Core Cities UK

Powering Up the Core City Economies: Some Policy Issues

cambridge econometrics
clarity from complexity

Policy Report

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Executive Summary

Policy background and context

The UK's Core Cities, at their full potential, have the ability to make a major contribution to the national UK economy. Together, the Core Cities account for around 25 percent of national output, slightly more than London. However, if the Core Cities had grown at the same rate as London between 1992-2015, they would have contributed at least an additional £120bn to the national economy.

How to raise the prosperity and performance of the UK's Core Cities is therefore a vital policy task. In the 1970's and 80's the Core Cities economic output was at around the same level or above that of London and the national economic average, but has reduced in relative terms in recent decades, predominantly due to their loss of key (manufacturing) industries and the subsequent difficulties they faced in restructuring their economies within the context of national and wider globalisation forces.

The Core Cities do not benefit from the same political and fiscal autonomy that London enjoys, providing a constraint to their future growth. This raises important questions concerning the need to devolve and decentralise the national economy further, so as to permit the UK's Core Cities (and other cities) to develop and compete on a 'level playing field'.

Policy implications

As argued by Paul Krugman (2006), having appropriate policies in place (which include fiscal autonomy, skill and education development, support for business clusters, adapting and upgrading inherited industrial specialisms, the provision of high quality infrastructures, and strategic public investments), old slow-growing regions (and by extension, cities) can be revived – or given what he calls a 'second or third wind'.

There is an incontrovertible argument, therefore, that national policy initiatives, whether infrastructural investment, industrial support, technology spending, or other measures, should be explicitly targeted far more on the Core Cities' economies. These areas are major centres of economic activity and need to be factored far more prominently into national policy-making. Unless and until there is a significant degree of spatial rebalancing of the national economy following the decentralisation of the political and institutional structures underpinning the national economy, the scope for 'catch-up' by the Core Cities is likely to be restricted.

A place-based response to the complexity of the city economy

The nature and success of policy interventions will depend, among other things, on the degree of local fiscal and policy autonomy, the resources at the city's disposal, local leadership, the nature of strategic planning, and the success to which a city is able to attract and harness national level initiatives and programmes.

Cities can have several policy levers at their disposable to boost their economic performance, and it is important to specify their aims from the start. Examples of broad aims include:

(i) promoting a city's dynamic comparative advantage – the ability of a city to adapt its economic structure to maintain its productivity and competitiveness is a key building block of a city's economic resilience to shocks. Policy will need to promote the conditions that maximise the potential for new firms, new technologies, new industries and new skills to develop to replace those in decline or no longer at the forefront of productivity or technological advance;

(ii) promoting inclusive growth – the creation of an employment base not only sufficient to provide jobs for all those seeking work, but also consisting of good quality jobs paying decent wages across its population. Short-term policy actions include measures that improve the minimum wage to a liveable standard, while longer-term policy actions need to focus on raise the skill levels across a city's workforce while at the same time promoting and supporting the economic activities that will enable those skilled workers to find local jobs;

(iii) building the resilience of its economy – promoting an economy that is able both to better resist shocks and disruptions and to successfully recover from them when they do occur. Economic policies at the national level or local (regional and city) level have not hitherto been concerned with building resilience, yet the latter is central to long-run prosperity;

(iv) raising the quality of life of its population – the general well-being of individuals and societies, from cost of living, physical health, family, education, employment, wealth, safety, transport, security to freedom, religious beliefs, and the environment enable the city to attract and retain high quality jobs and workers.

In order to achieve these aims, Core Cities need to focus on

- forging a city-based industrial strategy;
- building skills and human capital;
- boosting public infrastructure, including connectivity among the northern cities;
- devolving fiscal and governance powers to the cities;
- stimulating innovation;
- building local capital markets (especially funding for SMEs, venture capital circuits, etc); and
- more generally developing intermediary institutions that help cities pool resources and thus achieve economies of scale.

Forging a '*City Industrial Strategy*': growth *and* resilience

Differences in resilience among cities can be a source of divergent long-run growth trajectories. The issue of 'resilience building', of promoting both greater resistance and recoverability from economic shocks, should therefore be a key consideration in policy-making. Building economic resilience for sustained growth will entail focusing policy simultaneously on several inter-related aspects of an integrated strategy involving at least three main aspects of a city's economy:

(i) The various elements and fundamentals (the industrial 'ecosystem') that promote local dynamic competitiveness;

(ii) a local economic environment and culture that inspires business confidence and commitment;

(iii) a local institutional system of support and leadership, with a collective vision for the city's development.

At the city level, there is a question whether cities should seek to develop particular new specialisms as the basis for a new phase of growth, or whether diversification is most conducive to growth. In reality, it is likely that cities should adopt policies that promote a mix of specialisation and diversification activities, focusing on innovation and technology-led growth, allowing a city to be adaptable and dynamic in the future. In addition, enhancing a city's physical and strategic connection with neighbouring Core Cities, is likely to foster joint development visions that can have major economic gains.

1 Introduction

1.1 Background

This study by Cambridge Econometrics (CE), in association with Prof Ron Martin (University of Cambridge), follows on from a report submitted to the Core Cities UK (November 2018) concerning the economic performance of the Core Cities over the period 1980-2015, and the desire to extend the analysis with a more focussed discussion on the policy implications and proposed agenda for the Core Cities.

1.2 Method and objectives

While specifying detailed policies for the Core Cities, jointly or individually, is beyond the scope of this short report, the analyses in our main report, referred to above, supplemented by other work we have undertaken on the economic performance of the UK's cities and regions (see, for example, Martin, 2015; Martin, Pike, Tyler and Gardiner, 2015; Martin and Gardiner, 2018; Martin, Sunley, Gardiner, Evenhuis and Tyler, 2018) suggest a number of comments relating to the policy challenge and options facing the Core Cities.

1.3 Report structure

The remaining parts of the report are as follows.

Chapter 2 presents the policy context, in terms of the UK's degree of spatial imbalance, different city structure, and recent policy initiatives aimed at redressing the issue. Chapter 3 looks at the specific city-level policies which can help to drive the rebalancing initiative and give the Core Cities further economic impetus. Chapter 4 then moves on to look at the strategic implications of the preceding analysis, namely by proposing a city-level industrial strategy, which focuses both on growth performance as well as entrenching and recognising resilience as an important feature of related policies. References are also provided in the final section.

2 The Policy Context

2.1 Core Cities and the urgent need for economic rebalancing

How to raise the prosperity and performance of the UK's Core Cities is a vital policy task. In the 1970's and 80's the Core Cities economic output was at around the same level or above that of London and the national economic average, and although still a significant share of UK output, has reduced in relative terms in recent decades.

In most instances, the key problem behind their under-performance has to do with their loss of key industries, particularly manufacturing activities, that had provided the basis of their former growth, and the difficulty they have faced in re-orientating their economies around the new growth activities of the contemporary era and coming decades, and in finding new roles not just in the national economy, but in the wider global economy. While all of the Core Cities perform important functions as major consumption and cultural centres, and have sizable public and administrative sectors, their economic success also depends on exports, whether of goods or services. As the famous North American urbanist Jane Jacobs argued many years ago, cities rise and fall, in relative if not in absolute terms, depending on the competitiveness of their export activities.

