Building the Northern Powerhouse

Lessons from the Rhine-Ruhr and Randstad

Paul Swinney

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About the author

Paul Swinney is Principal Economist at Centre for Cities

p.swinney@centreforcities.org / 020 7803 4305

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Executive Summary

The idea at the heart of the Northern Powerhouse is to increase the scale of the North of England, better linking cities together through transport improvements to create one single economy. This approach has been inspired by the Randstad and the Rhine-Ruhr, two areas on the continent that, like the North of England, have a number of cities located close together.

Both the Randstad and Rhine-Ruhr perform better than their respective national averages. But this success does not appear to be based on the strength of their transport links. Our research shows that commuting between city regions in the Randstad and Rhine-Ruhr is not significantly greater than across city regions in the North, nor are train links much quicker. There is no clear policy lesson for the Northern Powerhouse from the proximity of or the links between the cities in the two areas – they just happen to be close together.

Instead, the main lesson from these areas is that strong regional economies require strongly performing cities at their heart. This is because the benefits of a large economy are only achieved when combined with the concentration of economic activity in specific places, specifically cities. And this concentration particularly benefits more knowledge-based businesses, which not only tend to employ more highly skilled and better paid workers, but also create jobs in other sectors, such as retail and leisure. The Randstad and Rhine-Ruhr get more out of the economic activity they have by concentrating it in cities, and this pattern of economic activity makes both areas more productive than their respective national economies.

Like the Randstad and Rhine-Ruhr, the economy of the North of England is concentrated in its cities – northern cities account for 20 per cent of land in the North, but 70 per cent of jobs. But in contrast to the Randstad and Rhine-Ruhr, northern cities punch well below their weight in terms of their contribution to the national economy. It is this underperformance that primarily explains the underperformance of the North as a whole, rather than the weakness of intercity transport links.

This suggests that to improve the performance of the North, policy makers should use limited resources to prioritise supporting the growth of cities in the North. This will mean making decisions and choices that focus public investment in specific places rather than spreading it equally across the North of England.

To do this, policy needs to make the most of the two great advantages of cities – their ability to support the sharing of information and generation of new ideas, and their ability to give businesses access to many skilled workers. This will require them to do the following:

- **Increase the density of cities.** This will make it easier for people and organisations to share information and come up with new ideas. Policy should focus on expanding the supply of office space and associated amenities within city centres, and creating long-term spatial plans for city regions that make strategic choices about how land is used.
- **Manage the costs of density.** Increasing demand to live and work in particular places pushes up the cost of offices and housing and increases congestion. As the performance of the North's cities improves, policies like congestion charging will need to be considered.
- **Increase the size of the pool of skilled workers that businesses can choose from.** This means focusing on increasing the skills of workers as well as improving the public transport networks within city regions, particularly through creating Transport for London style models with similar powers.
- **Make decisions about economic policy at the lowest level appropriate for those decisions to be efficient and well-informed.** Skills, city-region transport and spatial planning should be administered at the city-region level, and should be the responsibility of the forthcoming metro mayors. Pan-Northern institutions should only be created where there are significant benefits from working together that cannot be achieved either alone, or through partnerships between mayors for specific purposes.

There is a case for improving transport between cities in the North – connections between many northern cities are both slower and less frequent than a number of connections both between cities of the Randstad and Rhine-Ruhr and between London and its neighbours. Research, including by Centre for Cities, suggests there would be benefits from improving intercity transport links, particularly between Manchester and Leeds. But the allure of a *grand projet* should not divert attention from improving the places it is designed to link, particularly when it comes to transport within the city regions and skills across the North. The Northern Powerhouse and devolution deals offer an opportunity to do this and ensure that the North improves its productivity in the coming decades, rather than underperforming as it has in previous ones.

Introduction

The national economy is not spread evenly across the country - it is concentrated in cities. In Britain, cities account for 8.5 per cent of land, but 62 per cent of output.

Jobs cluster in specific places because of the benefits that density and proximity bring. These benefits increase the productivity of the jobs concerned – it is for this reason that British cities[1] are 14 per cent more productive than non-city areas. This phenomenon is called agglomeration.

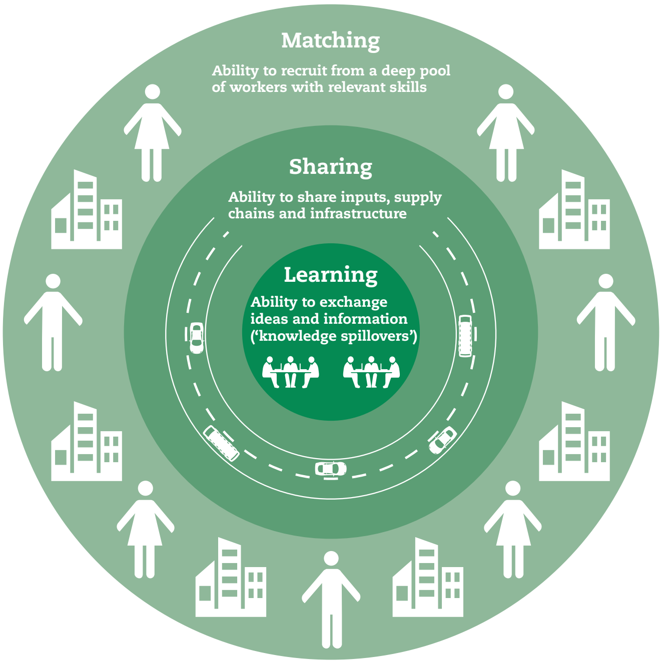
The benefits of agglomeration for businesses can be split into three main categories:[2]

