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Geachte leden van de provinciale staten en gemeenteraden,

Deze week stond in de Financial Times een interessant artikel wegens de Engelse derde dinsdag in september. Waar het budget besproken werd. Hier is de link naar het

artikel: <https://www.ft.com/content/8c6b43ec-5fc3-11ea-8033-fa40a0d65a98>

In het artikel werd verwezen naar de onderzoeken van het Engelse instituut Center for cities. Die ook een kloof tussen overig UK vaststellen en de regio groot Londen. De bijlagen zijn dus interessant hoe er daar naar gekeken wordt en wat ook wij als regio ervan leren kunnen.

Met vriendelijke groet,

Frank Menger

# Getting moving

Where can transport investment level up growth?

Simon Jeffrey and Kathrin Enenkel  
March 2020



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# 00

## Executive summary

Investment in new transport infrastructure is often seen as the answer to kickstart flagging economies across the country. However, new analysis shows that relatively few cities and large towns have poorly-performing transport networks, questioning the need for widespread new investment in infrastructure.

Outside of the largest cities and towns, journeys into most city centres at peak times are on average relatively quick and so further infrastructure investment in these networks is likely to have little effect on economic performance in the short term. Even in some large cities such as Newcastle and Sheffield, the demand to access the relatively weak city-centre economy is not sufficient to unduly strain the transport system at rush hour. **Rather than investing in new transport infrastructure, these cities should focus on making their city centres more attractive for businesses to increase the number of jobs in them.**

It is only in a handful of city centres, which have seen strong growth in the last two decades, where short-term growth is at risk of being held back by a transport system that cannot keep up with the increased travel demands that result from their economic resurgence. This analysis suggests that in London, Manchester, Birmingham, Bristol and Leeds in particular, major new public transport infrastructure – from bus rapid transit to underground systems – is needed quickly to stop congestion and capacity constraints choking off growth.

The National Infrastructure Commission has recommended that the Government should invest an additional £31 billion in major new transport projects in priority cities outside London. **This report seconds this recommendation, and further calls for it to be prioritised in the places where congestion and public transport capacity constraints into the city centre are holding back economic growth.** To unlock government investment, cities should also contribute a share of the costs. These contributions should partly come from money raised from the creation of a city-centre congestion charge.

This report has not looked at the management of existing transport systems, but **cities and large towns, irrespective of economic performance, should look at how to improve the management and efficiency of their existing transport networks**, for example through bus franchising. While management falls outside of the scope of this report, detailed recommendations can be found in *Delivering change – improving urban bus transport* and *Making Transport Work for Cities*.

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This work uses research datasets which may not exactly reproduce National Statistics aggregates.

# 01

## Introduction

The national economy is clustered in cities and large towns – 60 per cent of jobs are located in Britain’s cities and large towns, even though they account for only 9 per cent of land. This is especially the case in city centres. Covering less than 0.1 per cent of the UK, 14 per cent of all jobs, and 25 per cent of the most productive jobs – engineering, legal, financial and technology services – are clustered in city centres.<sup>1</sup> These dense, central locations are the perfect place for high-skilled businesses, especially in services sectors.

As the UK economy continues to specialise in more high-skilled activities, the demand for a city-centre location amongst businesses is likely to grow. Some city centres already offer businesses the benefits of a qualified workforce and dense business environment. But other city centres are lagging behind. They are less attractive to business and as a result have few high-skilled jobs, with implications for job opportunities and pay rates for people who live within commutable distance of them.

An efficient transport system facilitates access to workers from across the city and beyond. Where daily intra-city journeys by millions of commuters are held up by congestion, time is lost, and places become less productive.

Demands for greater transport investment are always at the top of the political agenda. But the focus of transport policy is usually on national and inter-city schemes with large price tags and drastic journey-time reductions. High Speed 2 now has a budget of £88 billion, and Northern Powerhouse Rail will require £39 billion to improve regional inter-city links between major centres. Much less attention is given to supporting schemes within cities that would improve commutes to city centres.

The National Infrastructure Commission (NIC) was established in 2016 with a view to addressing ‘the UK’s long-term productivity problem’. It identified poor intra-city links from suburbs to city centres as a barrier to growth.

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<sup>1</sup> McDonald R and Swinney P (2019) ‘City centres: past present and future’, London: Centre for Cities

The NIC has called for £31 billion in investment in major new transport infrastructure in priority cities by 2040 to boost national productivity, as well as an extra £12 billion on top of planned levels of funding to invest in smaller transport improvements in all cities.<sup>2</sup>

But not all cities face similar transport barriers to growth. This report uses data compiled by the NIC to set out where funding in new transport infrastructure will have the greatest positive impact on improving access to the city centre and on the economy.

### **Box 1: The wider benefits of better transport**

This report is focused on how transport can facilitate strong, growing city centres by efficiently linking workers with jobs.

However, getting people to work is just one of the roles transport plays in a city. Good transport has multiple positive outcomes for people and communities. As well as connecting people to job opportunities, transport policy should also aim to lower carbon emissions, reduce air pollution, encourage a more-active population, and improve access to health and education services for all.

While these objectives are outside the scope of this report, the recommendations given should, indirectly, strengthen cities' abilities to pursue these objectives.

For more on these wider goals, see previous Centre for Cities' reports:

- Access all areas: Linking people to jobs (2011)
- Delivering Change: Making transport work for cities (2014)
- How can UK cities clean up the air we breathe: Lessons from cities taking action to reduce roadside emissions (2018)

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2 National Infrastructure Commission (2018) National Infrastructure Investment

# 02

## The importance of city centres to the national economy

The clustering of jobs in businesses in cities and large towns, and city centres in particular, shows the central role they play in the national economy. City centres cover less than 0.1 per cent of land but house 8 per cent of businesses and 14 per cent of jobs. Importantly, they are not just home to many jobs – they are particularly attractive to more high-skilled exporting jobs that tend to have higher levels of productivity (see Box 3).

These businesses are attracted to city centres over other parts of the country by the benefits that these areas offer. In particular, there are three benefits to locate in the city centre:

- 1. Matching** – Access to a large number of potential employees from across the city and beyond, and especially to high-skilled workers who are more likely to live in a city on average.
- 2. Sharing** – Access a higher quality of infrastructure which is enabled by the densely-populated city, with many businesses and residents sharing the cost of this investment.
- 3. Learning** – Access to many other firms who are co-located in the city centre, and the ability to work with them and have easy face-to-face interactions. This facilitates innovation and, for firms which are knowledge-based, this can boost their productivity.

The varying performance of city-centre economies suggests that some city centres are more successful at offering these benefits than others. As Figure 1 shows, there is a great deal of variation in the performance of Britain's city-centre economies. While the centres of places such as Manchester, Reading and London have large shares of high-skilled exporting jobs in them, the opposite is the case for the centres such as those of Swansea, Stoke and Middlesbrough.

These cities have struggled to attract exporting jobs, and those that are located there tend to be lower-skilled activities. This affects the job opportunities available and wages on offer to people who live in and around them.

Additionally, Figure 1 shows that the densest city centres are also stronger city-centre economies – most of the cities with dense city centres (indicated by the size of the bubble) are located in the upper-right quadrant. Stronger city centres have on average 180 jobs per hectare, reflecting their attractiveness as places to do business.

### **Box 2: Definition of city centres**

To define city centres, a circle was drawn around the centre of a city. The radius of this circle was varied according to the population size of the city.

The radii used were:

- 2.0 miles for London
- 0.8 miles for cities with populations between 600,000 and 2.5 million in 2011
- 0.5 miles for cities with populations under 600,000 in 2011

For this report, economically-strong city centres are those with:

- Jobs density over 200 jobs per hectare in 2015
- Growing jobs density between 1998 and 2015 (See Figure 2)

From those under consideration, nine which meet these criteria can therefore be classified as having strong city centres. A more detailed list can be found in Appendix 1.

**Figure 1: The size and composition of a city centre’s exporting base and the density of the city centre**



Source: ONS Business Structure Database (2017), 2011 Census  
 Note: This chart contains data only on cities in England and Wales. Data for Scotland and Northern Ireland is not available.

### Box 3: The role of exporting businesses in city economies

There are two types of private sector businesses:

- 1. Local services businesses** sell directly to consumers. They include estate agents and amenities such as hairdressers and cafés. As a result, their location decisions are determined predominantly by where their customers live, work or trade from. They are also known as ‘non-tradable’ businesses.
- 2. Exporting businesses**, such as investment banks, advertising agencies and manufacturers, sell their products or services outside their local area to regional, national, and international markets. Unlike local services, these exporting businesses are not tied to one local market. They are also known as ‘tradable’ businesses.

Exporting businesses are important for three reasons:

- 1.** They generate income independent of the performance of their local economy, because they sell to other markets.<sup>3</sup>
- 2.** They tend to be more productive than local services firms and are drivers of productivity increases over time. For example, while a hairdresser is as productive as 50 years ago, a worker in a car factory is now many times more productive.<sup>4</sup>
- 3.** Exporting businesses have a multiplier effect on jobs in local services. The better they perform, the higher the local disposable income in the economy, and the higher the demand for the goods and services of local businesses such as shops and restaurants. All exporting businesses have a multiplier effect, but it is much bigger for high-skilled exporters than for low-skilled exporters. For example, for every 10 new high-skilled exporting jobs created between 1995 and 2015 in urban Britain, 17 new jobs were generated in low-skilled local services.<sup>5</sup>

For the purpose of this research, exporters and local services are defined using Standard Industrial Codes (SIC).<sup>6</sup> These were used to identify jobs in sectors that have the potential to sell to markets beyond their local area.

3 Rowthorne R (2018) Combined and Uneven Development: Reflections on the North-South Divide. *Spatial Economic Analysis* 5 (4) Pages 363-387

4 Moretti E (2013) *The New Geography of Jobs*. New York: Houghton Mifflin Harcourt

5 Magrini E (2019) *Opportunity Knocks? Economic outcomes for low-skilled people in cities*. London: Centre for Cities

6 For detailed definitions see Appendix 2 in: Magrini E (2019) *Opportunity Knocks? Economic outcomes for low-skilled people in cities*. London: Centre for Cities

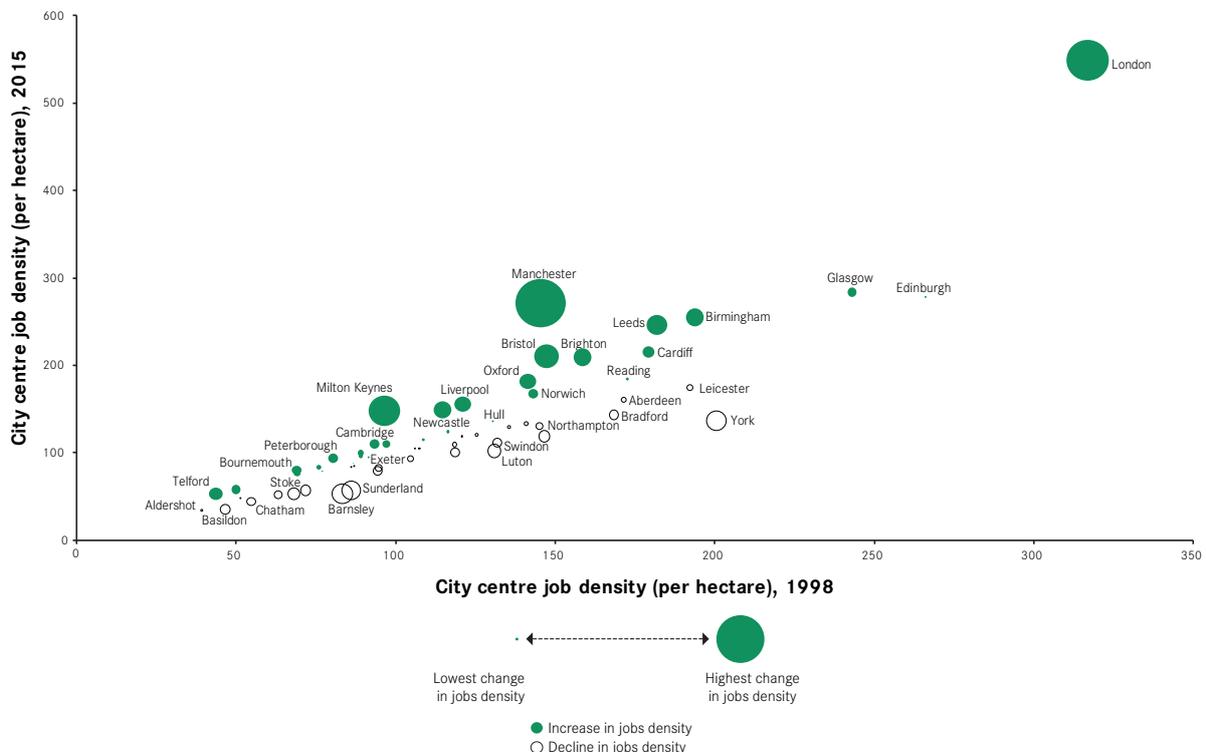
## Cities that are already the densest are the most likely to get even more dense

As the UK economy has increasingly focused on higher-skilled, more knowledge-based activities in recent years, some city centres have become increasingly attractive places to do business. This has meant that a greater number of jobs, in particular high-skilled service exporting jobs have located in very particular geographies, increasing the density of these city centres.