London, as the nation's single largest centre of manufacturing has also confronted the same challenges. But in its case, it has benefited from two fundamental advantages not enjoyed by other UK cities. First, it has long been the nation's financial capital, and was to some extent already a leading international financial centre when deindustrialisation set in, so that it was well placed to benefit from the deregulation and globalisation of finance and banking that the national Government began from the mid-1980s onwards (so-called 'Big Bang'). Much of London's economic turnaround since then can be attributed to the success of its financial nexus, and its leading role as a global financial centre. Second, and again of long-standing significance, London is the seat of not just financial power in the UK economy but also of political power, containing as it does all the major seats of what is one of the most centralised political and policy systems among OECD nations. Even if unintended, this has put London in a unique position to influence national policy-making, from fiscal and monetary policy to control over public finances and public spending across the regions and cities of the UK. It has also enjoyed a level of political and fiscal autonomy simply not available to other major cities across the nation. *In short, the UK's political economy is highly spatially biased in favour of the capital, a bias that has long been an institutionalised feature of the UK*. This raises important questions concerning the need to devolve and decentralise the national economy, so as to permit the UK's Core Cities and other cities to develop and compete on a 'level playing field'.

2.2 Unlocking the economic potential of cities

The 'spatial rebalancing' challenge is not peculiar to the UK: a similar concern can be found in the US for example, where many of that country's former successful industrial cities have also experienced intense deindustrialisation since the end of the 1970s, and where there too there is a focus on reviving and re-orientating their economies (see for example Helper et al. 2012; Rothwell et al, 2015; Agtmael and Bakker, 2016; Berube and Murray, 2018).

Some commentators are gloomy over the prospect of old industrial cities recovering from deindustrialisation and reconfiguring their economies around new activities. Thus, according to the eminent urban economist Ed Glaeser (2011, p.67), "the path back for declining industrial towns and cities is long and hard. Over decades they must undo the cursed legacy of big factories and heavy industry". More recently, he has at last acknowledged that place-specific policies can play a key role in leading that 'long path' back to economic prosperity (Austin, Glaeser and Summers, 2018). Other commentators, however, take a more optimistic view. Paul Krugman (2006), for example, argues that with appropriate policies (which include fiscal autonomy, skill and education development, support for business clusters, adapting and upgrading inherited industrial specialisms, the provision of high quality infrastructures, and strategic public investments), old slow-growing regions (and by extension, cities) can be revived – or given what he calls a 'second or third wind':

> "There is good reason to think that policy can make a difference to regional [city] development even though at the same time it is very hard to know exactly what the right policy is… there is international evidence that regions [and cities] can find a second or third wind by understanding their factor price advantages, by examining their historic legacy, by judicious public spending, and by an appreciation of the role of an educated labour force, of quality of life and of infrastructure in influencing future prosperity" (Krugman, 2006, p. 47).

And according to van Agtmael and Bakker (2016) a combination of forces – local universities, visionary leaders, regional and city government initiatives, start-ups and big corporations - is helping to reinvent some of America's 'rustbelt' city-regions as centres of innovation and what they term new 'brainbelts'.

2.3 Recent initiatives in the UK: significant but not sufficient

In recent years, the UK Government has acknowledged that our national growth model has become too dependent on just a narrow range of economic activity – especially finance and associated sectors – in just one corner of the country (London and the surrounding South East), and has recognised the need to 'rebalance' the economy spatially, to 'power up' the nation's other major cities (see Martin and Gardiner, 2018).

In this context, recent national-level policy developments would appear to be useful steps in the right direction. These include: the declaration of a commitment to boost the major cities making up what George Osborne, when Chancellor of the Exchequer, called the 'Northern Powerhouse' (Manchester, Liverpool, Leeds, Sheffield, Newcastle); similar commitments to other pan-city initiatives e.g. Midlands Engine; the decision to construct a new High Speed Two rail link (HS2) from London to Birmingham, Manchester and Leeds; the granting of certain devolved fiscal and other powers to a limited number of major cities and combined authorities, with their own new 'metro-mayors'; a number of City Deals intended to support economic growth and job creation; a National Infrastructure Commission to advise central Government to undertake a nation-wide infrastructure assessment; and the introduction of a new, 'place-based' National Industrial Strategy. These are all welcome, and could potentially provide some of the building blocks for a much-needed policy programme to stimulate growth in the Core Cities and spatially rebalance the national economy.

However, these various initiatives are not well coordinated, operationally or spatially, nor based on any coherent strategy specifically focused on the Core Cities or other major city-regions. The Government's commitment to promoting a 'Northern Powerhouse' to "rival that of London" seems to have lost momentum, and arguably has fallen victim to the demand of securing a satisfactory Brexit outcome.

Further, while devolution is certainly necessary for 'powering up' the economies of the Core Cities, and other areas outside London, of itself it is not likely to be sufficient. Much will depend on the scale of financial resources and powers actually devolved (an issue that had been raised by Lord Heseltine in his report *No Stone Unturned*, 2012), and how far devolution goes beyond what appears to be the existing priority of 'contract over real governance' (Sandford, 2016).

And despite its claim to be 'place-based', the new Industrial Strategy merely regards place as one (and the last) of 10 key pillars of a national policy. As the leading North American urbanist, Jane Jacobs (1984), famously argued, it is impossible to understand the 'national' economy without explicit reference to the performance and developmental needs of the cities and city regions of which it is composed. It is in cities that the bulk of a nation's wealth is created, its exports are produced, its jobs are located, and its incomes are spent. 'Place' is not some separate 'pillar' of industrial policy, a simple 'add-on' dimension, but should be the central foundation on which to base and spatially configure key national policies on innovation, technology, skills, infrastructure, and so on.

Together, the Core Cities account for 25 percent of national output, slightly more than London (24 percent). Between 1992-2015, London's output grew by 87 percent in real terms; that of the Core Cities collectively by 38 percent. If the Core Cities had grown at the same rate as London, they would have contributed at least an additional £120bn to the national economy. There is an incontrovertible argument, therefore, that national policy initiatives, whether infrastructural investment, industrial support, technology spending, or other measures, should be explicitly targeted far more on the economies of the Core Cities. The latter are major centres of economic activity and need to be factored far more prominently into national policy-making.

The Core Cities could also have a key role to play in the rebalancing of the country in a post-Brexit world, whatever that may look like. There is strong evidence (see, for example, Rodríguez-Pose, 2018) that one of the primary causes for the Brexit vote was the degree of spatial imbalance and the feeling of being left behind, with the majority of benefits from globalisation and integration seemingly going mostly to London and the Greater South East. Whatever the final outcome of the Brexit process, there is a strong need to address these imbalances in a thorough way, looking at the manner in which economic, financial, political, and cultural forces have become centralised over the past few decades and exploring ways of redressing the balance. While this report deals mostly on the economic and financial forces, one recent idea put forward by the Economist (2017)[1] focussed on political centralisation and the idea that Parliament should move north to Manchester, particularly in the context of the vast repairs needed on the Houses of Parliament. Perhaps a bolder plan could be considered whereby Parliament rotates between the Core Cities, in the same way that the Royal Court moved around the country in Tudor times. Such a move would truly signal a real political desire for rebalancing, and make politicians more acutely aware of the issues in different areas of the kingdom.

[1] See https://www.economist.com/bagehots-notebook/2017/02/23/the-pragmatic-case-for-moving-britains-capital-to-manchester. Also the Guardian https://www.theguardian.com/politics/2017/jul/18/the-case-for-and-against-moving-parliament-out-of-london.