- ***Matching* - the ability to recruit from a deep pool of workers with relevant skills**, giving businesses greater choice. Although this is likely to vary depending on geography, previous research suggests that this effect extends up to a drive time of 80 minutes from a British city, with the effect becoming weaker as distance from a city increases.[3]
- ***Learning* - the ability to exchange ideas and information, known as 'knowledge spillovers'**. These benefits tend to operate over very small geographies. For example, for the advertising industry in Manhattan it has been estimated that these knowledge spillovers operate over a distance of just over 750 metres,[4] while other research finds that these agglomeration effects are strongest over a distance of one mile.[5]
- ***Sharing* - the ability to share inputs, supply chains and infrastructure**, such as roads, rail and street lights. The distance that this operates over is likely to be somewhere between the estimates for the first two benefits.

And these benefits increase with scale – the more businesses there are to interact with, and the greater the choice of workers, the bigger the uplift on productivity that agglomeration has. While this principally has a positive impact on more 'knowledge-based' businesses,[6] such as media and software development, growth in these industries creates jobs in other areas of the economy too, such as the retail and leisure industries.[7]

1 Defined as Primary Urban Areas. See more at www.centreforcities.org/puas
2 Duranton G and Puga D (2004), Micro-foundations of urban agglomeration economies, National Bureau of Economic Research working paper 9931
3 Rice P, Venables AJ and Patacchini E (2006), Spatial Determinants of Productivity: Analysis for the Regions of Great Britain, Regional Science and Urban Economics 36 (6), 727-752. A recent study on the largest US cities suggests that agglomeration has an effect over a 60 minute drive time, with the majority of the gains concentrated in the first 20 minutes. See Melo P, Graham D, Levinson D and Aarabi S (2015) Agglomeration, accessibility and productivity: Evidence for large metropolitan areas in the US, Urban Studies (forthcoming)
4 Arzaghi M & Henderson J (2008) Networking Off Madison Avenue, Review of Economic Studies (October 2008), pp. 1011-1038
5 Rosenthal S & Strange W (2003) Geography, Industrial Organization, and Agglomeration, Review of Economics and Statistics (May 2003), pp. 377-393
6 Graham D (2007) Agglomeration Economies and Transport Investment, Journal of Transport Economics and Policy 41 (3)
7 Moretti E (2012), *The New Geography of Jobs*, Boston: Houghton Mifflin Harcourt

Figure 1: The benefits of agglomeration



Source: Centre for Cities

It is the principle of benefiting from scale that has driven the creation of the 'Northern Powerhouse' policy agenda. But even in the short time since the Chancellor announced the Northern Powerhouse idea, the focus of the initiative has been fluid. What started as an idea to link together the belt of cities from Liverpool to Hull has since broadened out to attempting to harness the scale of the whole of Northern England. The idea is that better connecting the North will increase its scale, creating one single economy across the North of England to rival other global cities. Policymakers have pointed to the Randstad in the Netherlands and the Rhine-Ruhr area of Germany as examples of where this already occurs (see Box 1).

Box 1: The Randstad and Rhine-Ruhr as inspiration

"A world class transport system must better link up the individual cities and towns in the North, to allow them to function as a single economy and be stronger than the sum of their parts."
Patrick McLoughlin and Sir Richard Leese, Foreword, The Northern Powerhouse: One Agenda, One Economy, One North, March 2015

"We can see how an efficient and effective transport system in the Northern European urban areas of the Randstad and the Rhine-Ruhr unite smaller cities into one economic area and increase overall performance."
The Northern Powerhouse: One Agenda, One Economy, One North, March 2015