Those city centres that have seen the strongest growth in jobs have tended to be those that already had relatively dense city centres. As Figure 2 shows, there is a positive correlation between jobs density in 1998 and 2015 for city centres as demand to access these city centres has grown. Besides London, the city centres of Manchester, Leeds and Birmingham had a particularly large increase in city-centre jobs. The number of jobs in Manchester city centre, for instance, increased by 84 per cent to 2015.

Given the UK economy is likely to continue to specialise in high-skilled activities, it is probable that city centres will play an ever-larger role in the national economy. But only those city centres that offer the benefits that high-skilled exporting businesses are looking for are likely to profit from this.

**Figure 2: Growth rates of city centre’s jobs density over time**



Source: ONS, Business Structure Database

Note: This chart only contains data on cities in England and Wales. Data for Scotland and Northern Ireland is unavailable.

## **Transport has a central role in supporting future city-centre economic growth**

As city centres grow, an increasing number of commuters funnel into a fixed location. This requires a transport system able to cope with an increasingly large number of passengers if its ability to support future growth is to be sustained.

The following section explores in which places in Britain new infrastructure investment could have the largest impact on the local economy to improve economic growth.

### **Box 4: The role transport cannot play**

Transport's direct economic role in supporting a city centre is to widen the pool of labour that can access city-centre jobs as much as possible. The skills level of the local labour market, as well as the profile of the existing business base are the fundamental drivers of city-centre performance and the location decisions of highly-productive firms between areas. While the quality of a city's transport system will have some bearing on this, it is likely to be more marginal compared to these other factors.

# 03

## What role does transport play in densifying city centres?

While much is said about transport and the need for investment in it, there is little information about the performance of transport systems across cities. This, coupled with current and likely future demand generated from the growth of city-centre economies, is an important assessment to make when deciding on investment in new transport infrastructure. To what extent is the lack of transport a barrier to city centre success? And do all cities need additional investment in new transport infrastructure?

### **Box 5: What is meant by investment in new transport infrastructure?**

Transport infrastructure is the permanent fixed network of assets that allow for people and goods to move easily such as roads, railways, ports and airports, as well as the vehicles and facilities to make use of and maintain them. This report focuses on investment in major upgrades, brand new schemes and/or significant improvements to increase capacity and speeds, such as new trams, or upgrading road networks to support Bus Rapid Transit. Investment in new freight transport infrastructure that frees up capacity for more passenger services on existing rail lines should be considered in response to the findings of this report.

This report does not look at the maintenance of existing infrastructure, but this should be supported by government in line with the NIC.

This section looks at data from the NIC that aims to provide a sense of how quickly the transport system in a city links people to job opportunities in city centres (see Box 6). This includes travel by private car and public transport, and combines it with data on how people use the existing transport system to access city-centre jobs to understand where transport may be holding back growth.

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**Box 6: City definition and NIC intra-urban employment accessibility index methodology**

Centre for Cities uses primary urban areas (PUAs) in its analysis of economic activity and how it is concentrated. For the purposes of this report, some of the NIC's data covers a wider area than these PUAs so 'Brighton' covers Brighton and Worthing PUAs, 'Leeds' covers Leeds, Wakefield, Bradford and Huddersfield PUAs, and 'Portsmouth' covers Portsmouth and Southampton PUAs.

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## Box 7: Understanding the data

The data in Figure 3 measures transport connectivity from where people live in each of the Built Up Areas (BUAs) to the centre of the Output Area (OA), or contiguous set of OAs in the BUA with the highest number of jobs. The minimum journey time is calculated from each OA to the defined city centre for (i) the public transport option and the private vehicle option, and (ii) the public transport option only. The public transport option includes average waiting time for peak services.

These outputs are divided by the time it would take to travel in a straight line from the start point to the city-centre destination at 50kph (31 mph). A connectivity value of 1 is equivalent to being able to travel at 50kph in a straight line from origin to employment destination in the city centre.

The light green line measures the private vehicle option. Milton Keynes' score of 0.83 suggests that average commutes from within the BUA to the city centre are not too far from achieving 50kph in terms of directness and speed at peak times. The purple line measures the fastest public transport option and is slower in everywhere. Exeter's public transport system is the best in the country for getting workers into the city centre during the peak, with an average score of 0.39, while Telford has the lowest score at 0.16.

This data gives a score based on the average speed of the commute. It does not give direct information about the cost, comfort, convenience or any other factor that also influences whether and by what mode people commute into city centres at peak times. It is also a weighted average across the city, so it does not capture individual corridors or bottlenecks that are impeding connectivity and may make for frustrating individual journeys.

### Why focus on peak-time journeys?

The peak-time accessibility of the city centre is important for two reasons. The first is that the city centre is the single most common destination for journeys in a city because of its economic role. The second is that the peak is the most common time when people are making journeys, when most pressure is put on transport systems. This spatial and temporal concentration of demand for journeys puts transport networks under the greatest strain, leading to congestion on roads or crowded buses, trains and trams.

Peak-time transport accessibility into city centres is growing in importance even as the overall numbers of commuting journeys falls, and changing work patterns mean five-day commuting is in decline.<sup>7</sup> The headline reduction in commuting trips nationally masks the growing number of peak-time journeys into successful city centres on weekdays that make their roads, buses, trams and trains increasingly congested.<sup>8</sup>

7 Urban Transport Group (2019). Number crunch 2019: Urban transport trends in changing times

8 Greater Manchester Combined Authority (2019) Submission to the Williams Rail Review consultation

The NIC data is not perfect. It is limited in that it looks at the average journey and so does not allow for bottlenecks – the average journey for a city may be much quicker than some commuters experience on specific routes. In addition, as Box 7 makes clear, the built-up areas used in the data do not always align with the primary urban areas, which Centre for Cities considers to be a better reflection of the functional economic geography of the places. Nevertheless, the data provides important insight and a consistent national comparison for the nature of transport provision and use in these cities and large towns and how it relates to economic performance.

### **Congestion is not a major issue into many city centres**

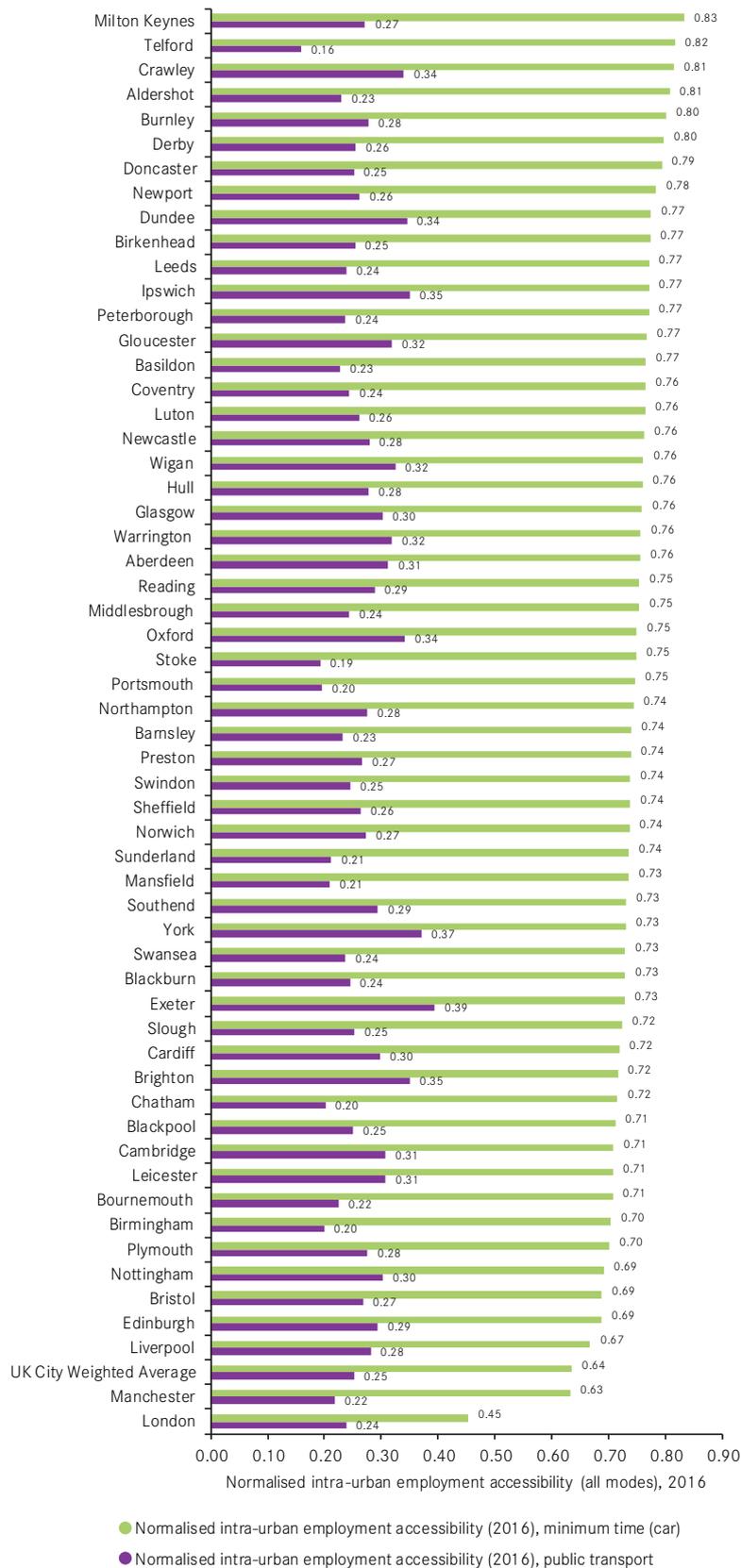
In most places accessing city-centre employment by the fastest route is reasonably quick, even at peak times. Figure 3 uses the NIC data to set out the performance of transport networks in British cities and large towns in order of the fastest possible journey into the city centre. The light green bars show the accessibility for a journey by the fastest mode – which the NIC’s modelling calculates is always by car – whereas the purple bars refer to the speed of the journey by the quickest public transport route.

The most striking finding from the data is that, in most places, congestion is likely to be a minor constraint to linking workers with city-centre jobs even if there are some bottlenecks and delays on a few roads at the height of rush hour. Figure 3 shows that in 45 of the 57 cities and large towns measured, the city-centre jobs accessibility score (the fastest journey) is between 0.70 and 0.79 where a score of 1 would indicate a “perfect accessibility”.<sup>9</sup>

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<sup>9</sup> A score of 1 would be equivalent to travelling a straight line speed of 50 km per hour. Once indirect routes and traffic lights are accounted for, scores in this range are close to the 30 miles per hour speed limit of built-up areas.

**Figure 3: NIC’s employment accessibility score by fastest mode (car) and fastest public transport, 2016**



Source: National Infrastructure Commission

Those with the best NIC accessibility scores are either:

- Strongly-performing cities or new towns with relatively small city-centre economies, such as Aldershot, Telford and Crawley. In these places, the more dispersed nature of jobs means that there are fewer bottlenecks which hinder a smooth commute to work. For new towns such as Milton Keynes, which were planned and built for travel by car, their high-capacity road networks have been able to handle the levels of demand to travel into the city centres even where this has grown rapidly.
- Places with weaker city-centre economies, such as Derby and Doncaster, have good intra-urban employment accessibility as the low number of jobs in the centre means there is lower demand to travel there. As a result, the existing capacity of the road network supports largely free-flowing traffic on average. In these cities, good car accessibility is a symptom of a weak city centre economy.

