaller competing jurisdictions will be associated with less production of the local public good, local economic growth promotion.

#### 4 Functional Urban Regions (FURs) Contain Growth Benefits

In the statistical results reported below we use as our units of analysis core-based urban regions – or Functional Urban Regions (FURs) – similar in concept to the Standard Metropolitan Statistical Areas (SMSAs) familiar from the US. The FURs used here were originally defined in Hall and Hay (1980) but their boundaries were slightly updated and revised in Cheshire and Hay (1989) where full details are available. Since then, the data set relating to these FURs has been continuously updated although their boundaries remain fixed as at 1971. The urban cores are identified on the basis of concentrations of jobs. Using the smallest spatial units in each country for which the basic data were available, all contiguous units with job densities exceeding 12.35 per hectare were amalgamated to identify the FUR 'core-city' (in the case of Brussels, an area containing 1,031,000 residents – more than in the official NUTS region of Brussels). The FUR hinterland was then identified by amalgamating all the contiguous units from which more people commuted to jobs in the given core than commuted elsewhere with a minimum cut-off of 10 %. These criteria were used for the great majority of countries but, in some, critical data were unavailable, so alternative methods had to be used. The most extreme departure was in Italy where previously defined retail areas were substituted for the FUR boundaries. Because of the difficulties of estimating comparable data for the FURs, in what follows we analyse patterns of growth only in the largest 121. These are all FURs in the former EU of 12<sup>4</sup> – excluding Berlin – with a total population of more than one third of a million and a core city of more than 200,000 at some date since 1951.

There are substantial advantages of using as the units of analysis functionally as opposed to the commonly used administratively defined regions. Even across a comparatively unified country such as the USA, states, counties and cities vary considerably in how they relate to patterns of behaviour or economic conditions. In Europe, the official regions (the NUTS<sup>5</sup>) are far more disparate since they combine within one system very different national systems. Even within one country – Germany – the regions vary from historical hangovers from the Middle Ages – such as Bremen (population 0.7 million) or Hamburg (1.7 million) – to regions such as Bavaria, with a population of 12.3 million and the size of several

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<sup>4</sup>That is in the countries of Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain and the United Kingdom.

<sup>5</sup>Nomenclature des Unités Territoriales Statistiques (N.U.T.S.) regions. This is a nesting set of regions based on national territorial divisions. The largest are Level 1 regions; the smallest for which a reasonable range of data is available are Level 3. Historically these corresponded to Counties in the UK, Départements in France; Provinces in Italy or Kreise in Germany.

smaller European countries run together. In terms of administrative competence, Germany has 16 of the functionally very disparate Länder (NUTS Level 1 regions), each with substantial powers and constituting the elements of its Federal system; and below that the Kreise (NUTS Level 3) – 439 of them in 2003. Britain has 12 NUTS 1 regions, corresponding in mean size to the Länder, but only one of them – Scotland – has any real administrative or fiscal independence. In Britain there are only 133 of the smaller units supposedly equivalent to the Kreise. Bavaria, despite including major cities such as Munich, had a population density of only 174 people per square km compared to 4,539 in the NUTS Level 1 region of London or 2,279 in Hamburg (CEC 2004).

More significant than their heterogeneity in size and administrative powers is the fact that the official NUTS regions are economically heterogeneous, in some cases containing very different local economies within the same statistical unit (for example, Glasgow and Edinburgh in Scotland or Lille and Valenciennes in Nord-Pas-de-Calais) and in others dividing a single city-region between as many as three separate units. The functional reality of Hamburg, for example, is divided between three different Länder, Hamburg, Schleswig-Holstein and Niedersachsen. There are thus many NUTS regions with large scale and systematic cross border commuting and some contain mainly dormitory suburban areas of large cities. Others (for example, Brussels, London, Bremen or Hamburg) are effectively urban cores or only small parts of urban cores. This means that residential segregation influences the value of variables such as unemployment, health or skills if measured on the basis of the boundaries of NUTS; and measures of Gross Domestic Product or Value Added per capita, or productivity, can be grotesquely distorted since output is measured at workplaces and people are counted where they live.

These are obvious points, causing serious reservations in relation to the many published analyses of regional growth rates in Europe, using the official Eurostat data for NUTS regions. They mean official measures of so-called ‘regional disparities’ – showing, for example, that in 2001 the ‘region’ of Inner London was 2.5 times as ‘rich’ in per capita GDP as the mean for the EU of 15 and 3.2 times as ‘rich’ as the UK’s poorest region, are complete nonsense. It is for these reasons that we rely on our own data for FURs.

A further advantage of using FURs is that they do not exhaust national territories. The total population of the EU of 12 in 2001, excluding Berlin, was some 340.5 million. Almost exactly half – 169.2 million – lived in its major Functional Urban Regions as defined here. This property of the FURs allows us to define an additional control variable: the rate of growth of GDP pc at PPS in the area of each country outside its major FURs. This is calculated over the same period as the dependent variable.