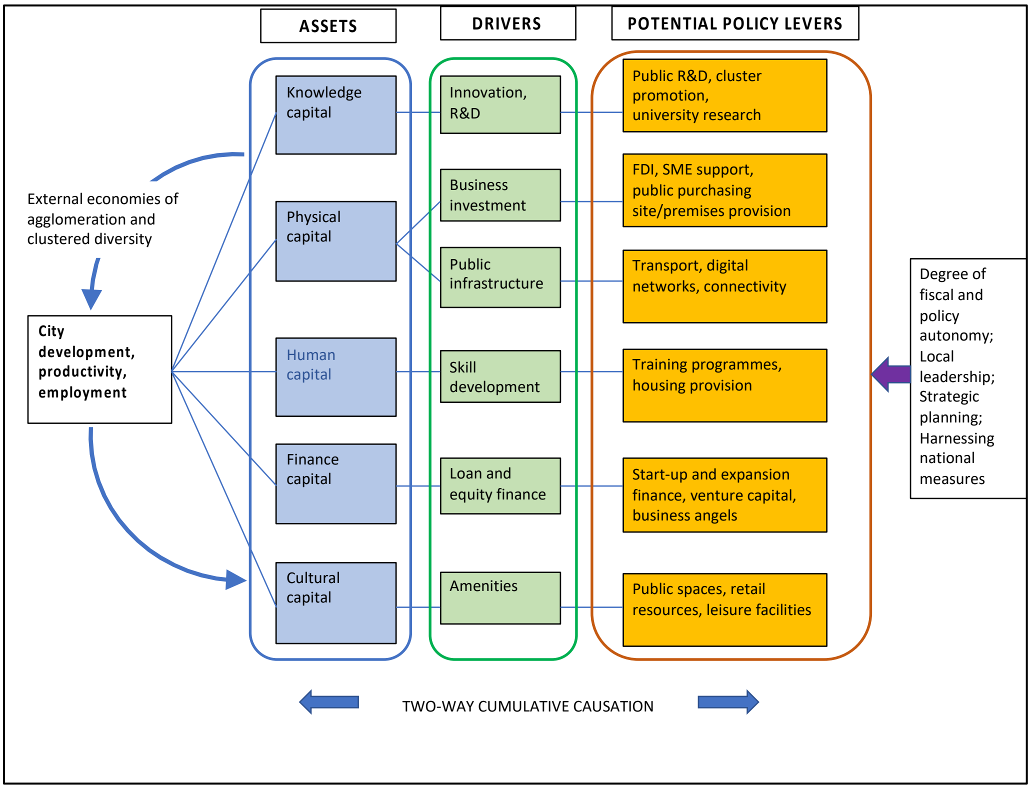
3 City Level Policies

3.1 A place-based response to the complexity of the city economy

Several features revealed by the analyses in the accompanying economic performance report raise policy issues at the city level. The specific policies needed will obviously vary across each Core City. The research for the first report was not intended to investigate each Core City's economy in detail, and hence we are not able to discuss potential specific policies But considered as a group, some 'generic' issues can be identified. In his discussion of how lagging and old industrial regions can be given 'second or third wind', Krugman (2006) makes a simple but useful distinction between a region's or city's *fundamentals* which are largely place-specific immobile resources and assets, and its *growth and development dynamics*, that is the particular form of a city's or region's economic growth, and the external economies' that are themselves a consequence of that pattern of economic development.

While useful, this simple distinction fails to capture the complexity of the policy challenge of reviving or boosting a city's economic performance. For example, a city's economy can be viewed as comprising key *assets* that in turn shape the *drivers* of city growth, prosperity and productivity, which in turn offer various *potential levers for policy* intervention and support: see Figure 3.1 (the list of potential policy levers shown there is meant to be illustrative rather than exhaustive).

Figure 3.1: The City Economy as a Complex Policy Field



Based on OECD (2018)

The nature and success of policy interventions will depend, among other things, on the degree of local fiscal and policy autonomy, the resources at the city's disposal, local leadership, the nature of strategic planning, and the success to which a city is able to attract and harness national level initiatives and programmes. Note that there are two-way or recursive causal influences at work in Figure 3.1, in that policies can influence the drivers of a city's development, which drivers then reshape the city's key assets. In effect a process of two-way cumulative causation is involved. The policy aim is obviously to make that process a virtuous one, leading to a continual positive adaptation of the city's economy. Note also that the local accumulation and upgrading of a city's assets can generate positive external economies of agglomeration.

3.2 Identifying the major policy aims

But if Figure 3.1 identifies some of the potential policy levers for a city's economy, what should be the *aims* of policy? Figure 3.2 show four such broad aims:

(iv) promoting a city's dynamic comparative advantage;

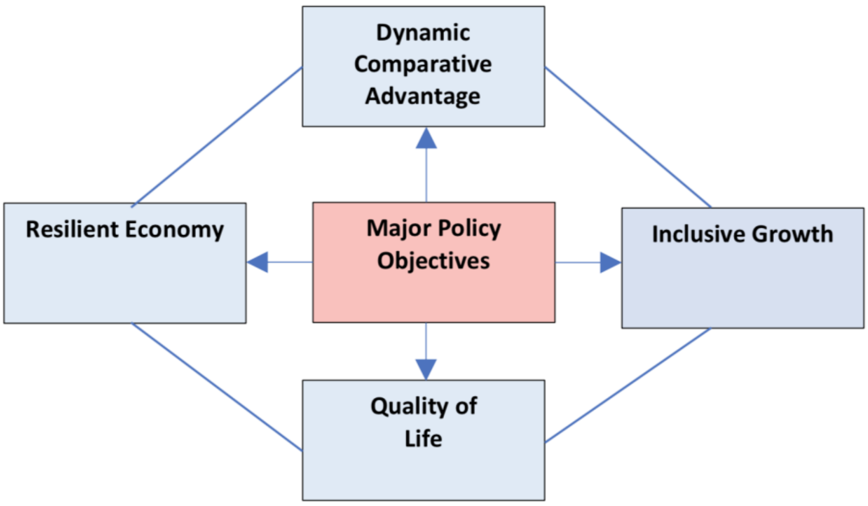
(v) promoting inclusive growth;

(vi) building the resilience of its economy; and

(vii) raising the quality of life of its population.

Other major aims could no doubt be added, such as moving towards a low carbon economy. The key point is that major policy goals need first to be specified, since these then determine what city assets, policy drivers and policy interventions are relevant and need to be prioritised. At the same time, major policy objectives, and the measures needed to achieve them, will inevitably be inter-related. Dynamic (and adaptive) comparative advantage is a key building block of a city's economic resilience to shocks. At the same time, a skilled workforce is key not only to dynamic advantage but also to ensuring that a city's economic growth is inclusive, founded on good quality, high wage jobs across its population. Yet again, policies that seek to improve the quality of life for a city's population will enable the city to attract and retain high quality jobs and workers.

Figure 3.2: Some Major Objectives for City Policy



Promoting dynamic comparative advantage

Dynamic comparative advantage refers to the capacity of a city economy to constantly adapt its economic structure (its firms, industries, technologies and skill base) so as to maintain its productivity and competitiveness, especially in export markets. Our findings in our companion report suggest that the Core Cities have lost dynamic comparative advantage over recent decades, losing key export activity and lagging in economic growth as a consequence.