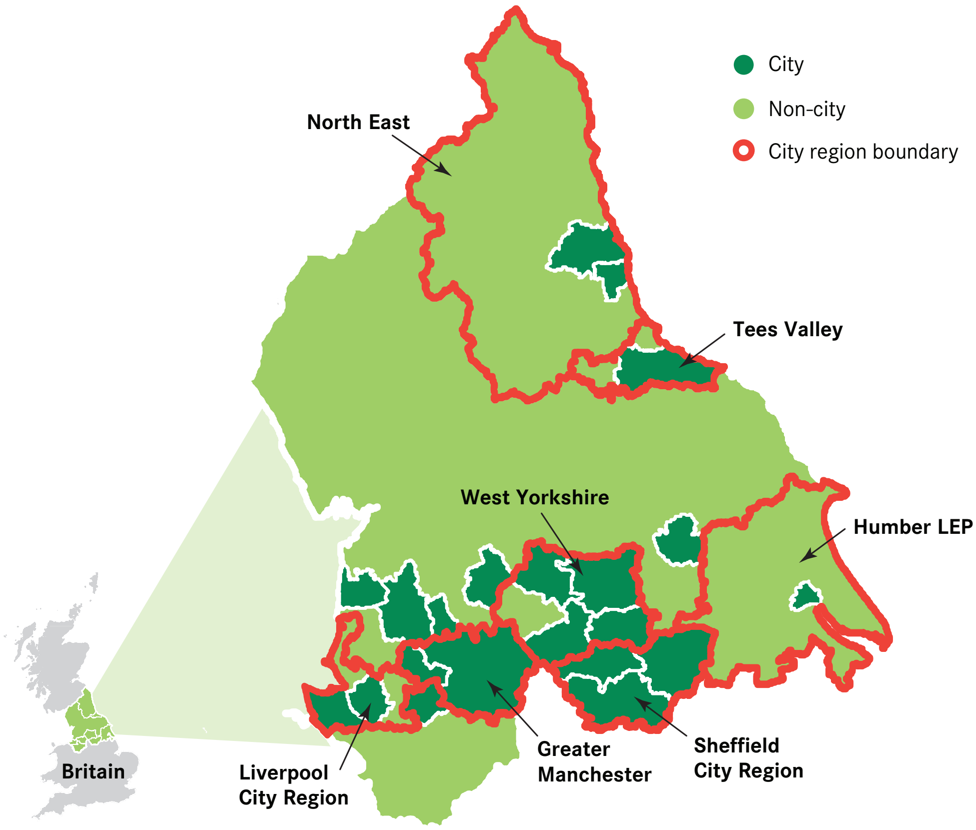
"Improved connectivity in the North will support growth in the North's Key Growth sectors and their high value jobs by bringing towns and cities across the North closer together – creating the agglomeration benefits of a much larger, single economy."
The Northern Transport Strategy: Spring 2016 Report

The purpose of this report is to see what the Northern Powerhouse can learn from the Randstad and Rhine-Ruhr areas. It presents five findings from our research on the Randstad and Rhine-Ruhr economies that set out how they perform, looking at the geography of jobs, commuting patterns by skill level, modes of commuting, the provision of transport and governance in the areas. These facts test the hypothesis that the Randstad and Rhine-Ruhr operate as one single economy.

Definitions of the Northern Powerhouse, Randstad and Rhine-Ruhr

In this report, the Northern Powerhouse, Randstad and Rhine-Ruhr areas are broken into three geographies – the region as a whole, and below this regional level, city regions and cities. They are defined as the following:

Northern Powerhouse



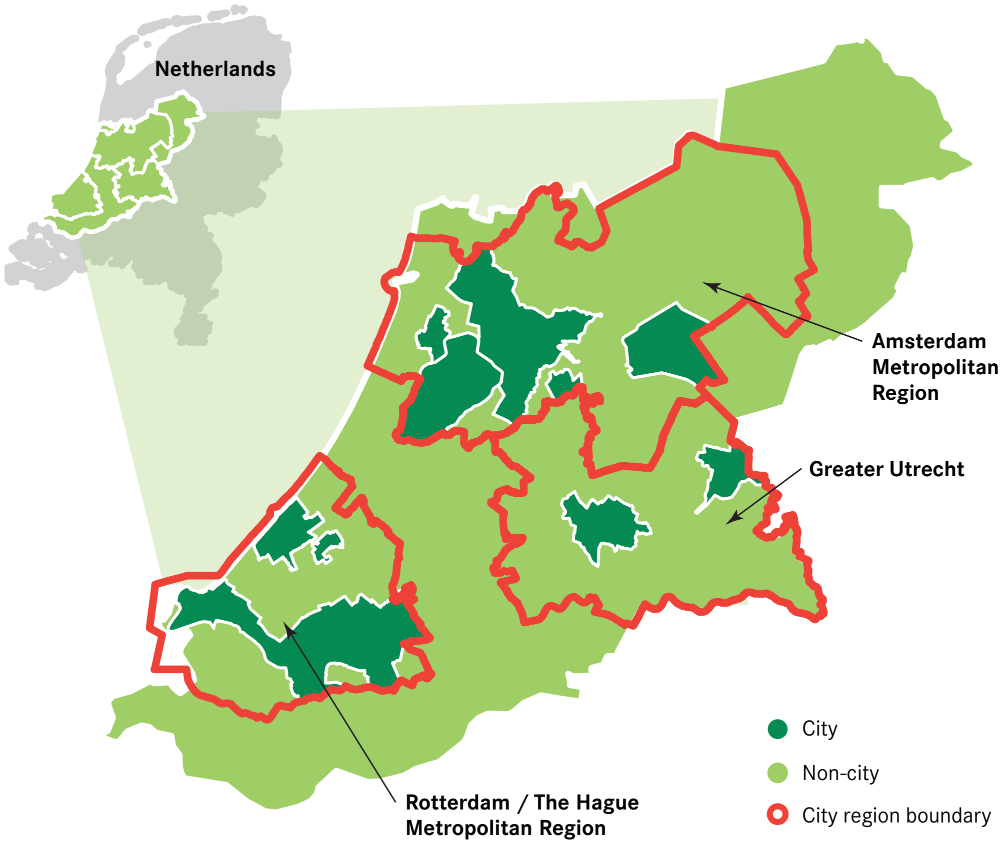
Total region: The regions of the North East, North West and Yorkshire and Humber, in line with the definition used by Transport for the North in last year's initial report on a Northern Transport Strategy.[8]

City regions: The combined authorities that have been formed (Greater Manchester, Liverpool City Region, North East, Sheffield City Region, Tees Valley and West Yorkshire), with the exception of Hull, where the Humber local enterprise partnership is used.