There is one critical, additional advantage of using data for FURs (rather than administrative regions) in the present context. FURs are as economically independent divisions of national territories as it is possible to construct. They represent concentrations of jobs and all those people who depend on those jobs – the economic spheres of influence of major cities. So any growth dividend a local growth promotion agency might generate – the benefits of additional employment or output – are as confined to those who live within them as is possible for any

sub national regions. In other words FURs are a close approximation of ‘economic regions’ in the sense discussed above, so the ratio of the population living in the administrative jurisdiction representing the ‘city’ to that of the FUR as a whole should provide a quantitative measure of the relevant degree of fragmentation of city government in conditioning the incentives to generate local growth promotion policies. The larger is the size of the government unit representing the city to the size of the FUR, the lower will be spillover losses from growth promotion and the lower will be transactions costs in forming a ‘growth promotion club’. We call this the ‘policy incentive’ variable. For further details see Cheshire and Magrini (2009), from which this and the following section, draws.

## 5 Some Empirical Results

Appendix Tables 5.1 defines the main variables used. The approach is first to build a ‘base’ model and test it for standard specification problems and for spatial dependence. In the latter tests we pay particular attention to the specification of the spatial weights matrix – choosing weights which maximise the indicated sensitivity to problems of spatial dependence while conforming to obvious economic logic. OLS is used to estimate the models except where there is a spatial lag, when we use maximum likelihood. We take care to minimise problems of endogeneity although we accept that our efforts do not necessarily entirely eliminate all such problems. Our position is that ultimately there must be some judgement and what matters is that any remaining endogeneity problems do not seriously influence the results.

The dependent variable is the FUR rate of growth of GDP pc at PPS measured from the mean of 1978–80 to the mean of 1992–94. There are some more or less standard control variables. We have consistently found that specific measures of reliance on old, resource-based industries – the coal industry, port activity and agriculture – perform better than more generalised measures such as employment in industry or unemployment at the start of the period (although the latter is included in one model and is marginally useful). Since reliance on the coal industry is measured with a geological indicator, it seems safe to assume it is exogenous. Port activity is measured very early – in 1969 – before the main transformation of the industry to modern methods and before any likely integration effects of creating the European Union would be apparent. Specialisation in agriculture is measured in the larger region containing the FUR – again well before the start of the period covered by the dependent variable.

In cross-sectional, cross-national analyses of regional growth, the conventional control for all country specific factors (notably the incidence of the national economic cycles but also institutional and policy differences between countries) has been national dummies. This would be problematic with our data set since in Denmark, Greece, Ireland and Portugal there are only one or two major FURs, so we would have to arbitrarily choose which countries to pool to construct national dummies. More interestingly, since we wish to infer causation, our underlying assumption must be that our observational units – the major FURs of Western Europe – are, in

**Table 5.1** Variable definitions – rate of growth of GDP pc at PPS 1978/80 to 1992/94 dependent variable

No	Variable name	Description
	Constant	
1	Population size	Population size in 1979 (natural logarithm)
2	Population density	Density of population in FUR in 1979 (1,000 inhabitants/Km <sup>2</sup> )
3	Coalfield dummy: core	Dummy = 1 if the core of the FUR is located within a coalfield
4	Coalfield dummy: hinterland	Dummy = 1 if the hinterland of the FUR is located in a coalfield
5	Port size <sup>a</sup>	Volume of port trade in 1969 (100 t)
6	Agriculture <sup>a</sup>	Share of labour force in agriculture in surrounding NUTS 2 in 1975
7	Unemployment <sup>a</sup>	Unemployment rate (average rate between 1977 and 1981 – from Eurostat NUTS3 data)
8	National non-FUR growth	Growth of GDP p.c. in the territory of each country outside the FURs (annualised rate between 1978/80 and 1992/94)
9	Policy incentive <sup>a</sup>	Ratio of the population of the largest governmental unit associated with the FUR to that of the FUR in 1981 (see below for details)
10	Integration gain	Change in economic potential for FUR resulting from pre-Treaty of Rome EEC to post enlargement EU with reduced transport costs (estimated from Clark et al. 1969 and Keeble et al. 1988)
11	Peripherality dummy	Dummy = 1 if the FUR is more than 10 h away from Brussels
12	University students <sup>a</sup>	Ratio of university students (1977–78) to total employment (1979)
13	R&D facilities <sup>a</sup>	R&D laboratories of Fortune 500 companies per 1,000 inhabitants in 1980
14	Unemployment density	Sum of differences between the unemployment rate (average between 1977 and 1981) of a FUR and the rates in neighbouring FURs (within 2 h), discounted by distance (with 10 h time penalty for national borders)
15	University student density	Sum of university students per employees in neighbouring FURs (within 2.5 h), discounted by distance (with 10 h time penalty for national borders)
16	R&D facilities density	Sum of R&D laboratories per 1,000 inhabitants in neighbouring FURs (within 2.5 h), discounted by distance (with 10 h time penalty for national borders)

Source: Cheshire and Magrini 2009

<sup>a</sup>Denote variables tried with a quadratic specification for reasons explained in the text. Never entered as squared value alone.

statistical terms, a homogeneous population. A more elegant solution to control for national factors not explicitly included as independent variables is, therefore, to include ‘non-FUR growth’ as a continuous control variable.