Conventionally economists have viewed comparative (or competitive advantage) in static terms, What matters, however, is *dynamic* comparative (or competitive) advantage, since over time advances in technology, shifts in competition (and competitors), trade patterns, and market conditions generally, mean that firms and industries need to adapt. It may also mean that some of a city's firms and industries will decline, so policy will need to promote the conditions that maximise the potential for new firms, new technologies, new industries and new skills to develop to replace those in decline or no longer at the forefront of productivity or technological advance.

Building a resilient economy

Building a resilient economy refers to promoting an economy that is able both to better resist shocks and disruptions and to successfully recover from them when they do occur. Economic growth is not some smooth incremental process, but one periodically subject to shocks of various kinds, such as major recessions or financial crises. A key finding of our first (economic performance) report is that the average performance of the Core Cities is typically one of lower resistance and recoverability than the national average in most of the recession-recovery cycles of the past forty years. In contrast, while London has not improved its resistance to shocks over this time, its ability to recover has improved with each shock it has faced. Since recoverability is key to long-run growth performance, this is one reason why London has pulled progressively ahead of the Core Cities over recent decades.

Many of the determinants of economic resilience are precisely those that make for a buoyant city economy, and key among these is the ability of a city to adapt over time. Adaptive resilience is central to successful recoverability. Dynamic comparative advantage is quintessentially about the capacity of a city's firms, industries and workers to adapt to changing market and technological conditions. A city's resilience is an ongoing process of upgrading and re-orientating its economic structures and comparative strengths. Economic policies – whether at national level or local (regional and city) level - have not hitherto been concerned with building resilience, yet the latter is central to long-run prosperity. How to incorporate resilience building into policy-making on a number of fronts is now being actively considered int e EU for example.

Promoting inclusive growth

There is widespread concern that over the boom years that preceded the global financial crisis, and indeed in the hesitant recovery since, economic growth has tended to favour certain groups while leaving others behind. Real wages have stagnated for many groups in the labour market, but have been more robust for high-skilled workers. The result has been that wage inequalities have widened everywhere. Although employment has expanded, and has been much celebrated by Government, many new jobs have been low-wage and part-time, with inferior conditions and entitlements. There are long-run trends and processes in motion, associated with the changing nature of work, that are militating against the low-skilled and those without skills. A key policy objective must be to ensure a more inclusive mode of economic growth in our cities, involving the creation of an employment base not only sufficient to provide jobs for all those seeking work, but also consisting of good quality jobs paying decent wages. This will require policy action on several fronts. Measures that improve the minimum wage to a liveable standard will help in the short-run. But over the longer term, policy needs to help raise the skill levels across a city's workforce while at the same time promoting and supporting the economic activities that will enable those skilled workers to find local jobs, rather than being forced to move to those cities and regions where attractive jobs can be found. Over the post-war period in the UK, the net movement of the more educated and enterprising workers has been from northern cities and regions to London and the south-eastern region of the country. This has benefitted the latter, but hindered the growth and prosperity of the former. Promoting a more inclusive mode of growth require both supply-side and demand-side policies.

Ensuring quality of life

Quality of life has to do with the general well-being of individuals and societies, and spans everything from cost of living, physical health, family, education, employment, wealth, safety, transport, security to freedom, religious beliefs, and the environment. Various composite 'quality of life indices' have been compiled for UK cities and for major cities across the world, and no two lists are the same because of different methodologies and factors included. But the evidence suggests that UK cities do not compare favourably with similar sized cities in the EU, or even in the USA. Edinburgh ranks the highest both in international tables and UK rankings. In UK rankings, Nottingham, Belfast and Liverpool have much lower quality of life indices than Birmingham, Bristol and Leeds. Quality of life and well-being are not only desirable in their own right, but also for the positive impacts they have on attracting both business and workers.

3.3 Some specific policy actions

Against these broad aspects and aims of policy for cities, the following sections deal briefly with a number of more specific actions in relation to the Core Cities:

- forging an industrial strategy: specialisation versus diversification, building an advanced manufacturing ecosystem, supply chains, anchor firms, clustered variety;
- building skills and human capital;
- boosting public infrastructure, including connectivity among the northern cities, receiving fairer per capita spending by central government;
- devolving fiscal and governance powers to the cities (but still with substantial support from central government), and greater strategic alliances and collaboration among neighbouring core cities; and
- building local capital markets (especially funding for SMES, venture capital circuits, etc) and more generally developing intermediary institutions that help cities pool resources and thus achieve economies of scale.

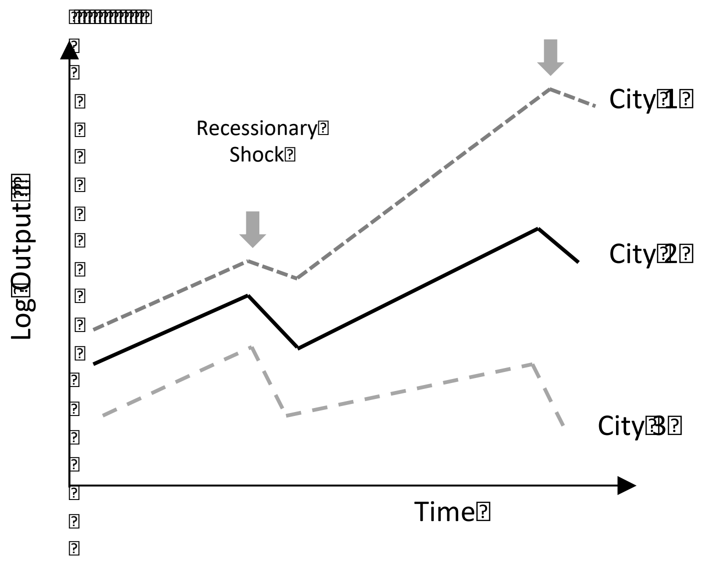
4 Forging a City Industrial Strategy: Growth *and* Resilience

4.1 The inter-relationship between growth and resilience

Both the academic literature and government policy has tended to focus on how to improve long-run economic growth. But growth is not some steady, incremental process. Rather, growth is a shock-prone process, in which (usually unforeseen) disruptions and perturbations disturb the momentum of the economy, and can move it off its pre-shock trajectory. How far it is thrown off its trajectory, and how far and how quickly it returns to that path depends on how resilient the city is. Resilience has to do both with the *resistance* (vulnerability and sensitivity) of an economy to shocks, and its *recoverability* from them.

There is now significant empirical evidence that countries which are more susceptible to and, particularly, have low or slow recoverability from shocks, such as major recessions, also tend to have lower long-run growth rates (see, for example, Cerra and Saxena (2008) and Cerra, Saxena and Panizza (2013)). The implication is that cities that have lower resistance and lower recoverability from shocks will likewise have lower long-run growth rates than more resilient cities and will therefore lag behind the latter. This is illustrated in Figure 4.1 for three hypothetical cities, subject to a major national recessionary shock. City 1 is not only more resistant to the shock than both City 2 or City 3, but also recovers more strongly. City 3 has the lowest resilience: it is not only the least resistant to the shock, but fails to recover fully from it before a second shock occurs. The key point from the figure is that differences in resilience among cities can be a source of divergent long-run growth trajectories. The issue of 'resilience building', of promoting both greater resistance and recoverability from economic shocks, should therefore be a key consideration in policy-making.