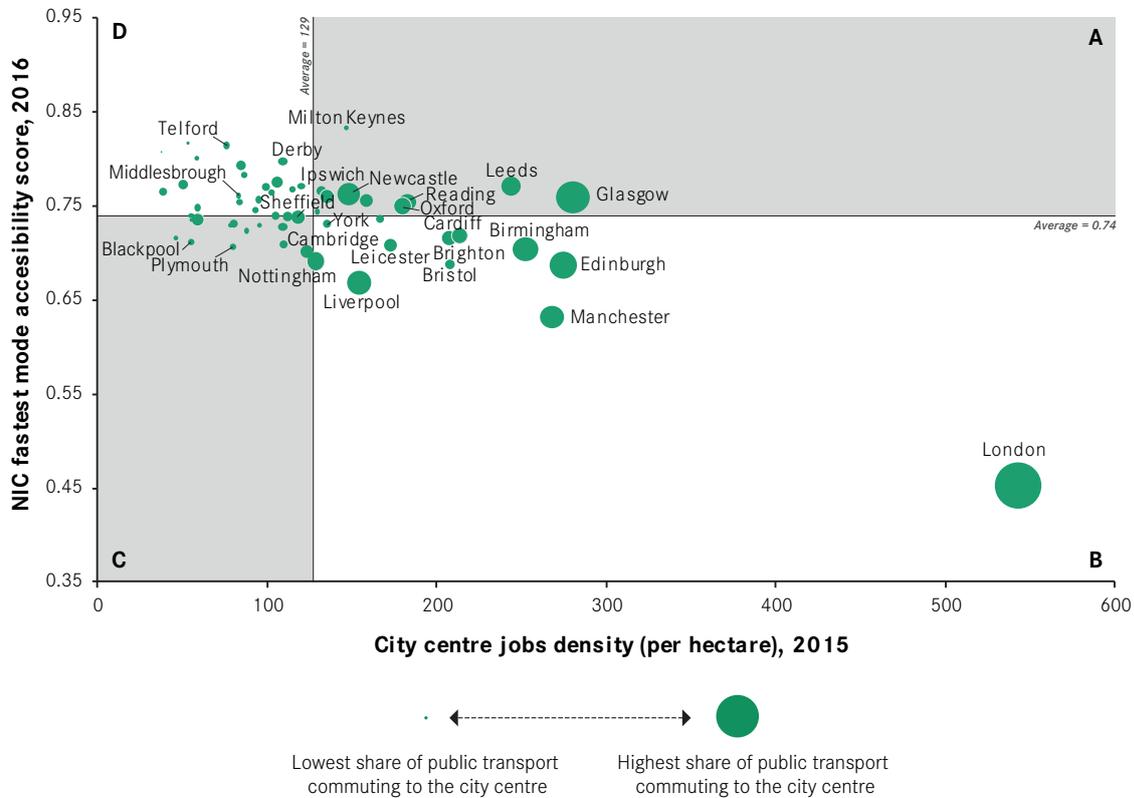
### **City-centre accessibility decreases with increasing jobs density**

According to the NIC data, those cities with the lowest accessibility scores are those with the densest city centres, i.e. those city centres that have the largest funnelling of commuters into them at peak times, and show consequently higher levels of congestion. Figure 4 illustrates this negative relationship between the NIC accessibility score (irrespective of mode) and the density of jobs in the city centre. In the bottom-right quadrant – B – are city centres such as Manchester's, which has 268 jobs per hectare and an accessibility score of 0.63, and London, which has 543 jobs per hectare in the city centre and an accessibility score of just 0.45.

In contrast, city centres in the top-left quadrant – D – are much less dense and have much faster access according to the NIC data. This includes centres such as Aldershot, Telford and Newport. Aldershot's centre for instance has just 38 jobs per hectare and a higher NIC accessibility score of 0.81. Congestion into these city centres is much less of an issue on average.

It is the economic geography of a city or large town that plays a fundamental role in the speed of the transport system into the centre. An increasing number of jobs in the centre, which leads to an increase in journeys into it, necessarily slows down commuting by private transport as more cars compete for limited road space.

**Figure 4: NIC’s employment accessibility score by fastest mode (car) against city centre jobs density**



Source: ONS, Business Structure Database; National Infrastructure Commission

These patterns tend to influence whether a commuter decides to travel by public or private transport. As the bubbles in Figure 4 show, commuting by public transport increases as density increases and accessibility falls. While only 12 per cent of city-centre workers in Telford (the place with the highest accessibility score) commuted by public transport in 2011 (the most recent data available), 80 per cent of London city-centre workers did so.

This occurs because of the shift in balance of the relative costs and benefits between travelling by car and public transport that a larger city-centre economy creates. As the NIC data above shows, car travel is still quicker than public transport into every city centre in Britain. But the narrowing of this gap for the densest city centres, combined with other associated costs, such as parking charges, and in London’s case, the Congestion Charge, means that in Manchester and Birmingham around half of all city-centre commuters chose public transport in 2011.

Of course, public transport is not the only alternative to the car - walking and cycling are options too. But these options are far more popular choices in smaller cities such as Cambridge and York (where walking and cycling account for 41 per cent and 40 per cent of city centre commutes respectively) than for larger cities such as Liverpool or Manchester.

Bristol stands out as a major city with very high levels of walking and cycling into the city centre (32 per cent), which is a function of the higher share of city centre workers living in neighbourhoods around the city centre. These may be desirable because of the quality of housing, schools or shopping and cultural amenities. It may also be that the weakness of public transport accessibility further out from the city centre puts a higher premium for city-centre workers on housing within walkable distance.

There are two implications. Firstly, a growing city centre needs a transport system that allows an increase in commuters into it, and **significant growth requires substantial public transport capacity** as the roads become congested for cars.

Secondly, most cities with weak city-centre economies – those in quadrant D – have significant road capacity to support jobs growth in the city centre without leading to congestion. These **weaker cities should focus on encouraging more jobs to locate in the city centre and maintaining bus speeds**. It is unlikely that new public transport infrastructure or upgrades will be of tangible economic benefit to residents or businesses in these cities in the short- or medium-term.

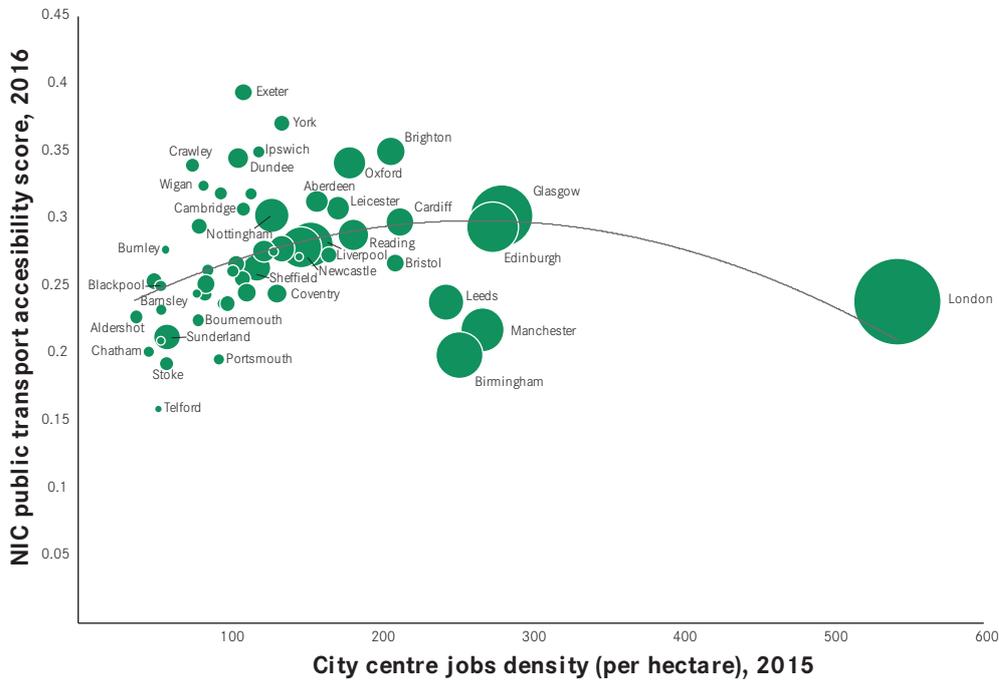
In contrast to the strongly-negative relationship between city-centre accessibility by car and jobs density, the relationship between public transport accessibility and jobs density is bell-shaped: accessibility to the city centre initially increases with jobs density but decreases after having exceeded a certain level of density (see Figure 5).

It is particularly the weaker and less-dense city centres that have worse public-transport accessibility. Lower demand to access the smaller number of jobs in the weakest city centres makes public transport less viable, meaning less frequent services that increase average waiting times and worsen public transport accessibility. Conversely, denser and stronger city centres generate higher levels of demand for services to access more jobs. This supports the provision of more-frequent city-centre services to meet this demand, bringing down average waiting times for passengers and increasing public transport accessibility.<sup>10</sup>

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<sup>10</sup> Urban Transport Group (2019), What scope for boosting bus use? Leeds: Urban Transport Group

**Figure 5: NIC’s employment accessibility score by public transport against city centre jobs density**



Source: ONS, Business Structure Database; National Infrastructure Commission

Figure 5 suggests that there is a turning point in this relationship. While the relationship is positive up to around 200 jobs per hectare, after this point public transport accessibility begins to fall. This could be because greater competition for road space slows buses down after a certain point, or the necessary increase in traffic lights and junctions makes journeys longer. As the bubble sizes suggest though, this does not appear to deter public transport usage, suggesting that public transport remains the most efficient mode of transport to get people to work in these cities.

In part, this is because of other public transport options that are available that are not competing for limited road space. In these cities, the rail network has overtaken the bus or car as the single most important transport mode to access the city centre at peak times. Rail journey reliability and times are less affected by the higher demand that worsens car and bus accessibility. This does mean though that residents reliant on buses have seen their feasible commutable distance shrink (see Box 9) while rail commuters have seen the number of jobs they can access grow.

Besides London, seven cities – Manchester, Birmingham, Bristol, Leeds, Edinburgh, Glasgow and Cardiff – have city centres with jobs density above 200 and public transport accessibility of 0.3 or below. Manchester, Leeds and Birmingham in particular stand out for their slow public transport.

The more reliable and faster parts of the public transport networks into the city centre at peak times, such as rail, tram and busways, are at capacity, while buses exposed to road congestion have spare capacity largely due to unreliability and unjustifiable commuting times (see Figure 6). The future jobs growth in these city centres is most at risk of being constrained by their inadequate transport infrastructure.

### **Box 8: How Brighton has supported city-centre growth by better use of the road network**

**Brighton** has managed to push the limits of jobs density in its city centre (207 jobs per hectare – up 31 per cent between 1998 and 2015) while maintaining public transport accessibility (0.35). A key element of this has been ensuring that local bus services are not caught up in growing traffic. Buses are segregated from cars and prioritised using bus priority junctions, bus lanes and bus gates. The city also suppresses demand from car users through high parking charges in the city centre – the city raises more than Manchester and Birmingham councils combined from parking. This raises funds to invest in schemes that improve the bus offer to residents still using the car, such as park and ride.

By making the road network less efficient for cars, Brighton has increased its efficiency at carrying passengers. This has allowed the city centre to continue growing without significant new rail services or tram infrastructure.