There are two further control variables in the base models: the size of each FUR measured in 1981 and represented as the log of the population; and the density of population in 1981. As was discussed in Sect. 2, there is evidence that agglomeration economies have been becoming more important over the past 20 or 30 years in the cities of OECD countries as structural transformation of advanced economies and the evolving functions of cities favoured activities with stronger agglomeration

**Table 5.2** Dependent variable annualised rate of growth of GDP p.c. @ PPS: mean 1978/80 to mean 1992/4; Model 1: base model OLS; Model 2: base model + spatial lag, max. likelihood

	Model 1		Model 2	
R <sup>2</sup>	0.5903		0.6053	
Adjusted R <sup>2</sup>	0.5570			
LIK	485.56		488.74	
Constant	-0.0205		-0.0240	
<i>t</i> -test – prob	-2.05	0.04	-2.55	0.01
Spatial lag of dep. variable			0.2648	
<i>t</i> -test – prob			2.61	0.01
National non-FUR growth	0.8600		0.7119	
<i>t</i> -test – prob	8.06	0.00	6.24	0.00
Coalfield: core	-0.0054		-0.0050	
<i>t</i> -test – prob	-4.25	0.00	-4.13	0.00
Coalfield: hinterland	-0.0057		-0.0054	
<i>t</i> -test – prob	-3.29	0.00	-3.37	0.00
Port size	-0.1364		-0.1416	
<i>t</i> -test – prob	-3.18	0.00	-3.56	0.00
Port size squared	0.6166		0.6550	
<i>t</i> -test – prob	2.28	0.02	2.61	0.01
Agriculture	0.0409		0.0254	
<i>t</i> -test – prob	2.55	0.01	1.67	0.10
Agriculture squared	-0.1125		-0.0737	
<i>t</i> -test – prob	-2.51	0.01	-1.75	0.08
Population size	0.0021		0.0019	
<i>t</i> -test – prob	3.16	0.00	3.11	0.00
Population density	-0.0015		-0.0015	
<i>t</i> -test – prob	-2.00	0.05	-2.19	0.03

Source: Cheshire and Magrini 2009

economies, such as financial and business services or media. The logic for including both size and density separately is briefly discussed below.

These control variables were chosen to reflect economic factors and, as the results reported in Table 5.2 show, they appear to work satisfactorily. The rate of growth of GDP pc outside the major FURs (Non-FUR Growth) proves significant and, as the models become more fully specified, the value of the estimated co-efficient tends to get closer to 1 (compare results in Tables 5.2 and 5.3). All variables are significant and have the expected signs although adding a spatial lag of the dependent variable reduces the significance of the concentration in agriculture in the wider region. There are indications of dynamic agglomeration economies – larger FURs grew faster, other factors controlled for – but once this was done FURs which were denser grew more slowly. The reasoning underlying the inclusion of these variables independently is that factors generating agglomeration economies are distinct from density itself. Agglomeration economies arise as a result of the number and net value of productive interactions between economic agents and these are larger in larger cities. Larger cities also tend to have denser population and, in studies of agglomeration economies, density of employment or population

**Table 5.3** Dependent variable annualised rate of growth of GDP p.c. Mean 1978/80–mean 1992/4 – models excluding and including ‘Spatial Variables’