Cities: Primary Urban Areas, as used as standard in Centre for Cities' work.

8 Transport for the North (2015), The Northern Powerhouse: One Agenda, One Economy, One North, London: the Stationery Office

Randstad



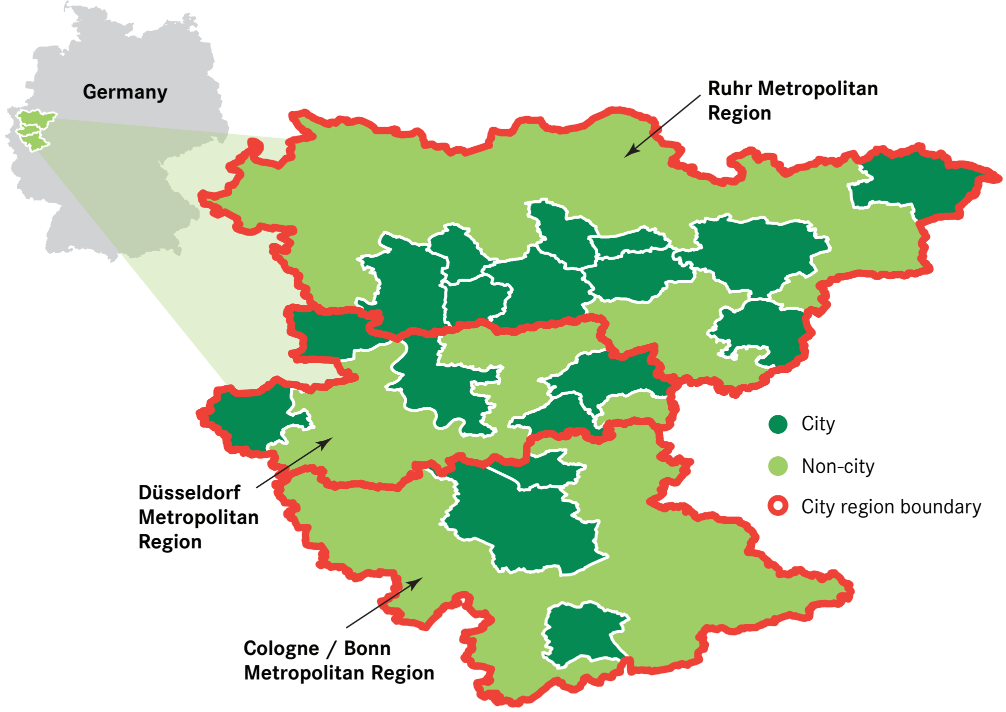
Total region: The NUTS3 areas of Utrecht, Flevoland, IJmond, Haarlem Agglomeration, Zaanstreek, Groot-Amsterdam, Het Gooi en Vechtstreek, The Hague Agglomeration, Delft en Westland, Leiden en Bollenstreek Agglomeration, Oost-Zuid-Holland, Groot-Rijnmond and Zuidoost-Zuid-Holland. This definition matches the one used in ESPON analysis,[9] but also includes the two NUTS3 areas that cover the 'green heart' of the Randstad in line with other research on the area.[10]

City regions: The city regions are defined according to the definitions for 'Metropolitan Region' in the Netherlands, except for Utrecht, where the NUTS3 area is used. For the purposes of this paper this is named Greater Utrecht.

Cities: Eurostat's Urban Audit, with a night-time population threshold of 125,000 used to make them comparable to the Primary Urban Area definition used for UK cities.

9 ESPON (2013), SGPTD Second Tier Cities and Territorial Development in Europe: Performance, Policies and Prospects, Luxembourg: Luxembourg
10 OCED (2007) OECD Territorial Reviews Randstad Holland, Netherlands, Paris: OECD

Rhine-Ruhr



Total region: The NUTS3 areas of Duisburg, Oberhausen, Bottrop, Mülheim an der Ruhr, Essen, Gelsenkirchen, Bochum, Dortmund, Hagen, Hamm, Herne, Wesel, Recklinghausen, Unna, Ennepe-Ruhr-Kreis, Köln, Bonn, Leverkusen, Rheinisch-Bergischer Kreis, Oberbergischer Kreis, Rhein-Erft-Kreis, Rhein-Sieg-Kreis, Düsseldorf, Rhein-Kreis Neuss, Mönchengladbach, Wuppertal, Mettmann, Remscheid, Solingen and Krefeld.

City regions: The Ruhr and Cologne-Bonn Metropolitan Regions are defined in line with the political groupings of the Ruhr Metropolis[11] and Cologne/Bonn region.[12] The Düsseldorf Metropolitan Region is defined as the authorities that aren't included in the other two regions.

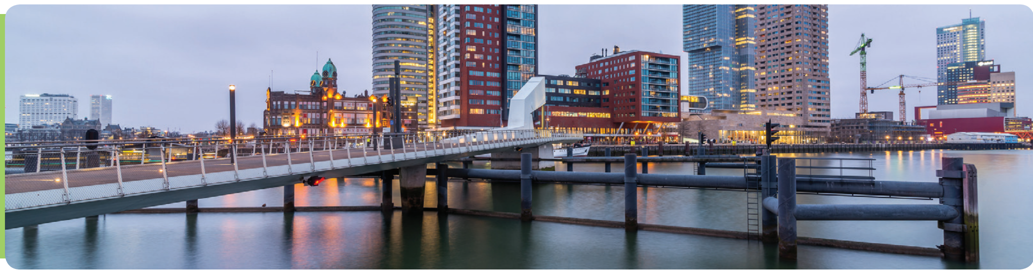
Cities: Eurostat's Urban Audit, with a night-time population threshold of 125,000 used to make them comparable to the primary urban are definition used for UK cities.