### **Box 9: Repairing links to city-centre opportunities through bus priority measures**

**Birmingham** city centre attracted 30 per cent more jobs between 1998 and 2015. The demand to access these jobs has reduced the efficiency of the road network and slowed down buses. Work by the Open Data Institute Leeds and Transport for the West Midlands found that over 10 years, bus speeds have fallen by 10 per cent and pushed 216,000 residents beyond a 45-minute bus commute of the city centre.<sup>11</sup> Increasingly, commuters are travelling by train.<sup>12</sup> Residents of parts of the city reliant on buses for public transport face longer and less-reliable peak journey times by bus, putting city-centre jobs out of reach for some. In response, Transport for the West Midlands is introducing plans to speed up bus journeys and increase reliability using funding from the recently-announced National Bus Strategy.<sup>13</sup>

11 ODI Leeds (2018). Real Journey Times Project

12 Transport for West Midlands (2017). West Midlands Travel Trends

13 Department for Transport (2019). Government takes the first steps in a bus revolution

## **A lack of spare capacity supports the case for further major infrastructure investment**

As well as speed, capacity is also an issue that should be considered when looking at the performance of the transport network and requirements for investment. A system with a lot of spare capacity is unlikely to need large infrastructure investment. While data on usage is patchy, estimates are available for the primary centres of England's combined authorities (see Figure 6).<sup>14</sup>

This more limited dataset suggests that the denser the city centre, the less spare road and train capacity there is. In the West Midlands, for instance, 83 per cent of road capacity, and 63 per cent of national rail capacity in the city centre is being used at peak time – one of the highest of any of the areas measured.

But the averages presented in this overall city score do not capture particular lines and routes into city centres that are at capacity. In Greater Manchester, for instance, the Metrolink line from Altrincham into Manchester city centre is full at peak times and has been since soon after opening, leaving some commuters unable to board services, while elsewhere on the network, peak-time trams from Rochdale are not full.<sup>15</sup>

Bus capacity stands out for its lower capacity utilisation. In several of these cities, the share of bus capacity used into the city centre is much lower than for national rail and road. In the West Midlands, less than half (46 per cent) of the bus capacity is used and in West Yorkshire only 63 per cent is used despite more than 80 per cent of road and rail capacity being taken up.

This raises the question as to why capacity utilisation is not higher given the nature of its accessibility score and the density of its city centre. Work by the Open Data Institute Leeds for the West Midlands Combined Authority shows that it is the inefficiency of the system – especially the irregularity of and delays to services at peak times – that makes the bus an unattractive option.<sup>16</sup> Given this, policy should look at what investments, such as bus lanes, can improve the efficiency of existing services.

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14 Collected data not available for Cambridge and Peterborough.

15 TfGM (2017) DSD REPORT 1912 Transport Statistics 2016 Rail & Metrolink Section

16 ODI Leeds (2018). Real Journey Times Project

Figure 6: Combined authority primary-city centre jobs density and transport-capacity utilisation (see Box 10)

Primary centres of England's Combined Authorities	City-centre jobs density (jobs per hectare)	Road use		National rail use		Bus use		Metro/tram use		Active travel
		Peak hour capacity	% of capacity used	Peak hour capacity	% of capacity used	Peak hour capacity	% of capacity used	Peak hour capacity	% of capacity used	
Manchester	268	27,000	77	27,000	58	30,000	51	15,000	57	5,600
Birmingham	252	32,000	83	33,000	63	35,000	46	3,000	37	3,300
Leeds	244	18,000	85	19,000	80	23,000	63	N/A	N/A	5,300
Bristol	208	21,000	68	7,000	58	16,000	61	N/A	N/A	14,200
Liverpool	154	29,000	54	24,000	45	22,000	31	N/A	N/A	4,300
Newcastle	148	25,000	49	6,000	36	23,000	52	22,000	27	5,300
Sheffield	118	23,000	40	7,000	48	17,000	46	6,000	36	4,200
<b>Middlesbrough</b>	<b>84</b>	<b>14,000</b>	<b>29</b>	<b>2,000</b>	<b>28</b>	<b>6,000</b>	<b>31</b>	<b>N/A</b>	<b>N/A</b>	<b>2,000</b>

Source: National Infrastructure Commission

Note: Peak hour capacity is the total passenger capacity to reach the city centre between 0800-0900.

### **Box 10: NIC urban transport capacity data**

The capacity of different transport modes in each city given in Figure 6 is taken from the Urban Transport Capacity Metric, prepared by Steer for the NIC. It represents the capacity utilisation for each mode entering a city centre cordon area in the AM peak, over a one-hour period. It has been calculated by establishing the total capacity on each mode entering the area and estimating total demand into that same area.<sup>17</sup>

### **‘Build it and they will come’ cannot be justification for major transport infrastructure investment**

A counter-argument sometimes put forward is that investing in better public transport now will spur the growth of a city-centre economy, rather than the other way round. But the relatively free-flowing nature of the transport network into many city centres suggests that this is not a constraint on growth, and further investment will make little fundamental difference. ‘Build it and they will come’ is unlikely to be a successful strategy.

This also applies to the type of transport that infrastructure investment is used to support. While the political allure of a large new tram or underground system is clear, it may not be the most appropriate intervention. Cities should consider the mix of modes and their performance carefully when planning new infrastructure investments. Box 11 considers the case of investment in tram lines in Manchester and Sheffield.

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<sup>17</sup> Urban Transport Analysis: Capacity and Cost, National Infrastructure Commission, Study Report July 2018

### Box 11: Build it and they still might not come

Transport infrastructure investment in Sheffield and Greater Manchester illustrates the importance of building new high-capacity transport in line with demand and as part of a wider city-centre strategy. Both cities have an extensive tram network, but the share of commuters using public transport to access the city centre looks very different (see Figure 6). That is because of the different performance of their city centres.

Opened in 1992, **Greater Manchester's** Metrolink tram first connected the city's prosperous southern suburbs and Bury through the city centre. These added capacity and higher-frequency services to an existing heavy rail line. The improvement is one part of Greater Manchester's wider efforts to support the city centre – the fastest growing for jobs and population in recent years<sup>18</sup> – as a place for business, housing, education and leisure. The higher-than-expected ridership on this route<sup>19</sup> has also provided an operational surplus to help the city fund maintenance and expansions to Oldham, Rochdale and to Trafford Park.

Launched two years later, **Sheffield's** Supertram linked a weaker city centre with Meadowhall, an out-of-town shopping centre, and industrial zones along the Don Valley to less affluent suburbs. The city centre has struggled in recent years, with the number of jobs actually falling between 1998 and 2015.<sup>20</sup> Disappointing Supertram ridership meant that local councils ended up paying the costs of construction, rather than the tram franchisee as had been hoped. It now has the highest proportion of concessionary journeys of any tram in the country, at 32.5 per cent.<sup>21</sup> Initial plans by the local transport authority to expand the Supertram beyond Sheffield to other local authorities across South Yorkshire have been stopped, despite all local authorities helping to fund its construction through council tax contributions.<sup>22</sup>

18 McDonald R and Swinney P (2019) City centres: past present and future London: Centre for Cities

19 National Audit Office (2004) Improving public transport in England through light rail

20 McDonald R and Swinney P (2019) City centres: past present and future London: Centre for Cities

21 Department for Transport (2018) Light rail and tram statistics: 2017/18

22 Rail Magazine (2015) Sheffield Supertram's logical progression <https://www.railmagazine.com/infrastructure/light-rail/sheffield-supertram-s-logical-progression>

# 04

## What needs to change

This research shows that there is a strong case for new transport infrastructure investment in some cities and large towns. But this only applies to a handful of places where the current transport system is struggling to support the growth of their city-centre economies.

At present, transport systems provide relatively fast commutes for car users to access city-centre job opportunities in most British cities. Poor public transport is not the cause of weak city centres; rather it is the low numbers of commuters attracted into weak city centres – and the ease of driving – that make frequent and extensive public transport services commercially unviable. Funding for new transport infrastructure in these cities will do little to spur economic growth.

**In these cities, demand for new major transport infrastructure investment must be generated first.** That means that these cities must focus on growing their city-centre economies to generate the densities that support higher productivity and better public transport accessibility. The existing transport network is likely to be able to support this growth, in the short term at least, if it occurs. It is important to stress that these cities should still have access to funding streams to support the existing local transport infrastructure and services and the efficient management of the system.

**Instead, it is cities with already strong and growing city centres, where public transport usage is high, and journey times are relatively slow that need new investment in major transport infrastructure.** London, Manchester, Birmingham, and Leeds in particular stand out for their slow and/or at-capacity public transport networks. Bristol, Cardiff, Edinburgh and Glasgow face similar though less-severe transport barriers for residents and businesses.

The National Infrastructure Commission identified £31 billion additional investment for new transport infrastructure in priority cities outside London up to 2040. The Government should take up this recommendation. While large, this sum is significantly smaller than the £88 billion for HS2 and equivalent £39 billion promised for Northern Powerhouse Rail. This money should be primarily focused on the cities identified above. The £31 billion should be available to these cities providing they meet two conditions:

1. **Cities contribute a share of the costs locally** so that risks are shared between local and national government; and
2. **This local contribution includes revenues from a city-centre congestion charge.**<sup>23</sup> If these cities are serious about improving their transport networks, they need to also take politically-tough decisions locally to do so.

Of those cities and large towns requiring new infrastructure, the increasing demand for space and the growing inability of private transport to supply the city centre with workers at peak times means **investments in new infrastructure should enlarge the public transport network.** The exact nature of this should respond to the specific requirements of each city centre. Whereas some may benefit from a tram line to respond to demand for extra journeys, others such as Manchester will require tunnelling to provide the space for extra trams or trains to enter and exit the thriving city centre.<sup>24</sup>

This report has not looked at the management of existing systems. If new infrastructure investment were coupled with initiatives to better manage existing transport, particularly buses, this would further boost the efficiency and equity outcomes of such investments. **All cities and large towns should look at how to improve the management and efficiency of their existing networks.** While management falls outside of the scope of this report, detailed recommendations can be found in two further Centre for Cities reports: *Delivering change – improving urban bus transport* and *Delivering change – Making Transport Work for Cities*.

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<sup>23</sup> The charge to access this transport infrastructure fund to improve city-centre job accessibility must be based on a vehicle's contribution to congestion that reduces accessibility rather than its emissions. Clean Air Charges target only a small sub-section of vehicles and are not intended to have an impact on congestion. Any impact on congestion is unintentional and short-term.

<sup>24</sup> Transport for Greater Manchester (2019). Our Prospectus for Rail

## Appendix I

### Strength of city centres based on jobs density in 2015 and growth in jobs density since 1998

For this report, economically strong city centres are those with:

- Jobs density over 200 jobs per hectare in 2015
- Growing jobs density between 1998 and 2015

City	Jobs density per hectare (2015)	Growth in jobs density (1998 – 2015)	City	Jobs density per hectare (2015)	Growth in jobs density (1998 – 2015)
London	543	71%	Derby	109	-8%
Glasgow	281	15%	Dundee	106	0%
Edinburgh	275	3%	Preston	105	-2%
Manchester	268	84%	Luton	102	-22%
Birmingham	252	30%	Huddersfield	101	-15%
Leeds	244	34%	Peterborough	99	11%
Cardiff	213	19%	Swansea	95	7%
Bristol	208	41%	Warrington	95	4%
Brighton	207	31%	Wakefield	94	-10%
Reading	183	6%	Portsmouth	93	16%
Oxford	180	27%	Slough	88	1%
Leicester	172	-11%	Newport	86	-1%
Norwich	166	16%	Doncaster	85	-1%
Aberdeen	158	-8%	Middlesbrough	84	-11%
Liverpool	154	27%	Wigan	83	9%
Newcastle	148	29%	Southend	80	-15%
Milton Keynes	147	52%	Bournemouth	80	16%
Bradford	142	-16%	Blackburn	79	2%
York	135	-33%	Crawley	76	10%
Hull	135	3%	Worthing	62	1%
Coventry	132	-6%	Sunderland	59	-32%
Northampton	130	-11%	Stoke	59	-18%
Nottingham	128	-5%	Burnley	58	16%
Plymouth	123	6%	Barnsley	55	-33%
Ipswich	120	-4%	Mansfield	55	-19%
Southampton	118	-19%	Blackpool	55	-13%
Sheffield	118	-2%	Telford	53	22%
Gloucester	115	5%	Birkenhead	50	-1%
Swindon	112	-15%	Chatham	47	-14%
Cambridge	110	17%	Basildon	39	-16%
Exeter	110	13%	Aldershot	38	-4%
London	543	71%			



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# Measuring ‘levelling up’

## New indexes on business and job opportunities

### Introduction

The UK economy is clustered in its 63 largest cities and towns. There is a great deal of variation between these places in terms of the types of economic activity that concentrate within them, and the opportunities they create for people who live in and around them.