	Model 3		Model 4		Model 5	
R <sup>2</sup>	0.6765		0.7413		0.7555	
Adjusted R <sup>2</sup>	0.6372		0.6986		0.7095	
LIK	499.86		513.38		516.80	
Constant	−0.0320		−0.0233		−0.0261	
<i>t</i> -test – prob	−3.14	0.00	−3.52	0.01	−2.84	0.01
National non-FUR growth	0.9442		0.8975		0.9050	
<i>t</i> -test – prob	9.22	0.00	9.07	0.00	9.31	0.00
Coalfield: core	−0.0062		−0.0051		−0.0051	
<i>t</i> -test – prob	−5.18	0.00	−3.99	0.00	−4.00	0.00
Coalfield: hinterland	−0.0042		−0.0034		−0.0032	
<i>t</i> -test – prob	−2.61	0.01	−2.23	0.03	−2.06	0.04
Port size	−0.1474		−0.1003		−0.0932	
<i>t</i> -test – prob	−3.69	0.00	−2.62	0.01	−2.46	0.02
Port size squared	0.7634		0.4871		0.4669	
<i>t</i> -test – prob	3.04	0.00	2.02	0.05	1.97	0.05
Agriculture	0.0508		0.0384		0.0478	
<i>t</i> -test – prob	3.22	0.00	2.48	0.01	3.02	0.00
Agriculture squared	−0.1345		−0.1126		−0.1231	
<i>t</i> -test – prob	−3.21	0.00	−2.82	0.01	−3.12	0.00
Unemployment			−0.0332		−0.0312	
<i>t</i> -test – prob			−2.45		0.02	
Population size	0.0021		0.0016		0.0016	
<i>t</i> -test – prob	3.53	0.00	2.90	0.00	2.87	0.01
Population density	−0.0015		−0.0015		−0.0013	
<i>t</i> -test – prob	−2.25	0.03	−2.36	0.02	−2.07	0.04
Integration gain			0.0073		0.0082	
<i>t</i> -test – prob			3.20		0.00	
University students	0.0309		0.0367		0.0303	
<i>t</i> -test – prob	2.67	0.01	3.62	0.00	2.87	0.01
R&D facilities	0.8079		0.8947		0.8512	
<i>t</i> -test – prob	2.84	0.01	3.26	0.00	3.10	0.00
Policy incentive	0.0075		0.0026		0.0086 <sup>a</sup>	
<i>t</i> -test – prob	2.24	0.03	2.45	0.02	2.49	0.01
Policy incentive squared	−0.0021				−0.0027 <sup>a</sup>	
<i>t</i> -test – prob	−1.32	0.19			−1.72	0.09
R&D facilities density			0.0531		0.0703	
<i>t</i> -test – prob			2.19		0.03	
Peripherality dummy			0.0059		0.0054	
<i>t</i> -test – prob			4.51		0.00	
University student density			−0.0025		−0.0030	
<i>t</i> -test – prob			−2.46		0.02	
Unemployment density					−0.0036	
<i>t</i> -test – prob					−1.92	

Source: Cheshire and Magrini 2009

<sup>a</sup>Test of joint significance:  $\chi^2(2) = 10.4333$  (0.01).

has often been used as the ‘explanatory’ variable. This is not inappropriate in unregulated conditions but in the conditions ruling in a number of EU countries in which there are very strong urban containment policies, density and size will vary to an extent independently of each other. Once size has been allowed for, higher density should be associated with higher space costs and more congestion and so is expected to be associated with less favourable conditions for economic activity.

We do not report the test statistics here but those for standard problems of heteroskedasticity, non-normality of errors, multicollinearity and functional form were all acceptable (see Cheshire and Magrini 2009). So, too, were tests for spatial dependence unless an additional time-distance penalty for national borders was included. Experimentation showed that indicated spatial dependence problems were maximised if this national border penalty was set at 600 min. Indeed, if no time distance penalty for national borders was included in the distance weights matrix, there was no sign of spatial dependence. The indicated textbook solution for spatial dependence is to include the spatially lagged dependent variable as an additional independent variable. Results of doing so are shown in the second set of columns in Table 5.2. The spatially lagged dependent variable is significant but makes little difference to the other estimated parameters.

Our preferred approach to problems of spatial dependence is to treat a significant result as indicating a problem of omitted variables: in the present case the omission of variables driving systematic spatial patterns of FUR growth. Table 5.3 shows the results of including such variables, plus additional variables designed to test specific hypotheses, especially the impact of government fragmentation on growth performance.

The idea that concentrations of highly skilled human capital should be associated with faster rates of real GDP pc growth (itself very closely related to productivity growth) is not novel. It is represented here as the ratio of university students to total employees at the very start of the period (to help reduce any possible problems of endogeneity). Equally, there is a large literature on the tendency for patents to be applied closer to their points of origin (see, for example, Audretsch 1998 or, for a recent application to a European context, Barrios et al. 2007). So we should expect FURs with greater concentrations of R&D activity at the start of the period to have grown faster. This is measured as R&D facilities of the largest firms per 1,000 inhabitants – again at the start of the period.

The third variable designed to test hypotheses about the drivers of economic growth is the ‘policy incentive’ variable discussed in Sects. 3 and 4. That is simply a measure of how closely each FUR’s boundaries match those of the largest effective jurisdiction<sup>6</sup> associated with the FUR. This is defined as the ratio of jurisdiction’s to FUR’s population at the start of the period. The hypothesis is that the more closely these match, the greater will be the payoff to forming an effective growth promotion club or agency, other things being equal. It could be that the advantage increases as the size of the governmental unit gets bigger than the FUR itself

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<sup>6</sup> Usually the jurisdiction representing the core city but in some cases – for example in Spain – a regional tier of government (for details see Cheshire and Magrini 2009).