Figure 2: Size of the Northern Powerhouse, Randstad and Rhine-Ruhr

Area	Population (2015)	Jobs (2013)	GVA (2013)
Randstad	7,400,000	3,950,000	£246 billion
Rhine-Ruhr	10,900,000	5,550,000	£310 billion
Northern Powerhouse	15,200,000	5,780,000	£297 billion

Source: Eurostat; ONS, Business Register of Employment Survey. Note: GVA figures are in purchasing power standard (PPS) converted into £ to account for differences in the cost of living across the countries.

11 See http://www.metropoleruhr.de/
12 www.region-koeln-bonn.de



Five facts about the Randstad and Rhine-Ruhr, with comparison to the Northern Powerhouse

Fact 1: The Randstad and Rhine-Ruhr are more productive than the Northern Powerhouse, but economic activity is concentrated in specific places.

As a whole, the Randstad and Rhine-Ruhr areas lead their respective national economies, being more productive (measured using GVA per worker) than their countries as a whole. This is not the case in the Northern Powerhouse (see Figure 3), where productivity is 14 per cent lower than the national average. And at £45,000 in 2013, productivity in the North was below both the Randstad (£62,000) and Rhine-Ruhr (£56,000) areas.

So the stronger performance of the Randstad and Rhine-Ruhr suggests that there are lessons to be learned from the two areas that would benefit the Northern Powerhouse, as suggested in the various strategy documents and speeches on this policy initiative to date.

Figure 3: Productivity relative to the national average, 2013

Area	GVA per worker (2013)	Difference to national productivity
Northern Powerhouse	£ 45,000	-14.4 per cent
Randstad	£ 62,000	5.3 per cent
Rhine-Ruhr Area	£ 56,000	8.7 per cent

Source: Eurostat, ONS. Note: Figures are in purchasing power standard (PPS) converted into £ to account for differences in the cost of living across the countries.

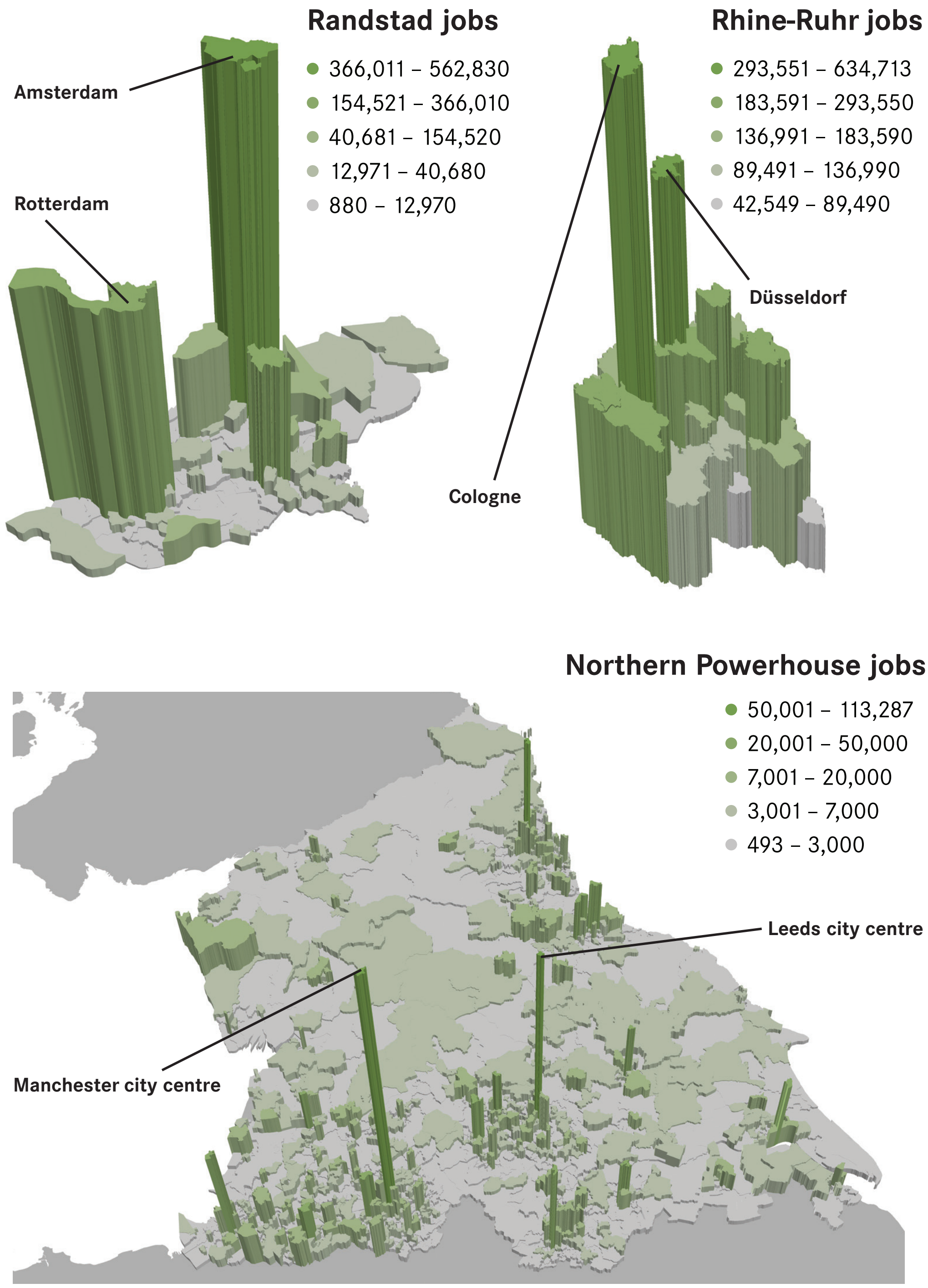
But this economic activity is not spread out throughout the two areas. As Figure 4 shows, in line with the theory of agglomeration, the economy is concentrated in specific places.