[Cities Outlook 2020](#)'s City Monitor sets out how this variation plays out across a range of indicators, from business start-up rates and productivity through to skills levels and employment rates. This briefing pulls the array of indicators into two indexes to summarise and compare the performance of different places on two key issues – their ability to attract businesses and to provide employment opportunities to individuals – and what this means for policy, particularly ‘levelling up’.

What is immediately evident is the clear North/South divide on both indexes. Cities and large towns in the Greater South East perform strongly across the basket of business indicators, and they offer a greater number of employment opportunities. But this success comes with costs. This is most clearly seen through housing costs, but also through commercial space costs and air pollution, as [Cities Outlook 2020](#) illustrated.

While the North/South divide is what makes the headlines, what these indexes also show is that there is a great deal of variation between the largest cities and towns in the North and Midlands. Some, like Manchester, Coventry, and Leeds for example, perform in line or even better than the urban average, suggesting that, with the right support, they could more easily catch up with the economic growth of their more successful southern counterparts. Other cities and large towns lag much further behind and the challenges they face mean that improving economic opportunities in these places requires a longer time scale and a much bigger commitment.

The findings have a number of implications for the Government's 'levelling-up' agenda. First, an important part of improving the daily lives of people will be to end local government austerity in this year's Spending Review and increase spending on everyday services such as education and policing. This will have a positive impact on people across the country.

Second, government investment to improve the economy outside the Greater South East of England will need to be more selective. Economic realities mean that the Government must be careful what it promises so as not to create a noose for its own neck. Higher-skilled activities have increasingly clustered in urban areas in recent years because of the benefits cities offer, and these benefits are likely to become ever more important as the national economy becomes ever more knowledge-based. The indexes in this report show that many cities and large towns are not offering these benefits to the extent that they need to.

So the economic strand of 'levelling up' needs to focus on addressing the reasons why there are too few higher-skilled, better-paid job opportunities located in urban areas outside the Greater South East. And a key part of this approach needs to address the underperformance of the North and Midland's biggest cities such as Birmingham, Manchester and Liverpool if it is to bring greater prosperity to many millions of people.<sup>1</sup>

Third, the policy should not ignore cities and large towns in the South. The continued success of cities like Brighton and Milton Keynes are important for regional prosperity and support will be required to help these places deal with the costs of growth. Crucially though, the policy interventions in these places will look very different to those further north.

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1 Swinney P. and Enenkel K., (2020) 'Why big cities are crucial to 'levelling up'', London: Centre for Cities

## Business environment index

Economic activity is not evenly spread across the country, it concentrates in the UK's largest cities and towns.

Because of their scale and density, urban areas offer businesses three main benefits they cannot find elsewhere in the country:

- **Learning:** the ability to exchange ideas and information through social interactions and proximity to the source of knowledge;
- **Matching:** the ability to recruit from a large pool of workers with relevant skills and to match with businesses working in a similar field;
- **Sharing:** the ability to share inputs, supply chain and infrastructure.

As a result, cities are the preferred location for businesses. Despite accounting for 9 per cent of land, they are home to 56 per cent of businesses and to 71 per cent of the most productive businesses.

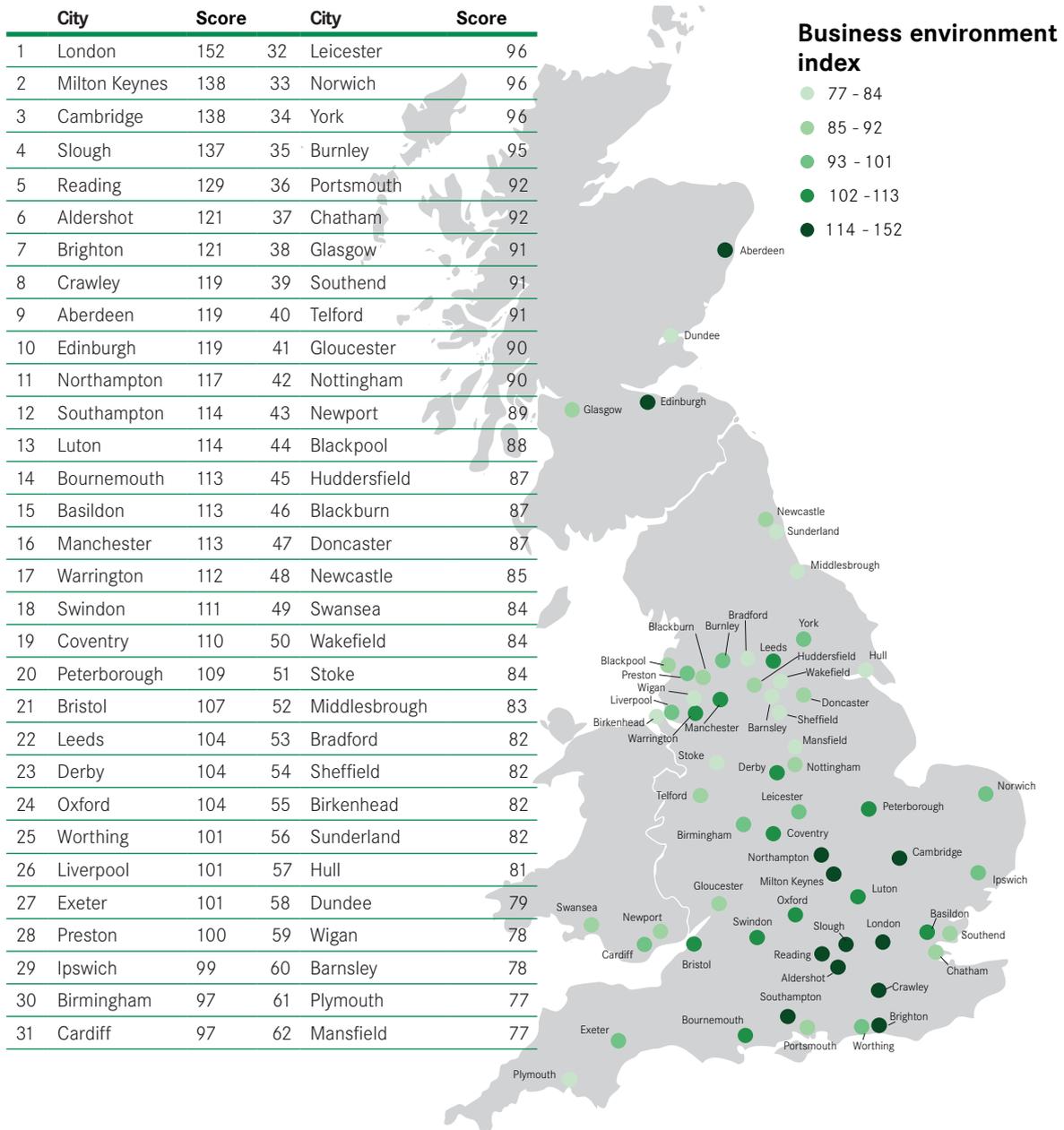
While in principle every city could offer these benefits, some have more dynamic business environments than others. The business environment index illustrates these differences by combining five indicators to assess the strength of the business base of a place:

1. **Number of start-ups** per 10,000 population to account for the dynamism of a business environment;
2. **Business stock** per 10,000 population; and
3. **Share of jobs in the private sector** as measures of the size of the business base;
4. **Productivity per worker** as a measure of efficiency;
5. **Number of patent applications** per 100,000 population as a measure of innovation.

Based on the index, there is a stark North/South divide in the business environment of different places (see Figure 1). The top 10 with the most dynamic business environments are predominantly in the Greater South East (a region comprising London, the South East and East). London is the city with the most dynamic business environment, followed by Milton Keynes and Cambridge. None of the cities in the bottom 10 is in the Greater South East.

Aberdeen, in ninth position, is the best performing city outside the Greater South East, while the highest ranked northern city, Manchester, is 16<sup>th</sup>. Northampton is the highest ranked in the Midlands (11<sup>th</sup>) and Cardiff is the highest ranked Welsh city (31<sup>st</sup>).

**Figure 1: Business environment**

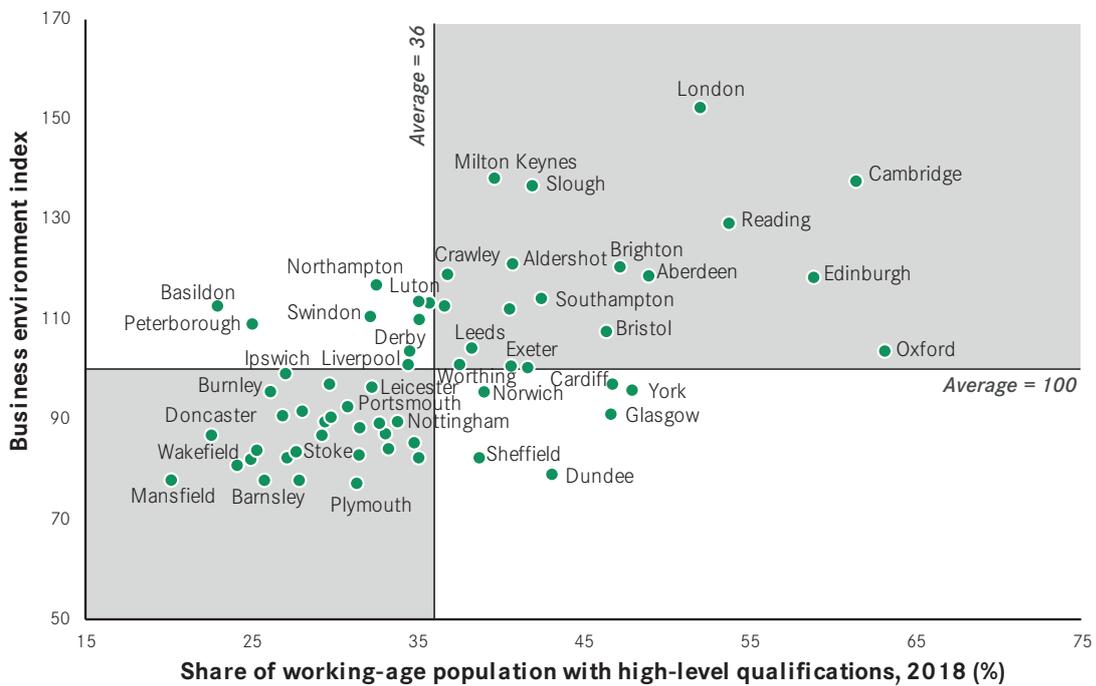


Note: the index was constructed using five indicators: (1) business start-ups per 10,000 population, (2) business stock per 10,000 population, (3) private sector jobs per 10,000 population and (4) patents applications per 100,000 population and (5) GVA per worker. Belfast is excluded because data for one or more indicators for them is not available.

Source: Centre for Cities own calculations based on the five indicators mentioned above. ONS 2019, Business Demography, 2018 data. ONS 2019, Population estimates, 2018 data. ONS 2019, Business Demography, 2017 and 2018 data. ONS 2019, Population estimates, 2018 data. ONS 2019, Business Register and Employment Survey, 2017 and 2018 data. ONS 2019, Regional gross domestic product (GDP), 2018 data. PATSTAT 2019, 2018 data; Intellectual Property Office 2018, Patents granted registered by postcode, 2018 data. ONS, 2019, population estimates, 2018 data. ONS 2019, Business Register and Employment Survey, 2018 data.

Places with more dynamic business environments have more skilled people living and working in them (see Figure 2). This is because these places are more likely to be home to more high-skilled businesses, such as consultants, financial services and software designers, and this in turn has implications for productivity and innovation. As such, all cities in the top 10 for business environment are above the national average for shares of their working-age population having high-level qualifications. In London, Reading, Edinburgh and Cambridge, more than half of working age residents have a degree or equivalent. Meanwhile, only a handful of cities with a below-average share of working-age population with high-level qualifications perform better than the average for business environment. Interestingly, these are mostly cities and large towns close to London.

**Figure 2: The relationship between skills and business environment**



Source: ONS 2019, Annual Population Survey, resident analysis, 2018 data; DETINI 2019, District Council Area Statistics for Belfast, 2018 data. Centre for Cities' own calculations for business environment index (see source under Figure 1).

## Employment opportunities index

Cities are places of opportunity, not just for businesses, but for individuals too. Compared to other areas, they offer large and varied labour markets, where individuals not only can access many employment opportunities, but are also more likely to find jobs that match their interests and expertise, and opportunities for career progression and specialisation.