(as happens in some European countries in which there is an effective regional tier of government – Madrid might be an example) because the resources and clout of the governmental unit will be bigger. But if the governmental unit is too large, the interests of the main FUR within it may get diluted by those of outlying smaller cities and rural areas. This implies – if growth promotion agencies are able to have any impact on local economic growth – that we should expect a positive relationship between the variable we call the ‘policy incentive’ and GDP pc growth with perhaps a quadratic relationship, since having a regional tier of government too greatly exceeding the size of your economic region or FUR, may dilute the positive impact on growth.

Model 3 in Table 5.3 includes all these variables and we can see they are all significant and have the expected sign. Their inclusion improves the fit of the model without significantly changing the estimated parameter values of the existing variables and only the functional form of the policy incentive variable is unclear, since the quadratic term, although it has the expected sign, is not significant. Testing for spatial dependence (see Cheshire and Magrini 2009, for details), however, reveals apparent problems if the 600 min time-distance penalty is included for national borders. This suggests that variables reflecting systematic spatial patterns are omitted.

Models 4 and 5 show the impact of including variables designed to capture such spatial influences. The first is the ‘Integration Gain’ variable, intended to capture the spatial effect of European integration. This measures the change in economic potential for each FUR, associated with European integration and transport cost reductions, and is estimated from the work of Clark et al. 1969. Partly as a response to the perceived advantage accruing to ‘core’ regions from European integration, Europe – starting from the mid-1970s – has developed stronger policies aimed at redistributing economic activity to ‘peripheral’ regions than any other political grouping. Such policies in 1972 accounted for 4 % of spending by the European Commission but increased their share of the budget to 15 % by 1980 and to some 30 % by 1994. Although their impact has been questioned (see, Midelfart and Overman 2002; Rodriguez-Pose and Fratesi 2004) it still seems worth including a variable for ‘peripherality’. To avoid subjectivity and problems of endogeneity this is arbitrarily defined as being all FURs more than 600 min time-distance from Brussels.

It is also plausible that in the more densely urbanised parts of Europe, conditions in FURs will influence each other – there will be interaction between the economic performance of neighbouring FURs. Three variables are included to try to capture this, drawing on the literature on spatial labour markets and the distance decay effect of innovations. Since there is evidence, particularly from the spatial applications of patents, that new innovations are subject to a distance decay effect and we have already seen that concentrations of R&D favour FUR growth, so, if there are concentrations of R&D in a FUR one would expect that to favour growth in other FURs close by – subject to a distance decay effect. This is reflected in the design of the ‘R&D Facilities Density’ variable. Equally if a concentration of highly skilled labour favours a FUR’s growth, then having a higher concentration in neighbouring FURs would be expected to reduce its growth since the faster growth generated in the surrounding FURs will tend to attract highly skilled

commuters away from the slower growing FUR. This is reflected in the ‘University Student Density’ variable. Finally, some studies suggest an initial higher level of unemployment is prejudicial to subsequent growth. Glaeser et al. 1995, for example, report that in their study.

Models 4 and 5, therefore, include both the initial level of unemployment in  $FUR_i$  and an Unemployment Density variable calculated as the distance weighted level of unemployment in all neighbouring  $FUR_{s_{j-n}}$  up to 120 min between centroids. The time distance cut-off applied to calculating the R&D Facilities and University Students Density variables is rather higher – 150 min. These differential cut-offs both provide better statistical performance but are also consistent with underlying reasoning. The unemployed, who are biased towards the least skilled, are likely to have a geographically more confined influence than the most highly skilled or innovation. In all cases the 600 min time-distance penalty for national borders is applied in calculating the value of these spatial interaction variables for each FUR. Again this not only performs better statistically but is consistent with underlying logic and other empirical findings.

The results are reported in Table 5.3. We can see that all variables have the expected sign and are significant at at least the 10 % level – even the quadratic term for the policy incentive variable. Tests for joint significance provide further evidence of the fact that the underlying functional form of the policy incentive variable is quadratic (with the maximum favourable impact of the relationship between FUR and administrative boundaries coming when the administrative jurisdiction containing the FUR is about 1.5 times its size). More encouraging (reported in detail in Cheshire and Magrini 2009) is the fact that all signs of spatial dependence are eliminated. As before no conventional econometric problems are indicated.