Figure 4.1: Differential resilience to economic shocks: three hypothetical cities

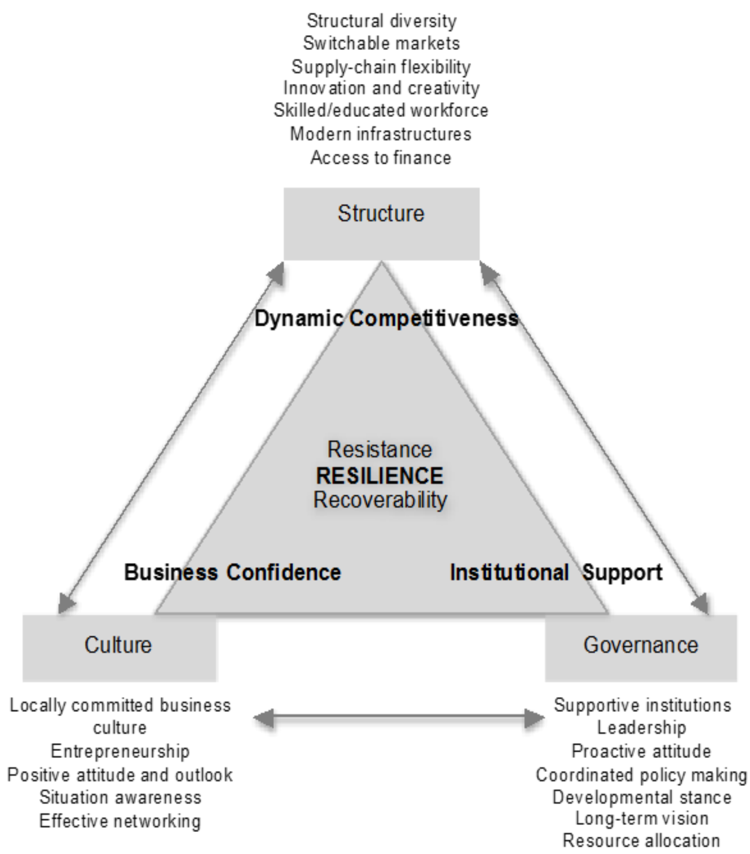


Drivers / characteristics of resilience

This, of course, raises the question of what promotes resilience. In general, the drivers of resilience can be expected to be closely correlated with those for promoting a dynamic, productive and prosperous city economy. London exemplifies this situation. Its underlying economy is buoyant, competitive and highly productive. Even though it was not exempt from a marked downturn following the financial crisis of 2007-08, it has recovered strongly. An economically lagging city, with slow growth and lower productivity might be expected, other things being equal, not only to be more severely hit by a national shock, but also to recover less rapidly from it. Among the factors that have been hypothesised to influence a city's economic resilience, its pre-shock growth performance, its economic structure, the productivity profile of its firms, the skill profile of its workforce, the nature of its exports and supply chains, and the confidence of its business community, and the nature and extent of supporting institutions and governance arrangements, have all been hypothesised as important.

Building economic resilience for sustained growth will entail focusing policy simultaneously on several inter-related aspects of an integrated strategy involving at least three main aspects of a city's economy (Figure 4.2). The various elements and fundamentals (the industrial 'ecosystem') that promote local dynamic competitiveness; a local economic environment and culture that inspires business confidence and commitment; and a local institutional system of support and leadership, with a collective vision for the city's development.

Figure 4.2: Potential Policy Foci for Building City Adaptive Resilience



Discussing all of these possible factors is beyond the scope of this paper, and in what follows we simply offer some brief comments on certain potentially important determinants of both growth and resilience.

4.2 Economic structure: specialisation versus diversification?

The role of industrial structure in economic growth has long been a topic of debate. It is also an issue of contention in discussions of resilience. One view is that economic *specialisation* promotes city (and regional) growth by fostering positive local externalities, such as knowledge transfer, innovation, a pool of specialised labour, and dedicated institutions. Adherents of this view point to highly successful specialised cities and regions, and especially clusters, around the world. Hence these arguments focus on the importance of building particular specialisations based around existing or potentially viable competences and technological capacities.

It is also the case, however, that specialisation carries dangers of productive, technological and organisation lock-in, and hence vulnerability to more efficient competitors, and hence to both city-specific shocks and external disruptions. Hence others argue that the *diversification of* economic structure is more conducive to economic success over the long run, that it offers an ecosystem that fosters innovation though interaction between activities, the scope for branching into new activities, provides modularity (that is a degree of independence between sectors, so that if one declines, there are others that can compensate), and that it is therefore also more conducive to resilience. A new variant of this view is the so-called *related variety approach,* which points the advantages of an economic structure that is composed of diverse, but complementary, activities that share common or reacted inputs, skills, or technologies. The so-called 'smart specialisation' idea that has become the basis of regional policy thinking by the European Commission is founded in part on the notion of related variety.

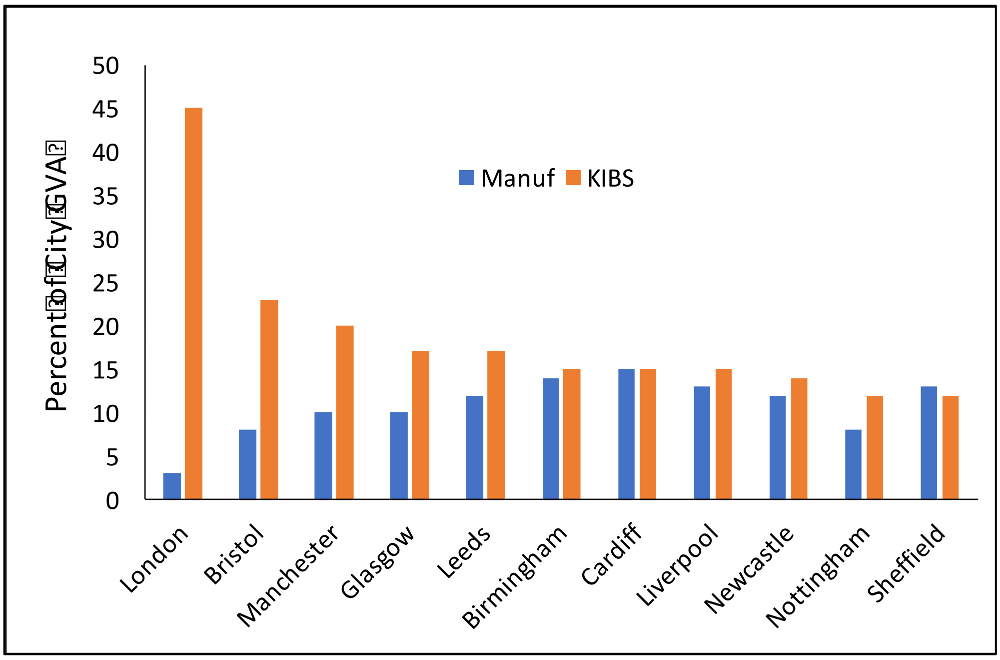
In many cases, successful and resilient cities appear to be neither highly specialised nor completely diverse in economic structure (see Martin and Gardiner, 2019). Rather they tend to be characterised by what we might call *clustered diversity,* that is by a range or diversity of specialised business clusters, each of which benefit from the advantages of the localised concentration of closely related activities of a given type, but none of which need necessarily dominate the city's economy, thereby giving the city the advantages of a diverse economic base, including greater resilience against shocks. Although there may be synergies between different clusters, their variety also confers a degree of modularity, such that if one cluster begins to decline there are others that continue to drive the local economy. *A city industrial strategy founded on identifying and promoting clustered variety would not only provide the benefits that derive from the development of clusters but would also enhance both the adaptability of the city's economy over time and its resilience to external shocks.*

Interestingly, the accompanying economic performance report noted how the industrial structures of the Core Cities have become less specialised and more similar over the past 40 years. In contrast, London has maintained its degree of specialisation, although the nature of that specialisation has changes substantially over the period, from manufacturing to finance and a host of other high-level knowledge intensive business services and creative industries. In fact, London would seem to be a good example of clustered diversity, in that it hosts a variety of clusters, not just finance, but clusters. legal services, film and media activities, architectural and engineering consultancy services, emerging info-tech and bio-tech industries, among others. These now account for a major part of the output of the London economy.