Between cities however, there is considerable variation, with some providing much better employment opportunities than others. The employment opportunities index illustrates such differences by using three indicators to look at different aspects of the employment opportunities a place offers:

1. **Employment rate** measures how well functioning a labour market is, by capturing the demand for workers amongst employers;
2. **Claimant count rate** is a measure of unemployment, showing the number of people that would like to participate in the labour market but are currently out of work;
3. **Average weekly workplace wages** reflect the types of jobs available in a local economy.

Based on the index, cities and large towns in the Greater South East offer better employment opportunities (see Figure 3). Aldershot is the place that performs best overall, followed by Cambridge, Reading and Oxford, and seven of the top 10 cities on this measure are located in the region. Meanwhile, Worthing, Luton and Peterborough are the only places in the Greater South East to perform below the average.

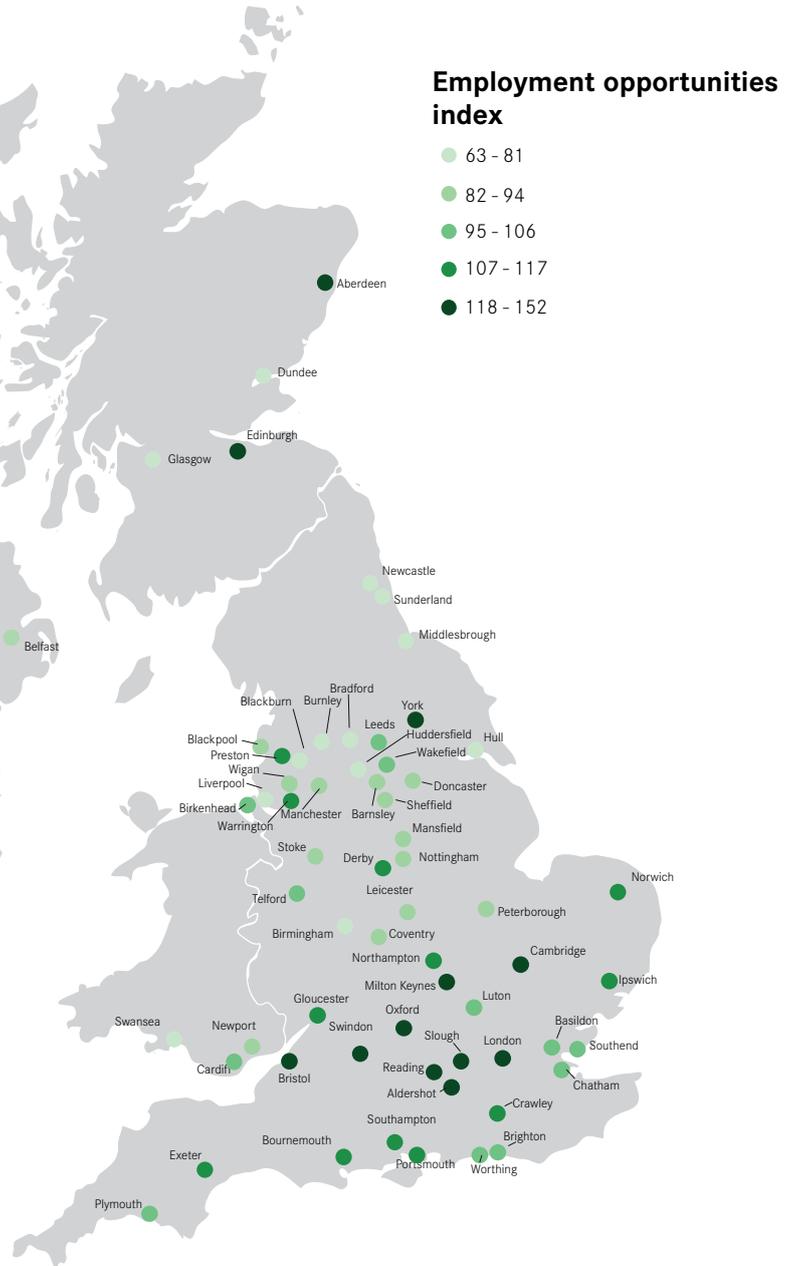
Elsewhere in the UK:

- York is the best-placed northern city (seventh)
- Aberdeen is the best-performing Scottish city (eighth)
- Northampton is the highest-ranking in the Midlands (17<sup>th</sup>)
- Cardiff is the best-placed Welsh city (29<sup>th</sup>)

In contrast, the North of England is over represented at the bottom of the ranking, and, together with Wales and the Midlands, it has less vibrant labour markets. Only six cities from these regions perform better than the city average.

**Figure 3: Employment opportunities**

City	Score	City	Score
1 Aldershot	152	33 Wakefield	98
2 Cambridge	140	34 Luton	97
3 Reading	138	35 Belfast	97
4 Oxford	135	36 Plymouth	95
5 London	132	37 Birkenhead	95
6 Slough	125	38 Sheffield	94
7 York	125	39 Peterborough	93
8 Aberdeen	125	40 Coventry	93
9 Milton Keynes	123	41 Wigan	90
10 Edinburgh	123	42 Mansfield	90
11 Bristol	121	43 Leicester	89
12 Swindon	118	44 Manchester	89
13 Exeter	117	45 Newport	88
14 Crawley	116	46 Doncaster	88
15 Southampton	115	47 Barnsley	88
16 Bournemouth	114	48 Nottingham	85
17 Northampton	114	49 Blackpool	85
18 Derby	111	50 Stoke	83
19 Portsmouth	110	51 Newcastle	82
20 Warrington	109	52 Huddersfield	81
21 Gloucester	108	53 Glasgow	80
22 Ipswich	108	54 Swansea	80
23 Norwich	107	55 Liverpool	75
24 Preston	107	56 Hull	75
25 Brighton	106	57 Sunderland	71
26 Southend	104	58 Blackburn	71
27 Basildon	103	59 Birmingham	69
28 Chatham	103	60 Dundee	68
29 Cardiff	102	61 Burnley	68
30 Leeds	100	62 Middlesbrough	68
31 Telford	99	63 Bradford	63
32 Worthing	98		



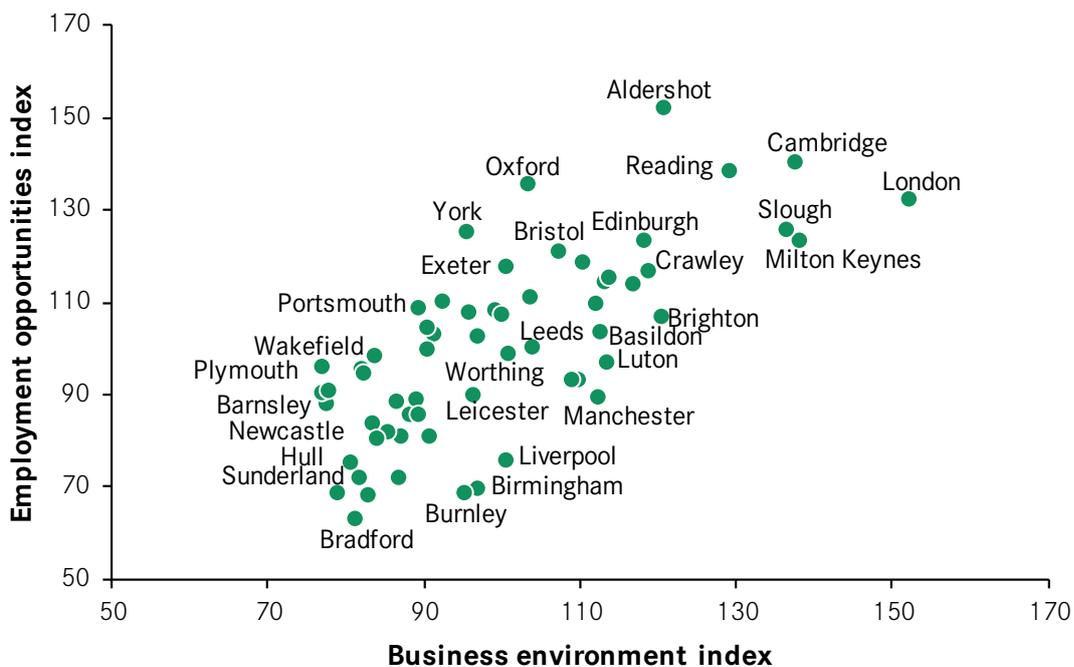
Note: the index was constructed using three measures: (1) employment rate, (2) claimant counts and (3) average weekly workplace wages.

Source: Centre for Cities own calculations based on the three indicators mentioned above. ONS 2019, Annual Population Survey, Jul 2017 - June 2018 and July 2018 - June 2019; District Council Labour Market Structure Statistics for Belfast, 2017-2018 data. ONS 2019, Claimant count, November 2018 and November 2019; Population estimates, 2017 and 2018 data. ONS 2019, Annual Survey of Hours and Earnings (ASHE), average gross weekly workplace-based earnings, 2019 data; DETINI 2019, Annual Survey of Hours and Earnings (ASHE), average gross weekly workplace-based earnings, 2019 data. Own calculations for PUA-levels weighted by number of jobs, CPI inflation adjusted (2015=100). Earnings data is for employees only, whereas the rest of the tables use employment data.

Crucially, the performance of cities on the two dimensions is interlinked, with places that are more attractive to businesses also providing better employment opportunities for individuals (see Figure 4). Eight of the top 10 cities for business environment are also among the top 10 performers for employment opportunities, while Dundee, Hull, Bradford, Sunderland and Middlesbrough are among the bottom 10 cities on both indexes.

There are two reasons for this. Firstly, the presence of many businesses, and in particular many highly-productive businesses, translates into more job opportunities and higher wages for those working in high-productivity sectors, their supply chains and related activities. Secondly, the money these businesses inject into the local economy creates demand – and consequently more job opportunities – in other businesses too, such as restaurants, cafes and hairdressers.

**Figure 4. The relationship between the business environment index and the index of employment opportunities**



Source: Centre for Cities own calculations for business environment index (see source under Figure 1) and employment opportunities index (see source under Figure 3).

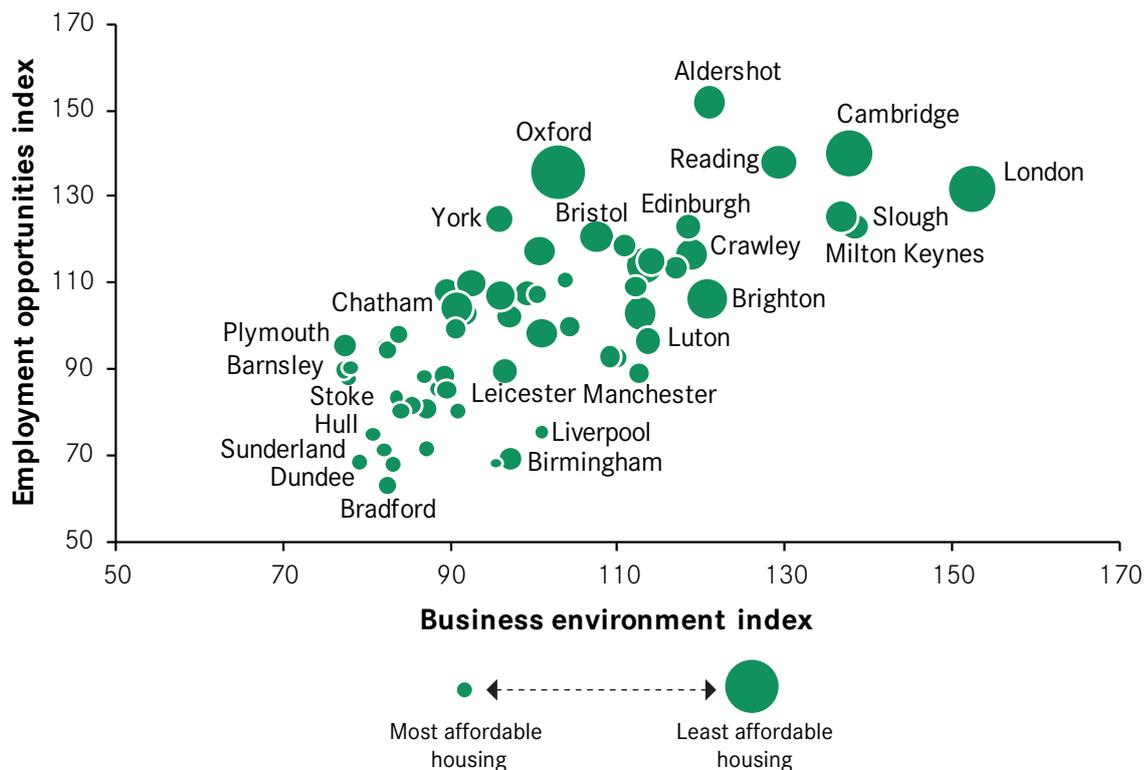
## The other side of the coin: the costs of economic success

As successful places grow and attract more businesses and individuals, this high demand creates costs and pressures, from increased costs of living to congestion and air pollution.