In the context of understanding the main drivers of the rate of FUR GDP pc growth these results suggest that there is evidence of dynamic agglomeration economies but – other things equal – higher population density is bad for growth. They also suggest that while the process of European integration has, indeed, favoured ‘core’ regions, policies to reduce ‘spatial disparities’ (the official aim of European regional policies) may at least in part have offset for that. The results are certainly consistent with concentrations of highly skilled human capital and R&D favouring local growth. Perhaps more surprisingly they suggest not only that local growth promotion policies may have some positive impact but the incentives regional actors face in developing such policies are themselves influential. It helps if local jurisdictional boundaries coincide more closely with those of self-contained economic regions – FURs – because given the spillovers losses from any successful growth promotion and transactions costs in forming effective growth promotions clubs, such a coincidence of boundaries means there are greater expected gains to actors. Finally, when investigating issues of spatial dependence, we find strong evidence of the barrier national boundaries still provide to processes of spatial adjustment in Europe.

Table 5.4 shows the estimated impact of each variable on a FUR’s growth rate over the period analysed by showing the percentage change in growth associated with a one Standard Deviation change in the value of the independent variable. The

**Table 5.4** Growth impact: effect on predicted growth of a change (+ or – 1 sd) of an independent variable

	Growth impact	
	Model 4	
	+1 std (%)	–1 std (%)
Population size	1.81	–1.81
Population density	–1.34	1.34
Coalfield: core	–3.06	3.06
Coalfield: hinterland	–1.29	1.29
Port size <sup>a</sup>	–2.68	3.40
Agriculture <sup>a</sup>	3.74	–5.57
Unemployment	–1.70	1.70
National non-FUR growth	6.18	–6.18
Policy incentive <sup>a</sup>	2.97	–4.13
Integration gain	3.36	–3.36
Peripherality	4.16	–4.16
University students	1.92	–1.92
R&D facilities	2.24	–2.24
Unemployment density	–1.26	1.26
University students density	–2.69	2.69
R&D facilities density	2.91	–2.91

Source: Cheshire and Magrini 2009

<sup>a</sup>The effects of port size, agriculture and the policy incentive variables are calculated through the estimated quadratic relationship.

most obvious point here is how diffused the impact of the growth drivers is. Although the performance of the national economy outside the area of the FURs – included to control for national factors including differences in the temporal incidence of the economic cycle across countries – has substantially the largest influence on growth differentials, the influence of the others is relatively evenly distributed. Rather like the most significant factor determining the probability of someone being rich is having rich parents the most important influence in determining how fast a city's economy grew was how fast the economy of the non-urban area of the country in which it was located grew. The impact of the dummy variables (located in a coalfield or whether the FUR was classified as peripheral) is probably overstated by the measure used in Table 5.4. So the only other variables standing out at all as having greater influence were concentrations of the most highly qualified labour and R&D facilities in the FUR itself and in its neighbours, the systematic spatial impacts of integration and the policy incentive variable.

## 6 Main Conclusions for Urban Policies

The first and most obvious conclusion is that economic growth at the level of the city-region is a multivariate process. No individual determinant is dominant and the process is significantly path dependent because many of the fundamental drivers

reflect an inheritance of industrial structure – past dependence on resource based industries such as coal or port activity being a particular and continuing disadvantage – or factors such as city location, size or density. Moreover, while it is necessarily true that better city growth contributes to national growth performance, it is too simple to assert that ‘cities are the drivers of growth’. Agglomeration economies appear to be more salient than perhaps they were when the leading sectors were heavy manufacturing industry but there is a pervasive influence of national factors. These include institutional arrangements, educational systems, legal frameworks and macroeconomic policies as well, perhaps, as more intangible factors such as culture. National non-FUR economic performance is the single most influential variable explaining differences in city performance.

The findings do not suggest many obvious ‘policy levers’ available at the local level. Some possibilities would seem to be the provision of highly skilled – graduate – labour, R&D activity and perhaps density (in so far as higher density for given size represents a policy failure rather than topographical constraints). Even these have question marks against them. While in principle constraints on urban land availability could be relaxed it is, as policy makers in Britain have found, difficult to implement. There are strong vested interests bound up in the status quo once land use regulation has helped generate asset values and a spatial distribution of amenities. Even if there was a relaxation of land use constraints, the impact on urban density would be a long time coming since new construction is such a small proportion of the stock of buildings.

Equally it is not clear that even if city authorities or growth promotion agencies could create new universities, or expand existing ones, the impact would be the same as starting with a higher concentration of university students per employee. New universities, and the students they attracted, might differ in unobservable ways from established universities. Similarly dirigiste policies with respect to the location of private sector R&D do not have a great history of success. Forcing companies to locate their R&D facilities in particular cities might simply slow innovation in the company. Setting up new publicly assisted R&D establishments would not be equivalent to firms’ own R&D activity.