- In the Randstad, the economy is concentrated in the two largest cities of Amsterdam and Rotterdam. Despite accounting for just 10 per cent of land, these cities accounted for 34 per cent of all jobs in the area in 2014.[13] They were also the two most productive parts of the Randstad in 2013.[14]
- In the Rhine-Ruhr area, Cologne and Düsseldorf are by far the two largest cities. Accounting for just 6.8 per cent of land, they were home to 22 per cent of all of the Rhine-Ruhr's jobs in 2015. They were also two of the three most productive municipalities in the Rhine-Ruhr in 2013.

13 These jobs were concentrated in the core city authorities of Rotterdam and Amsterdam, which accounted for 7 per cent of land but 28 per cent of jobs.

14 Defined as the NUTS 3 areas of Greater Amsterdam and Greater Rotterdam.

Figure 4: The geography of jobs in the Northern Powerhouse, Randstad and Rhine-Ruhr areas



Source: Census 2011; Centraal Bureau voor de Statistiek; Statistik der Bundesagentur für Arbeit. Note: Data for the Randstad and Rhine-Ruhr is on a municipality basis, whereas data for the North of England is on a medium super output area (MSOA). Where the MSOA was not large enough to cover the entirety of a city centre, they have been merged with neighbouring MSOAs.

This is particularly the case for knowledge-based jobs. In the Rhine-Ruhr, Cologne and Düsseldorf accounted for 35 per cent of all private sector knowledge intensive business services (KIBS) jobs,[15] and 45 per cent of all financial services jobs (a subset of KIBS jobs). While data is not available to look at KIBS jobs at the local level in the Randstad, it does show that financial services are similarly concentrated – in 2014 the two largest cities accounted for 48 per cent of the Randstad's jobs in this sector.

15 Defined using 2 digit SIC codes, making the definition slightly broader than the standard one used by Centre for Cities.

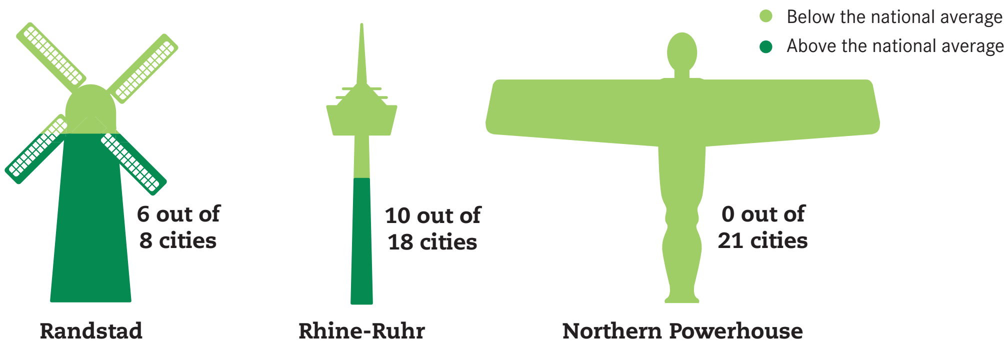
This is important for a number of reasons. Firstly, these jobs tend to be higher skilled and better paid. Secondly, advanced economies are likely to continue to specialise in these types of activities, and so will be an important source of jobs growth. And finally, research suggests that jobs created in these sectors create jobs in other sectors such as retail and leisure.[16]

Similar patterns are seen across the Northern Powerhouse. The two largest cities of Manchester and Leeds, despite accounting for 4.3 per cent of land in the North, account for 24 per cent of all jobs and 35 per cent of all private KIBS jobs. In total, the North's 21 cities account for only 20 per cent of land, but 70 per cent of jobs.

As Figure 4 shows, jobs are especially clustered in city centres. In 2015, 7.5 per cent of the North's private sector jobs were located in its five largest city centres,[17] despite them accounting for just 0.07 per cent of all land. And 17.3 per cent of all private sector KIBS jobs were located there.

But whereas the largest cities of the Randstad and Rhine-Ruhr are the most productive parts of their wider areas, the cities of the North are not. As Figure 5 shows, not one northern city has productivity above the UK average.

Figure 5: Productivity relative to the national average, 2011



Note: Dutch and German cities are defined using Eurostat's urban audit definition. English cities are Primary Urban Areas.
Source: Eurostat, ONS, Centre for Cities calculations.