Housing affordability is a good example. When many people want to live somewhere because of the opportunities it offers, demand for houses increases. If this demand is not met by building enough homes, housing costs increase, making a place less affordable. This particularly affects those on lower wages, and especially those living in the private-rented sector.

This is clearly a challenge for many successful cities and large towns (see Figure 5). Aldershot, Cambridge and Reading, the top three for employment opportunities, and among the top 10 best performing for business environment, are also among the top 10 least-affordable places in the country. This once again reveals a stark North/South divide, with cities in the Greater South East being particularly expensive places to live while, in cities elsewhere in the country that tend to perform less well on the two indexes, affordability is much less of an issue.

**Figure 5: The relationship between business environment, employment opportunities and housing affordability**



Source: Centre for Cities own calculations for business environment index (see source under Figure 1) and employment opportunities index (see source under Figure 3). Land Registry 2019, Market Trend Data, Price Paid, 2019 data. Simple average used. Scottish House Price Statistics, 2019, Mean house prices, 2018 and 2019 data. ONS 2019, Annual Survey of Hours and Earnings (ASHE), average gross weekly resident earnings, 2019 data.

## What needs to change

Understanding why places perform differently on the two dimensions is crucial to identifying the challenges cities and large towns face and to designing policies that can help local and national government 'level up' the economy.

But improving the economic performance of places up and down the country is not an easy task, as shown by the long list of attempts to do so in the past. The different nature of the challenge in each place means that the policy approach must also vary. In addition to that, the interlinked nature of the different factors determining the success of a place means that, to ensure prosperity both for people and places, policy at the local and national level must act simultaneously on different fronts.

This briefing points to three main areas of action:

- 1. Opening up opportunities to individuals:** skills are a key determinant of success for individuals; people who are more qualified are more likely to be in employment and to earn higher wages. As such, improving the skills of the workforce must continue to be a key goal.

In practice this means:

- Focusing on supporting people with no or low qualifications to achieve at least level 2 qualifications, i.e. equivalent to five good GCSEs;
- Increasing focus on and funding for further education colleges and technical education;
- Understanding and addressing barriers to adult education, tailoring provision to people's needs;
- Better coordination at the local level between education providers and businesses;
- Addressing school underperformance where this is an issue.

- 2. Kickstarting growth in less prosperous cities and large towns:** while improving skills alone will provide better outcomes for individuals, it may not – on its own – improve outcomes for places. For people to be able to fully utilise their skills in or near where they live, skills interventions must be complemented by measures aimed at improving the business environment of a local economy.

The impact that this will have is likely to vary with size. In principle, many of the UK's largest cities are inherently better able to offer the benefits that higher-skilled firms offering higher-paid jobs look for. And their size means that improving their performance will impact the widest number of people.

To be clear, this is not an argument against helping smaller places; rather an underlining of the necessity to improve the performance of some of our biggest cities in particular if the country really is to 'level up'.

This requires actions on different dimensions:

- Improving the ability of places to foster innovation and new ideas;
- Providing suitable office space, especially in city centres;
- Improving the performance of the transport system – through better management or new investment – within places.

**3. Managing the costs of growth:** cities and large towns with already strong economies need less support when it comes to creating a vibrant business environment, but they must ensure that their places are accessible to those currently living in and around them and those who may benefit from moving to them.

In these places, policy attention should focus on:

- Reducing housing costs by building more homes
- Reducing congestion and tackling air pollution, for example by introducing a congestion charge in their centres

Crucially, it is the mix and breadth of interventions that will determine how successful policymakers will be in ensuring each place will be able to thrive. Focusing on some interventions only might not deliver the desired results. Investment in skills alone might improve outcomes for individuals but not for places, as people will not be able to find jobs suitable for their newly-acquired skills in their local area and may be forced to move.

Conversely, focusing on the business environment alone without improving the skills available to prospective businesses will likely undermine efforts to attract higher-skilled firms to the place.

The interlinked nature of interventions will need **a coordinated approach from national and local government**. For this reason, central government efforts to 'level up' should be coordinated by either the Treasury or the Cabinet Office. Locally, mayoral combined authorities provide the vehicle to pull these activities together, and should be rolled out across city regions that do not currently have them.

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## About Centre for Cities

Centre for Cities is a research and policy institute, dedicated to improving the economic success of UK cities.

We are a charity that works with cities, business and Whitehall to develop and implement policy that supports the performance of urban economies. We do this through impartial research and knowledge exchange.

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## Partnerships

Centre for Cities is always keen to work in partnership with like-minded organisations who share our commitment to helping cities to thrive, and supporting policy makers to achieve that aim.

As a registered charity (no. 1119841) we rely on external support to deliver our programme of quality research and events.

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## Why big cities are crucial to 'levelling up'

The underperformance of big cities is at the heart of the North-South divide. If the Government is to 'level up' the economy then it needs to tackle this major economic problem.

A head-scratching problem amongst urban economists in the UK is that, **unlike many other developed economies, UK cities do not become more productive as they get bigger.**<sup>1</sup> As Figure 1 shows, in Germany, France, and the United States, there is a positive relationship between city size and productivity, as measured by GDP per worker. Box 1 explains why this is the case.<sup>2</sup> This relationship does not hold in the UK. A number of small cities, such as Slough and Swindon, are more productive than expected and, with the clear exception of London, most large cities are less productive.

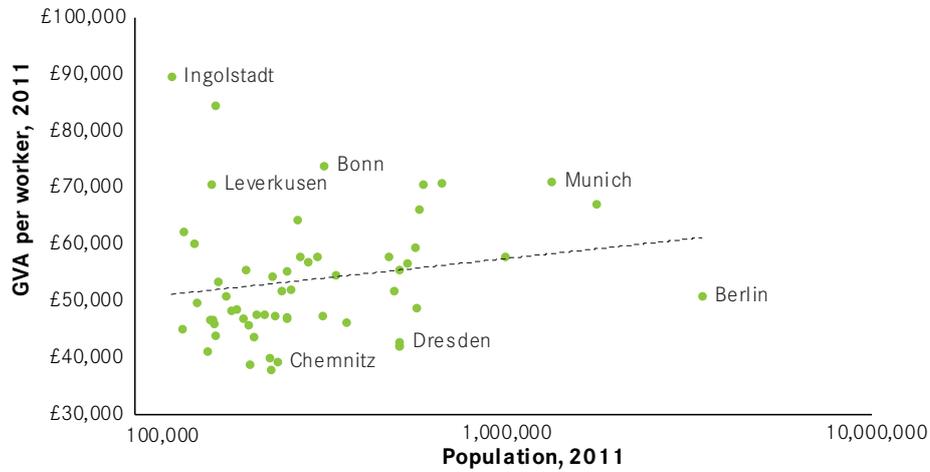
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1 Measured in terms of output per job, as is done in much of the literature on this issue. When measuring productivity as total factor productivity, research for the Manchester Independent Economic Review found that on this measure productivity did increase with city size in Britain. See Overman H, Gibbons S and Tucci A (2009), *The Case for Agglomeration Economies*, Manchester: MIER

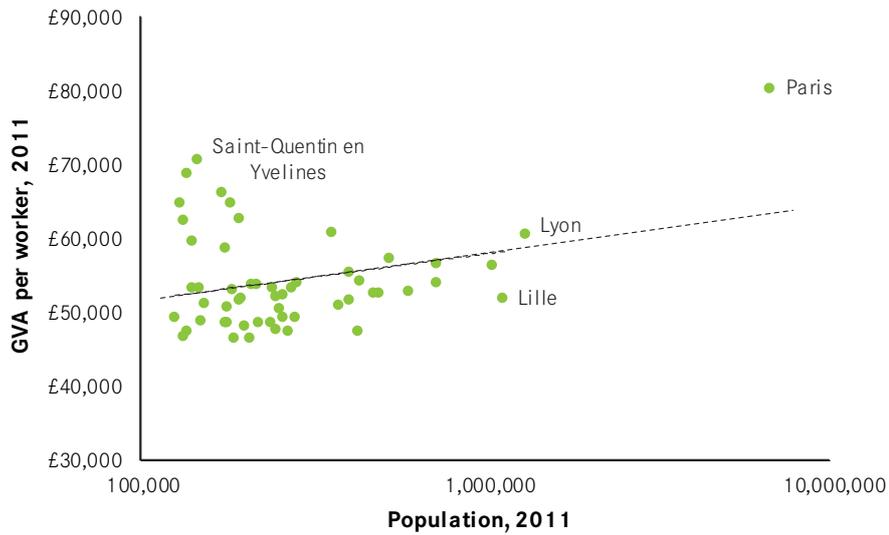
2 French and German cities are defined using Eurostat's Urban Audit definition. US cities are defined as Metropolitan Statistical Areas, following the approach used by the Brookings Institution. All cities are sized 125,000 people or greater.

**Figure 1: City size and productivity in selected countries**

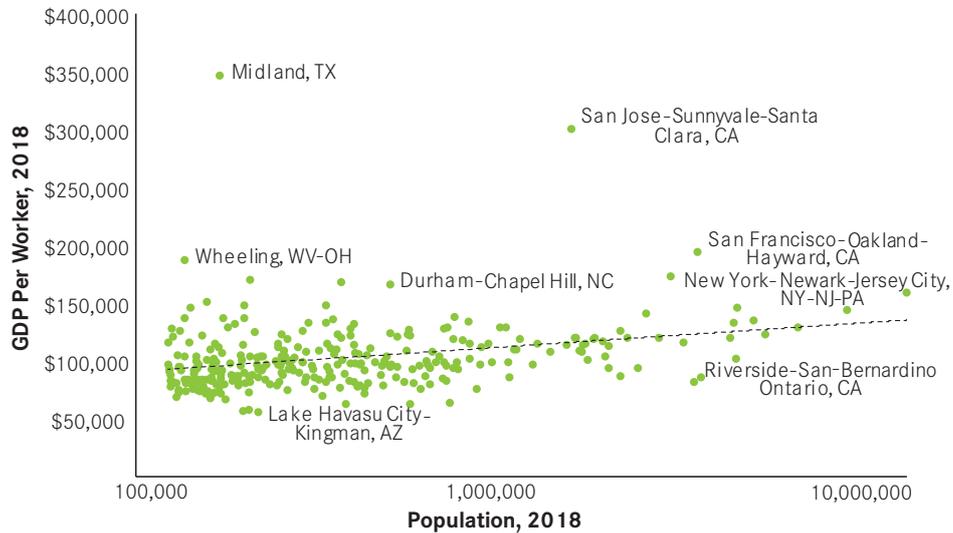
**Germany**

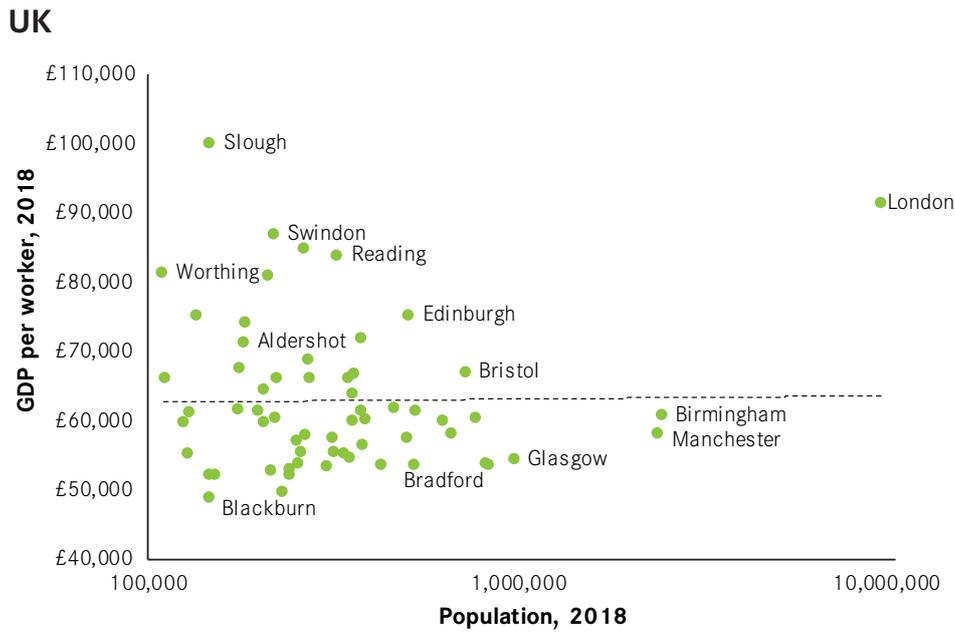


**France**



**United States**





Source: ONS, Mid-year population estimates; ONS, Regional gross domestic product (GDP) reference tables; Centre for Cities, Competing with the Continent Data tool; BEA, Gross Domestic Product; BLS, Metropolitan Area Employment and Unemployment; <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

Note: Population is displayed as the natural logarithm. Observations for Puerto Rico are excluded.