The most hopeful ‘policy lever’ would seem to be reform of administrative structures so that the boundaries of jurisdictions responsible – at least for certain strategic functions with significant spatial spillovers such as growth promotion – closely approximated those of FURs. Even though this might seem a simple ‘policy lever’ still there are arguments that suggest its impact might not be symmetric. Increasing the size of the area administered by all those city jurisdictions much smaller than their FURs might not have the simple effect suggested by a direct interpretation of the results reported in Tables 5.3 and 5.4. The analysis reported in these does provide evidence that city-regions equipped with more effective government structures perform better, so indirectly it supports the claim that local development efforts on average have a favourable impact. Many local growth promoting policies, however, may displace growth from other FURs: not increase total growth. So the success of the more successful FURs, with ‘effective’ local government structures, may result partly from failure of the FURs with fragmented government

structures. Moreover even some policies which increase the total growth in the system of cities may also have 'displacement effects'. For example, if a jurisdiction improves its infrastructure that may increase total factor productivity and so growth for existing firms within the FUR but it also may attract mobile investment which would have located in some other FUR. Equally, improved training may increase system growth but in so far as one FUR has a more skilled labour force than other(s) it may attract mobile investment. While it may be the case that a more successful London or Stockholm has positive growth spin-offs in other FURs, we cannot at present quantify these and there may be displacement effects as well.

It is probably safest to assume that local growth promotion policies – in so far as they are effective – mainly generate growth which is a mixture of displacement and system wide growth, although the balance between those two will depend on what policies are pursued. Location incentives (in so far as they have any effect) are likely largely to displace growth from other locations: effective training policies, at the other extreme, are likely mainly to be system enhancing since the trained can move elsewhere as well as apply their skills locally. And some local growth policies, such as advertising the attractions of your city, are quite likely to be pure waste in that they have no influence on the behaviour of economic agents. So even though it seems plausible that a FUR with fragmented jurisdictional boundaries could improve its chances of developing effective growth promotion policies by reforming them so those for strategic actions minimised spatial spillovers, still the gains to the FUR in question and to the system of cities as a whole, would be unlikely to be as large as a simple reading of Table 5.4 might indicate.

This is still abstracting from what types of policy are most likely to help local growth prospects. Can cities become more 'competitive'? Firms can be more competitive in a simple sense. They produce a more or less homogeneous product or set of products. They have identifiable markets and any increased competitiveness is readily judged by profitability. Moreover firms have 'entry' and 'exit' options. They can stop selling a product line or, indeed, go out of business altogether. Cities, in contrast, have no 'product' or obvious market. They have a very heterogeneous 'offer' and, in practice, no 'exit' (even entry) option. It is not even obvious how any increase in a city's 'competitiveness' could be accurately measured. While it might be an increasing relative rate of growth of total factor productivity, there is the problem of the counterfactual. Even if total factor productivity is relatively falling, it might – as a result of effective growth policies – be falling less sharply than it would otherwise have been doing.

In very general terms, policies which make a city a more attractive place to live, work or do business would seem to be those that would make it more competitive. The more attractive a city is to live in then, other things equal, the lower the effective costs of production will be. People will want to live there, so at the margin they will take lower real wages and money costs of production will be lower. However, even this may not be true in full spatial equilibrium since the greater attractiveness of the city would tend to get capitalised into housing costs so bidding up money wages.

There certainly does not seem to be a simple policy recipe for direct policy actions of a dirigiste type. All cities start with different endowments and offers, so picking winners seldom works. There are too many relevant variables determining

what activity might have a fundamental comparative advantage in a given city and no knowledge of the individual quantitative effect of any given variable. It is unlikely that policy makers are omniscient. A market mechanism which weeds out the unsuccessful new efforts, plenty of new start-ups, and a system which facilitates such start-ups, is likely to be the best way of 'picking winners'. The non-winners disappear but the winners thrive.

Policy makers' efforts to predict specific future developments do not have a good track record. The city fathers of Frankfurt determined to get the new European Central Bank to locate there and made substantial efforts to achieve that aim in the early 1990s. It seemed highly plausible that doing so would assist the competitive success of Frankfurt's already successful financial and banking sectors. The Euro has proved to be successful. But as a financial sector London – which did not even join the Euro zone, let alone secure the location of the European Bank – outperformed Frankfurt as a financial centre throughout the 1990s and through to 2007. Frankfurt, which till 1994 had been economically the most successful city within the EU, has had a sluggish economic performance ever since. About the only example of a 'picking-winners' strategy that seems to have been successful is the aerospace industry in Toulouse: and that was more or less by accident. In the 1920s the French government want to establish their emerging aircraft industry as far from the German border as possible and Toulouse was the most distant city with a significant university.

There would seem to be a fundamental reason why in fact 'picking-winners' is unlikely to work. It works against the very strengths of cities. This is their diversity which tends to come with size, as well, perhaps, as their typically more highly educated population, better communications and higher intensity of interactions. The result is not only more new ideas and innovation more rapidly diffused but more commercial ideas and opportunities coming forward and resulting in business start-ups. As noted above, of these start-ups, the successful grow. But a policy of public taxes being used to back winners is likely to crowd out diversity and activities which would otherwise have started up. And some of those would have been real winners. So using public resources to pick winners endangers unknown, future successes. In general, cities are more successful if they are bigger and brighter and have policies to facilitate, rather than restrict, growth and innovation.