In the Core Cites, other than Bristol, Manchester and Glasgow, manufacturing still accounts for about the same or even more of total GVA than KIBS (Figure 4.3). A new OECD (Gal and Egeland, 2018) study suggests further that for most of the regions containing Core Cities, low-tech manufacturing is more important than high-tech as a source of output.

Some important policy issues are raised for the Core Cities. First, as far as manufacturing is concerned a key objective must be to promote a shift from low-tech to clusters of high tech (advanced) activities. Both productivity and innovation are higher in advanced manufacturing. There may be existing sectors that can be upgraded using the latest technologies, including the application of AI. Scope may also exist for assisting existing low-tech activities to branch into higher-tech and related activities. The role of key high-tech leader and anchor firms can play a vital role here, as can promoting local supply chains serving such anchor firms.

Figure 4.3: The Contribution of Manufacturing and KIBS to Core City GVA, 2015



Second, there would seem to be scope for the Core Cities to develop particular clusters of KIBS sectors, Again, according to the OECD (2018) study, differences in productivity across regions (the study gives no data for cities) are greater for KIBS activities than for manufacturing, with London once more having a higher KIBS productivity than that in the regions. This reflects the higher proportion of higher order functions in the capital.

4.3 Building skills and human capital

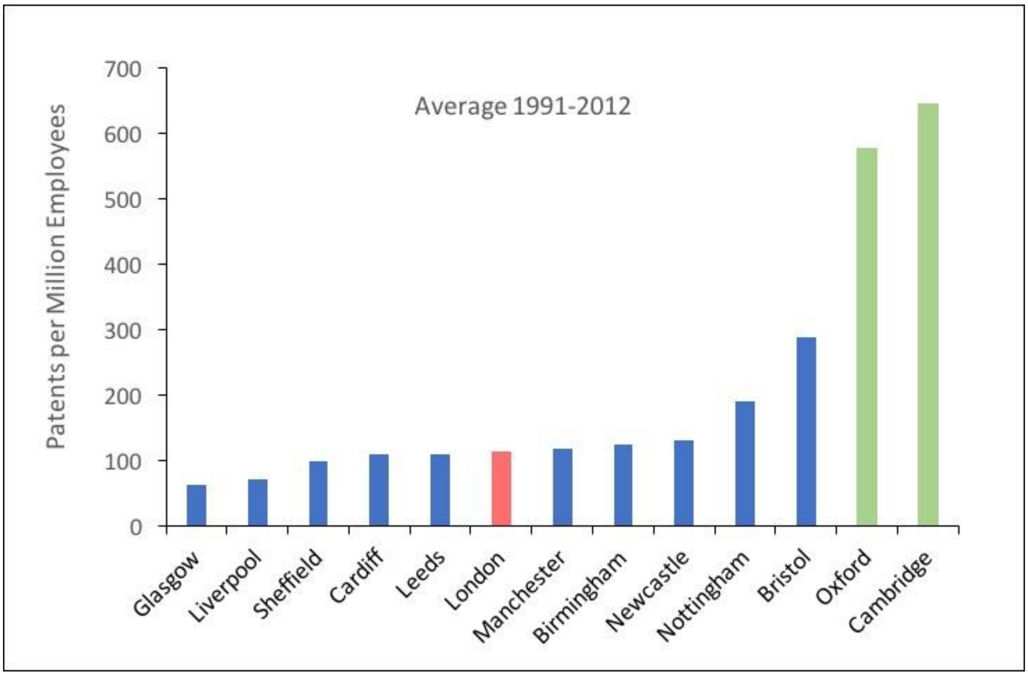
Recent research has argued that human capital has become *the* key driver of city growth and that there is a widening divergence between high-skill and low-skill cities. This 'skilled city' view includes a number of stylised propositions. The first is that more skills and human capital generate stronger economic growth; the second is that already skilled cities are becoming ever more skilled; the third is that larger cities tend to have stronger concentrations of, and faster growth in, high-skilled, cognitive occupations. Much of this work is based on findings from US cities.

Our research on 85 UK cities (Sunley, Martin, Gardiner and Pike, 2019) confirms the close interactive relationship between city growth and high-skilled occupations. However, some of the skilled city propositions, such as 'smart cities becoming smarter', and a positive relationship between agglomeration and high skilled employment growth, do not apply so readily in the case of Britain where other factors have been more important. The pattern of high-skill growth has shown a strong regional dimension, and the 'emergence' of newer 'smaller cities', particularly in the South of England, has been much more evident than the 'resurgence' of large core and industrial cities.

4.4 Stimulating innovation

Traditional analysis of innovation performance has tended to focus on broad indicators such as patents (as below in Figure 4.4) and R&D. This helps to identify which regions or cities perform well or which need to improve, without really moving on to policy suggestions.

Figure 4.4 Patenting by Core City



Note: The Core Cities in this Figure are defined in terms of Travel to Work Areas
Source: Eurostat

In the UK currently, innovation policy is focussed on firm-and sector-level interventions through the development of catapult centres[2] in a number of key strategic areas of activity (Cell and Gene Therapy, Compound Semiconductor Applications, Digital, Energy Systems, Future Cities, High Value Manufacturing, Medicines Discovery, Offshore Renewable Energy, Satellite Applications, and Transport Systems). The location of the centres typically reflect broad spatial specialisation patterns[3], while the Future Cities work is more linked the concept of Smart Cities[4] than being anything to do with city-level activities across the country. There is also an Ideas foundation that underpins performance within the National and Local Industrial Strategies, the latter of which may or may not coincide with city-region areas depending on whether the area in question is led by a mayoral Combined Authority or a Local Enterprise Partnership.

More recent work in this area has moved on from simply recognising that the accumulation of knowledge is a key driver of technological change and economic growth. It has moved towards understanding the processes of knowledge production in a spatial context, and also the types of knowledge produced within specific places and opportunities that can be exploited from this identification process. For example, using detailed patent data gathered from the European Patents Office (EPO), Prof Dieter Kögler (e.g. Kögler et al, 2013 and 2017) has engaged in a mapping exercise to explore the knowledge space of innovation around Europe. The data are post-coded and sorted into recognised patent categories. From this information, and combined with detailed local economic data, the knowledge space of the areas can be mapped and explored for areas of related variety (see above discussion) which allow for the combination of existing technological expertise to create innovative potential. This work has received attention in Europe and is currently being exploited as part of the Smart Specialisation Strategy.