### Box 1: The link between city size and productivity

Cities cluster people and businesses into one place. Their size gives them a number of inherent benefits:

- **Learning:** Access to knowledge, through either the creation or sharing of it through face-to-face interactions (known as ‘knowledge spillovers’)
- **Sharing:** Sharing of infrastructure (e.g. roads, broadband), inputs and supply chains
- **Matching:** Access to a pool of potential workers

There are a number of costs to being based in cities too, such as higher commercial space rents, congestion and pollution, which are not as large in non-urban locations. Where businesses locate in Britain depends on the trade-off they make between these benefits and costs.<sup>3</sup>

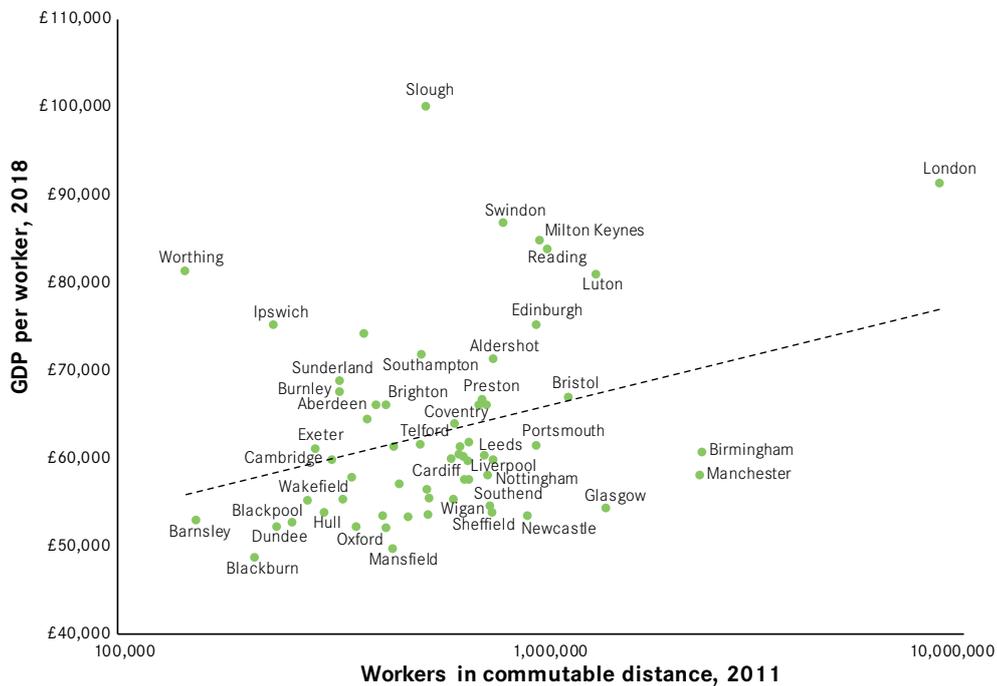
In principle, these benefits and costs increase with the size of a city, a process known as agglomeration, as larger cities give access to greater amounts of knowledge, spread the costs of shared infrastructure across a larger number of people and give businesses access to a deeper pool of workers, and workers access to a greater variety of jobs.

3 Swinney P (2017), Why don't we see growth across the country? London: Centre for Cities

Cities do not just draw on workers from within their boundaries – in 2011, 2.5 million people commuted into them for work. It is the access to this deep pool of workers who live in and around cities that is one of the benefits that cities offer to businesses (see Box 1).

Adjusting the size of the city to take account of people of working age in commutable distance, rather than just looking at the population of the city itself, the relationship between size and productivity changes (Box 2 sets out the definition of the surrounding area). As Figure 2 shows, using this definition of city size changes the relationship between scale and productivity in the UK to positive, which looks more like that seen in other developed countries.

**Figure 2: Productivity and adjusted city size**



Source: ONS, Regional gross domestic product (GDP) reference tables; ONS, Census 2011

**Box 2: Defining areas surrounding cities**

Surrounding areas are non-urban areas which are considered to fall within the travel-to-work area of cities. This varies from city to city and is determined by the average distance that a worker living outside of a city travels to get to their job in the city, calculated using data from the last Census. For example, the travel catchment for London is equal to 63km, but for Worthing it is equal to 20km.

More specifically, this adjustment addresses some of the 'overperformance' of a number of smaller cities in the Greater South East shown in Figure 1. It shows them to have labour markets more like medium-sized cities than small ones, and this will have an impact on the location decisions that a business makes.<sup>4</sup>

What this change in measurement does not address though is the underperformance of most of the UK's large cities. Cities such as Manchester, Birmingham and Glasgow remain at the bottom right of the chart, when they should be closer to London. They continue to have productivity levels well below what is expected of cities of their scale, and are not playing the role that cities such as Lyon, Munich and Cologne do.

**This is a real problem for the UK economy.** When viewed as a point on a chart or line in a table, all places are implicitly given equal weighting. But the sheer scale of big cities means that this is not the case. Their underperformance affects many more people than the underperformance of smaller places, and has much larger implications for the national economy.

Looking at how far underperforming cities sit below the trend line in Figure 2 illustrates this. The difference between the actual productivity of a city and what it would be if it sat on the line gives an estimate of the output gap resulting from its underperformance. On this rough measure, Glasgow has the largest gap (24 per cent), and is followed by Mansfield, Newcastle and Manchester.

### Figure 3: Cities with the largest estimated output gaps, 2018

	City	Output gap	GDP change (m)
1	Glasgow	-24%	£7,400
2	Mansfield	-24%	£1,200
3	Newcastle	-22%	£4,900
4	Manchester	-21%	£15,300
5	Sheffield	-20%	£3,900
6	Blackburn	-19%	£700
7	Newport	-18%	£1,100
8	Southend	-18%	£1,100
9	Bradford	-17%	£1,900
10	Doncaster	-16%	£1,100

Source: Centre for Cities calculations

So in percentage terms, Manchester's output gap is similar to Mansfield's, but in absolute terms they are very different. This is where scale becomes important.

<sup>4</sup> The cluster of high-performing small French cities in Figure 1 are mostly based around Paris, suggesting that a similar adjustment to measuring French cities would also help explain their 'over performance'.

If Mansfield were to close its output gap, the UK economy would be £1.2 billion larger, with the 448,000 people in commutable distance of Mansfield potentially benefiting from the higher wages and greater job opportunities that Mansfield would offer.

If Manchester closed this gap, the UK economy would be £15 billion larger, which would have positive implications for the 2.4 million people who live in commutable distance.

Looking at all cities below the line highlights this further. There are 31 small- and medium-sized cities<sup>5</sup> that sit below the line, such as Newport, Wakefield and Doncaster. If all of these cities closed their output gaps, the UK economy would be £22.5 billion larger. There are eight large cities that sit below the line. If this much smaller group of cities closed their output gaps, the UK economy would be £47.4 billion larger – equivalent to adding two extra economies the size of Newcastle to national output. Manchester, Birmingham and Glasgow account for 70 per cent of this gap. While illustrative, these numbers show the size of the prize of improving the performance of our largest cities.

The point of this is not to argue against investment in smaller places – there are many good reasons to do so. But it shows that focusing on smaller places alone, and ignoring the continued underperformance of large cities, will not deal with the Government's commitments to 'level up' different parts of the UK. And, as previous Centre for Cities work shows, the relationship between cities and towns means that it is not likely to deal with the issues that smaller places face either. Successful cities 'pull up' the performance of towns around them.<sup>6</sup>

### Box 3: The contribution of London

In Figure 2, London lies well above the trend line. Its actual productivity in 2018 was 16 per cent higher than this simple model would suggest based purely on its size. This equates to £85 billion, or 4 per cent of the national economy – the equivalent of four Newcastles. This shows the importance of continued investment in London, such as projects like Crossrail 2, to help it deal with the costs of its growth like congestion and unaffordable housing.

<sup>5</sup> Cities with daytime populations of under 550,000.

<sup>6</sup> Swinney P, McDonald R and Ramuni L (2017), Talk of the Town, London: Centre for Cities

## What explains this underperformance?

As Box 1 discusses, cities in principle offer a number of inherent benefits which increase with size. A number of British cities in general, and big cities in particular, are not offering these benefits to the extent that they should be. Namely, they are not offering businesses access to knowledge and talent.

While all large cities offer access to a large number of workers, **most do not offer great access to skilled workers**. In terms of the share of workers with a degree, Leeds is the only underperforming large city that has a share higher than the British average (it also has the smallest output gap). The same applies for workers with no formal qualifications, with Leeds being the only city to have a smaller share of people with no qualifications in its city or surrounding area.

Knowledge spillovers occur over very small distances, especially in dense city centres. A number of large cities have seen a resurgence in their city centres in recent years, attracting higher-skilled businesses to take advantage of the knowledge spillovers to which they give access. Despite this resurgence, their **city centres still play a small role in the overall economy**, and this resurgence needs to continue if the output gap is to close.

**An efficient public transport system is needed** to link people to jobs in cities, particularly those in city centres. Forthcoming work for Centre for Cities will show that the performance of the transport system is a particular issue in big cities, and complements work done by the Open Data Institute on the poor performance of the bus network in Birmingham.<sup>7</sup> For large cities to make the most of the workers they have living in and around them further investment in their transport systems is required.

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7 Transport for West Midlands (2017), West Midlands Travel Trends, Birmingham: Transport for West Midlands

## What needs to change

While there has been justified discussion on the struggles of so-called 'left behind' towns in recent months, it is the **underperformance of our big cities that affects the largest number of people and has the biggest drag on the national economy**. The UK is an anomaly in this respect. Without addressing this the Government will not be able to 'level up' the performance of different parts of the country.

The focus of policy must be to improve the benefits that big cities in particular offer to businesses. They must offer more attractive spaces to do business, particularly in their city centres, offer access to a large pool of skilled potential workers, and connect these workers to jobs through a well-functioning transport system.

So here is what needs to change:

- 1. Focus on the city-centre economy** of big cities in particular, ensuring there is sufficient commercial space for business.
- 2. Prioritise the improvement of skills of residents**, with particular focus on improving maths and English skills for those workers lacking them, and improving school performance for the next generation.
- 3. Improve the performance of the public transport network** within and around the cities, using bus franchising powers where available, creating Transport for London-style bodies and investing in new infrastructure where needed.
- 4. Extend mayoral devolution deals** to cover big cities that currently do not have them, and extend the powers of existing mayors to at least match the powers of the Mayor of London.
- 5. Negotiate multi-year 'single pot' budgets** with mayors, giving them full control about how this money is spent in their area and the ability to plan over a number of years.

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## About Centre for Cities

Our mission is to help the UK's largest cities and towns realise their economic potential.

We produce rigorous, data-driven research and policy ideas to help cities, large towns and Government address the challenges and opportunities they face – from boosting productivity and wages to preparing for Brexit and the changing world of work.

We also work closely with urban leaders, Whitehall and business to ensure our work is relevant, accessible and of practical use to cities, large towns and policy makers.

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