The best policies seem likely to be the least glamorous and activist and the most discrete. As was reported above, there is real evidence that larger cities have a competitive edge because of agglomeration economies. But larger city size brings costs: particularly higher space costs but also greater congestion and, typically, crime and pollution. One obvious set of policies to support economic growth are those, therefore, which reduce the costs of city size, especially where those costs arise at least in part because of market failure. Here the most obvious example of would be congestion. As is well known, congestion entails a problem of market failure since marginal users (whether of roads or other transport systems) only pay the marginal private costs of congestion not the social costs which result for all existing users when a marginal user joins the network. Primitive boundary fees – such as that imposed in London – hardly address the underlying problem. Charges

need to reflect as closely as possible the marginal social cost imposed by an additional user at any specific place or time. Devising and imposing congestion charging which proxies this cost<sup>7</sup> will lead to a more efficient use of the system as a whole as well as reducing congestion for any given total of potential users. So, as well as providing for mass transit systems when the size and traffic density of a city reaches an appropriate threshold<sup>8</sup>, by imposing well designed congestion charging city policy makers can favourably influence total factor productivity and urban economic growth.

Policies to reduce crime and pollution are widely discussed and crime reduction in US cities has been cited by Glaeser and Gottlieb (2006) amongst others, as one of the drivers of the relative resurgence of American cities. The analysis offered in this paper suggests a regional tier of government with the appropriate responsibilities (those where the spatial range of policies extends to the economic region or FUR) can help. It also suggests that policies aimed specifically at restricting the physical growth of cities will be damaging to economic growth. This seems to be a clear cut case of policy, rather than market, failure since many countries practise through their land use regulation regimes, policies of urban containment and urban densification. This will increase the costs of space in cities for any given size and so not just restrict their growth physically but also in terms of their economic mass and the agglomeration economies that come with that. Indeed, via its backing for 'sustainable cities' and 'multi-polarity' in the name of 'balanced growth' the European Commission supports restricting the growth of larger cities. There is no clear evidence that either densification or urban containment reduces energy use. By increasing congestion for a given total size and increasing the length of commuting by forcing people to move across 'Green Belts' to satellite communities, urban containment policies may well, in fact, increase energy use. On the basis of the evidence presented here, urban containment policies would seem not only to restrict the economic growth of individual cities (lost agglomeration economies and more congestion) but also restrict economic growth in the system as whole since agglomeration economies contribute most in the largest cities.

The fundamental condition for successful growth promotion however, is efficient public administration: a system which embodies transparent and effective decision making. Clear cut and well known rules for decision making and transparent routes by which actors can influence decisions, coupled with speed and consistency in decision making, all seem obvious but are sadly rare. Clarity, transparency and consistency in public decision making reduce uncertainty for private investors. The British land use planning system has been an example of a failure to obey these simple rules. The protracted delays and immense expense associated with

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<sup>7</sup> An interesting solution which does not rely on universal GPS was devised (but not implemented) for the City of Cambridge in the UK. This was a smart card plus reader which charged for time spent stationary with the engine running or moving for a given period at a given (slow) speed.

<sup>8</sup> In general as is argued by Eddington 2006, investment in transport infrastructure should follow demand rather than try to lead it (a form of picking winners). There is scant evidence that new transport infrastructure generates growth in a lagging region but plenty that a lack of infrastructure in a growing, prosperous and congested region imposes significant costs.

major decisions about new development in Britain have been widely remarked on (see Barker 2006a, b or Eddington 2006). The decision as to whether to allow a fifth terminal at London's Heathrow airport took 12 years and the direct costs were of the order of £100 million. The indirect costs, in terms of foregone investment where that investment relied on an efficiently functioning Heathrow, are unquantifiable but likely to have been orders of magnitude greater.

Thus the recommendations for policy to assist a city's economic growth are rather low key. The most successful policies are likely to be the efficient execution of well known functions, including policies to reduce the costs of city size and efficient public administration. Efficient public administration includes a requirement to design jurisdictional boundaries which minimise inter-jurisdictional spillovers. Policy needs to off set for market failures in urban systems and provide appropriate levels of local public goods, including transport services and training. Policy needs undramatically to facilitate innovation and that includes allowing physical development. While continuing to offset for problems of market failure related to patterns of land use, still policy needs to permit city growth rather than restrict it; and above all, perhaps, it needs not to do obviously stupid things which may include highly visible and apparently pro-growth actions such as using citizens' taxes to subsidise inward investment or attempting to pick winners. There is a danger, therefore, not only of unrealistically raising expectations with respect to the potential contribution of growth promotion agencies but of such agencies concentrating on actions which are highly visible but likely to be less effective.

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