4.5 Boosting transport infrastructure and connectivity

International evidence suggests that higher spending on public infrastructure boosts national long-run economic growth. But at the same time, the evidence also indicates that in many OECD countries national spending on public infrastructure has fallen as a percentage of GDP has fallen in recent decades, with adverse effects on national growth rates. It seems highly likely therefore, that public infrastructure sending has a key influence on regional and city growth within a country.

In this context, there has been growing concern in the UK about the geographical allocation of Governmental infrastructural spending. In recent years, this has by far favoured London and the South East, while regions like the North West and North East have received much lower per capita expenditure. In 2016, for example, per capita transport infrastructure spending in London (£975) was more than three times that in the North East (£300) and

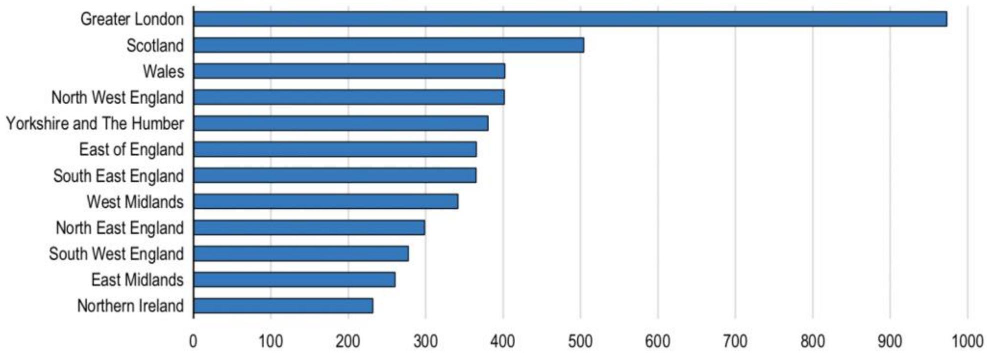
[2] See https://catapult.org.uk/

[3] For example, the High-Value Manufacturing catapults are all located outside of the Greater South East.

[4] Using ICT information and data to better understand city dynamics and inter-relationships, e.g. use of mobile technology or transport infrastructure, in order to improve functioning and optimise usage. Greater autonomy at city-level policy making can clearly make use of this agenda.

more than double that in the North West (Figure 4.5). There must surely be a strong case for a more regionally equitable allocation of such spending.

Figure 4.5: Transport infrastructure spending, £ per capita, by region, 2016



Data refer to fiscal year. Figures represent the sum of local and central government expenditure.

Source: HM Treasury

Much has been written on the benefits to the Midlands and northern regions of the proposed HS2, the argument being that a faster rail connection of Midlands and northern Core Cities with London will help drive economic growth in the former. The challenge is to ensure that smaller cities will benefit by being properly connected and integrated with HS2. The evidence from France, which has a high-seed rail system for some time, is relevant here. The effects of high-speed rail investment in France is mixed, with Paris and the largest regional cities such as Lyon benefiting, but smaller regional centres seeing an outflow of businesses. What is also needed, therefore, are substantial investments to improve the rail and road networks and connectivity among and between the Core Cities. The HS3 rail system championed by the National Infrastructure Commission, which would link Liverpool in the west to Newcastle and Hull in the east would bring key benefits to northern cities. Upgrading and improving the rail and road network among and between the major Northern Powerhouse cities and between these and their surrounding commuter cities would enable this broad northern metropolitan area to *function as a multi-regional agglomeration of inter-linked labour markets and supply-chain networks.* Based on this logic, the same would therefore be the case for other clusters of cities e.g. the Midlands Engine and Great Western Cities areas.

4.6 Building a local capital market

Since the 1930s, there has been a recurring debate in the UK over the supply of finance for businesses, and especially small and medium sized enterprises (SMEs). In the 1960s, over 70 percent of bank lending was to the business sector; now barely 10 percent of bank lending is for that purpose. As bank lending to business has declined in importance, so other potential sources of finance for SMEs have expanded, most notably venture capital and private equity. The UK venture capital (VC) and private equity (PE) markets are overwhelming based in or controlled from London and the South East, connected with or linked into, as many of the institutions involved in these markets are, the London financial nexus more generally. Thus, London and the South East typically tend to account for 50 percent or more of VC and PE investment (Table 3.1). Other regions tend to have significant shares in certain sectors, for example the West Midlands in ICT and the East Midlands in biotech and heath care, and the North West in business products and services.

The Core Cities offer potentially important locations for the development of larger and deeper local capital markets. An interesting comparison is with Germany, where the VC and PE market is much more geographically decentralised, with sizable clusters of institutions in seven major cities - Frankfurt, Münich, Stuttgart, Düsseldorf, Hannover, Berlin and Hamburg – with a resultant distribution of investment that is likewise more evenly spread spatially than that found in the UK (Klagge, Martin and Sunley, 2018).

Table 4.1 Venture capital and private equity investment by region, 2017

Percent	Consumer goods and services	Business products and services	Finance and insurance	ICT activities	Biotechnology and healthcare
London	45	50	70	33	13
South East	28	5	6	27	30
South West	5	1	9	7	1
East of England	0	0	9	3	4
West Midlands	5	3	1	12	9
East Midlands	4	2	1	5	23
Yorks-Humberside	4	15	1	1	2
North West	7	22	2	8	5
North East	1	1	1	0	5
Scotland	1	2	0	1	3
Wales	0	0	0	3	6
N Ireland	0	0	0	0	0
UK	100	100	100	100	100

Source of data: British Venture Capital Association.
Note: Data rounded, and may not sum exactly to UK=100

There is of course a degree of two-way causation involved. London-based institutions may argue that there is a lack of demand for VC and PE finance away from London and its hinterland; while SMEs and other firms in the regions may argue that they do not seek such finance because of the lack of a local presence of VC and PE institutions. The policy challenge is to promote both the demand for and the supply of VC and PE finance, and to stimulate a synergy between the two.

Harnessing the presence and support of the recently established British Business Bank (BBB) could play a critical role here, given its aim to make financial markets work better for SMEs across the whole of the UK. For example, its three Regional Investment Funds (including one for the Northern Powerhouse region and one for the Midlands Engine region) are intended to support the development of clusters of business angels outside London. The BBB funds are to act as funds of funds managers to assist SES to access finance in those regions. These funds are partly supported by the ERDF component of the European Structural and Investment Funds, which support must therefore be in question given the uncertainty of Brexit. Nevertheless, they provide a potentially important basis for building local capital markets in the Core Cities, and should be a key component of local industrial and growth strategies.

4.7 Improving governance and collaboration

Related to physical connectivity, an enhanced level of strategic collaboration could benefit neighbouring Core Cities. Fostering joint and collaborative development visions can have major economic gains. This is what is happening in the London-Greater South East, with the collaboration of several local authorities to form the London-Stansted-Cambridge Innovation Corridor, and what appears to a similar initiative emerging among local authorities along a Cambridge-Milton Keynes-Oxford innovation corridor. Both of these involve integrated development strategies covering. housing, skills, infrastructure and innovation and business support. support. What scope exists for similar collaborative policy programmes among the northern Core Cities is surely a pertinent issue.