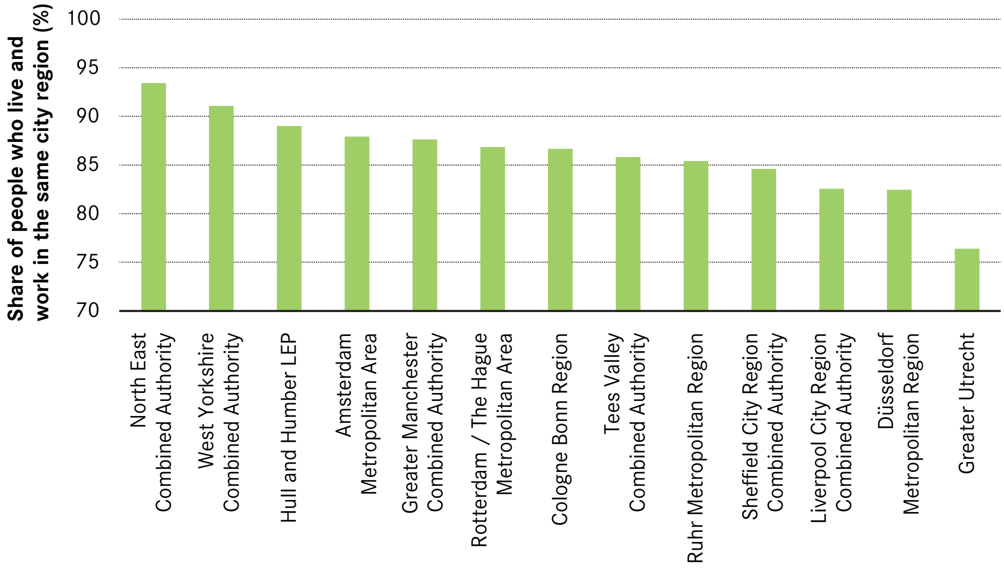
Fact 2: Commuting links show city regions to be distinct, rather than operating as part of a larger, single economy

An argument often put forward about both the Randstad and Rhine-Ruhr area is that their transport links allow people to live in one city but work in another, suggesting that there would be benefits for the North of England in strengthening transport links between cities. But the data suggests that people don't use the transport links in this way.

The share of people who both live and work within a particular city region is very similar across the three areas. As Figure 6 shows, 10 of the 13 city regions in the three areas have containment rates between 82 and 89 per cent. At 76 per cent, Utrecht is the only exception, mainly because of the large levels of commuting to the Amsterdam Metropolitan Area.[18]

16 Moretti E (2012), *The New Geography of Jobs*, Boston: Houghton Mifflin Harcourt
17 The city centres of Manchester, Leeds, Liverpool, Newcastle and Sheffield.
18 This echoes the findings in OCED (2007) OECD Territorial Reviews Randstad Holland, Netherlands, Paris: OECD

Figure 6: Containment in city regions



Source: Census 2011; Centraal Bureau voor de Statistiek; Landesdatenbank NRW. Data for England is 2011, data for Germany and the Netherlands is 2014.

This means that commuting links between city regions tend to be quite low:

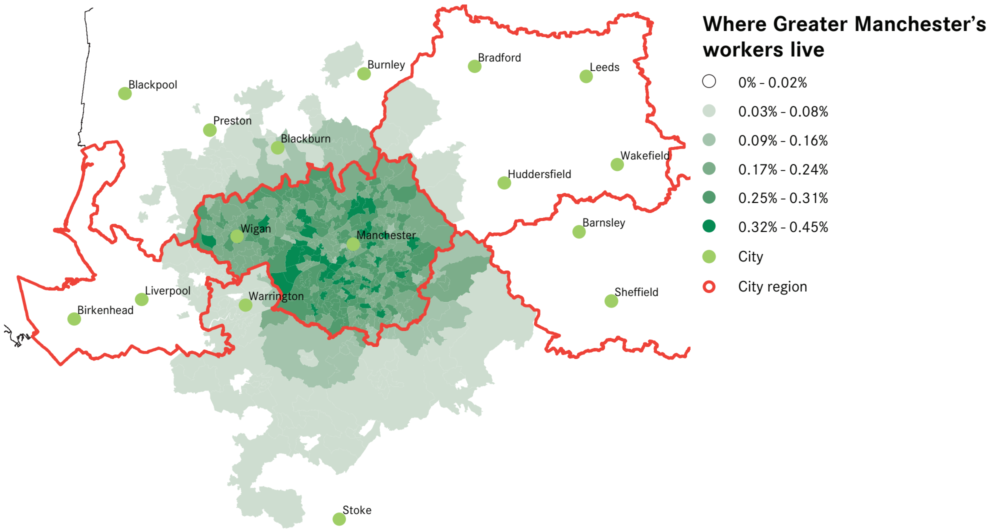
- In the Rhine-Ruhr, Düsseldorf, located between the two other city regions in the area, has the largest share of residents commuting to other city regions. But this equates to no more than 6 per cent of total working residents to each of the other two, and is not dissimilar to the 4 per cent of working residents in Liverpool City Region that commute to Greater Manchester each day, or the 5 per cent of Sheffield City Region's working residents that travel to the wider Leeds area[19] to work.
- Similar patterns are seen in the Randstad too. While 12 per cent of Utrecht's working residents travel to Amsterdam, this is very much the exception – the next highest flow is the 5 per cent of Amsterdam residents that work in Utrecht.