The issue of collaboration amongst local institutions has begun to receive attention in discussions on how to regenerate the economies of lagging US city regions (for example, Katz, 2018; Katz and Nowak, 2018). A key argument is that a local 'institutional scan' is a crucial pre-requisite to develop the authority and capacity to create a unified vision and overall strategy for a city, to manage the strategy, and to communicate it to stakeholders both local and beyond, in order to attract investment, promote entrepreneurship and innovation, build skills and enhance local infrastructure. This effort may well require new institutions and new types of mediation. In short, building local institutional and governance structures and capacities is increasingly recognised as key to achieving sustained and inclusive city growth.

Such institutional structures will need to include both public and private organisations. Katz and Nowak give particular emphasis to exploring ways of pooling of local capital towards common local aims. The access of local businesses to local finance has long been a subject of recurring debate in the UK. Britain has a highly centralised financial system, based primarily in London, an institutional structure that many argue gives rise to local business funding gaps in regions and cities that are not within close proximity to the capital. A century and a half ago, Britain had a local banking system, even 22 local stock markets located in the major provincial cities. Recreating city-regional capital markets could well be one instance of the local institution building and collaboration that urban experts such as Katz are arguing for. An interesting example is the Cambridge & Counties Bank, established in 2012 as a joint venture between Trinity Hall College (part of Cambridge University) and Cambridgeshire Local Government Pension Fund to support small businesses. Not only has this collaborative venture rapidly built up a sizable lending portfolio, it has also secured a Government ENABLE Guarantee, a government–backed portfolio guarantee to encourage additional lending to the SME sector.[5] Scope may well exist for similar collaborative institutional initiatives in the Core Cities.

[5] See https://ccbank.co.uk/wp-content/uploads/2018/03/1539-CCBANK-CC001-Annual-report-summary-2017-AMENDED_AW-WEB.pdf

5 References

Agtmael, A.V. and F. Bakker (2016) The Smartest Places on Earth: Why Rustbelts Are the Emerging Hot Spots of Global Innovation. New York. ISBN: 9781610394352.

Austin, B., Glaeser, E. and Summers, L. (2018) Saving the Heartland: Place Based Policies in 21st Century America, *Brookings Papers in Economic Activity*.

Baldwin, R. (2016) The Great Convergence: Information Technology and the New Globalisation, Cambridge, Mass: Harvard University Press.

Berube, A. and Murray, C. (2018) Renewing America's Economic Promise through Older Industrial Cities, Brookings Metropolitan Programme, The Brookings Institution, https://www.brookings.edu/wp-content/uploads/2018/04/2018-04_brookings-metro_older-industrial-cities_full-report-berube_murray_-final-version_af4-18.pdf

Cerra, V. and S.C. Saxena, (2008) "Growth Dynamics: The Myth of Economic Recovery," *American Economic Review*, American Economic Association, vol. 98(1), pages 439-457, March.

Cerra, V., Saxena, S.C, and U. Panizza (2009), "International Evidence on Recovery from Recessions," *IMF Working Papers* 09/183, International Monetary Fund.

Gal, P. and Egeland, J. (2018) Reducing Regional Disparities in Productivity in the United Kingdom, Economics Department WP 1456, OECD, Paris.

Glaeser, E. (2011) The Triumph of the City, How our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier and Happier. Penguin Press, London.

Helper, S., Krueger, T. and Wial, H. (2012) Locating American Manufacturing: Trends in the Geography of Production, Brookings Metropolitan Programme, The Brookings Institution, https://www.brookings.edu/wp-content/uploads/2016/06/0509_locating_american_manufacturing_report.pdf.

Heseltine, M. (2012) No Stone Unturned: in pursuit of growth.

Jacobs, J. (1984) Cities and the Wealth of Nations.

Katz, B. (2018) *Opportunity Zones, Place-Making and Governance*, Project for Public Spaces, https://www.pps.org/article/bruce-katz-on-opportunity-zones-placemaking-and-governance.

Katz, B. and Nowak, J. (2018) *The New Localism: How Cities Can Thrive in the Age of Populism*.

Klagge, B, Martin, R. and Sunley, P. (2018) The Spatial Structure of the Financial System and the Funding of Regional Business: A Comparison of Britain and Germany, in Martin, R. and Pollard, J. (Eds) Handbook on the Geographies of Money and Finance, Cheltenham: Edward Elgar, pp 125-155.

Kogler, D. F., Rigby, D.L, and I. Tucker (2013) Mapping Knowledge Space and Technological Relatedness in US Cities, *European Planning Studies*, 21:9, 1374-1391, DOI: 10.1080/09654313.2012.755832

Kogler, D. F., Essletzbichler, J., and D.L. Rigby, (2017), The evolution of specialization in the EU15 knowledge space, *Journal of Economic Geography*, Volume 17, Issue 2, 1 March 2017, Pages 345–373, https://doi.org/10.1093/jeg/lbw024.

Krugman, P. (2006) Second Winds for Industrial Regions? In Coyle, D., Alexander, W. and Ashcroft, B. (Eds) New Wealth for Old Nations, Oxford: Princeton university Press, pp. 35-47.

Livesey, F. (2017) From Global to Local: The Making of Things and the End of Globalisation, London: Profile Books.

Martin, R.L. (2015) Rebalancing the Spatial Economy: The Challenge for Regional Theory, *Territory, Politics, Governance*, 3, pp. 235-272.

Martin, R.L., Pike, A., Tyler, P. and Gardiner, B. (2015) *Spatially Rebalancing the UK Economy: The Need for a New Policy Model*, Regional Studies Association, London.

Martin, R.L. (2018) Closing the North-South Growth Gap is the Key Policy Challenge, in Berry, C. (Ed) What We Really Mean When We Talk of Industrial Strategy, A Future Economies Publication, pp. 150-158.

Martin, R.L. and B. Gardiner (2018) Reviving the 'Northern Powerhouse' and Spatially Rebalancing the British Economy: The Scale of the Challenge, Martin, R. and B. Gardiner, Chapter 2 in Developing England's North (2018) Craig Berry and Arianna Giovannini (eds), SPERI.

Martin, R.L. and Gardiner, B. (2019) The Resilience of Cities to Economic Shocks: A Tale of Four Recessions (and the Challenge of Brexit), forthcoming in *Papers in Regional Science*.

Martin, R.L., Pike, A., Tyler, P. and Gardiner, B. (2015) Spatially Rebalancing the UK Economy: The Need for a New Policy Model, *Regional Studies* Association, London.

Martin, R.L., Tyler, P., Sunley, P., Pike, A., Bailey, D., Evenhuis, E., Gardiner, B. and Swinney, P. (2017) *Cities and the National Productivity Problem*, Evidence Submitted to the UK Government's Industrial Strategy Green Paper Consultation.

Rodríguez-Pose, Andrés (2018) The revenge of the places that don't matter (and what to do about it). Cambridge Journal of Regions, Economy and Society, 11 (1). pp. 189-209. ISSN 1752-1378

Rothwell, N., Andes, S., Fikri, K. and Kulkarni, S. (2015) America's Advanced Industries: What are They, Where are They and Why do they Matter? Brookings Advanced Industries Project, The Brookings Institution, https://www.brookings.edu/wp-content/uploads/2015/02/AdvancedIndustry_FinalFeb2lores-1.pdf.

Sandford, M. (2016) Public services and local government: the end of the principle of 'funding following duties', Local Government Studies, Volume 42, 2016 - Issue 4.

Sunley, P. J., Martin, R. L., Gardiner, B., and A. Pike (2018) In search of the Skilled City: Skills and the Occupational Evolution of British Cities, *forthcoming in Urban Studies*.