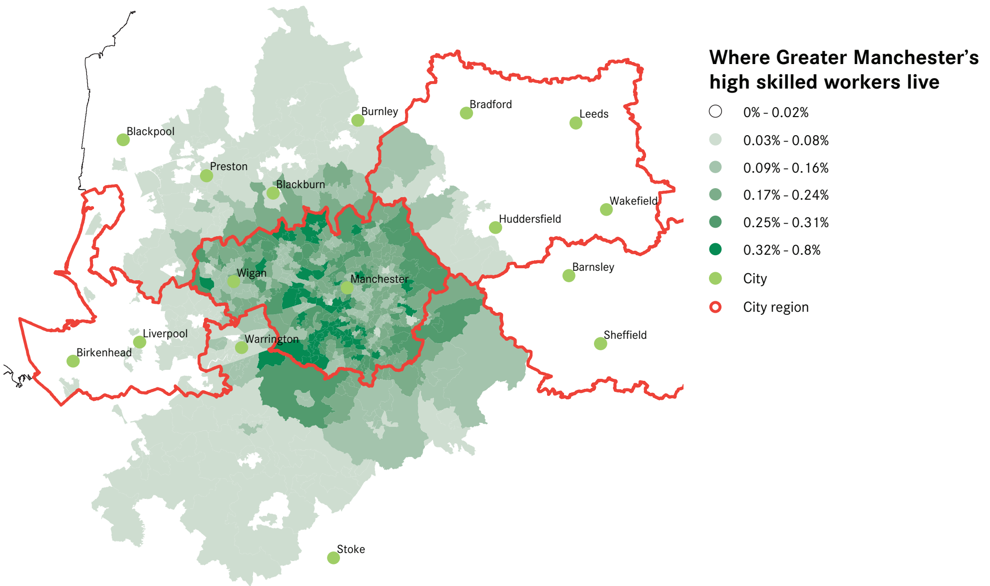
Highly skilled workers do tend to commute further.[20] But they tend to commute from the rural hinterlands of the cities they work in, rather than from other cities. Most city regions have stronger links between the central city and surrounding hinterland than with other city regions within the Northern Powerhouse. Figure 7 shows where Greater Manchester's workers live. The spread of those working in high-skill occupations stretches further into Lancashire to the north and Cheshire and the Peak District to the south than for all workers. But even given this greater spread, 78 per cent of these highly skilled workers still choose to live in Greater Manchester.

These patterns, evident across all three areas, appear to suggest that if a worker wants to live in a city, they will mostly choose to live in the city that they work within. Otherwise they will choose to live in the countryside surrounding the city they work in, rather than another city.

19 The West Yorkshire combined authority area.
20 Green A & Owen D (2006) The geography of poor skills and access to work, York: Joseph Rowntree Foundation; Groot S, Groot, H and Veneri P (2012) The Educational Bias in Commuting Patterns: Micro-Evidence for the Netherlands, Tinbergen Institute Discussion Paper

Figure 7: Commuting patterns of all and high-skill occupations into Greater Manchester



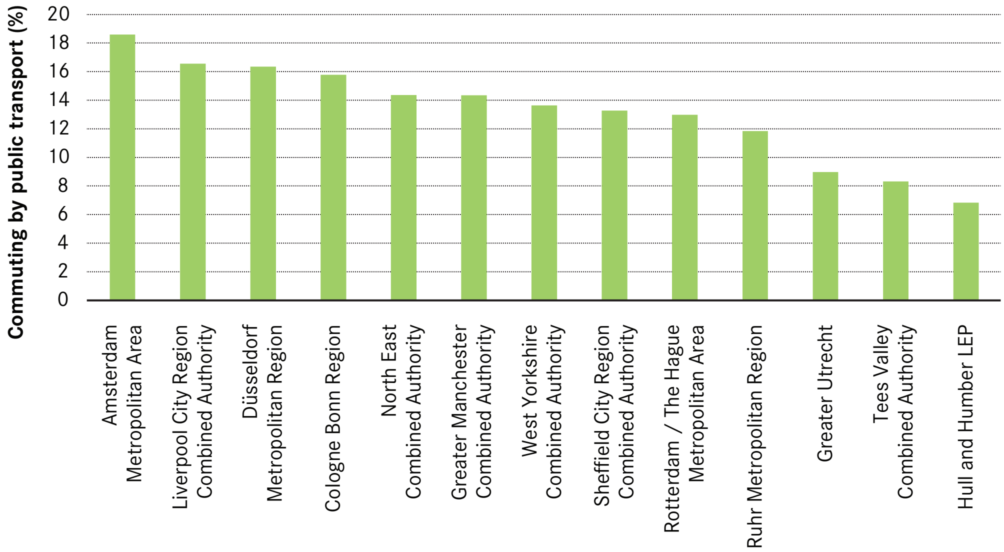


Source: Census 2011

Fact 3: Public transport usage is similar across the three areas, but the modes used are different

Public transport usage by commuters tends to be similar across the city regions too (see Figure 8). With the exception of the Tees Valley and Hull and Humber, a range of between 11 and 19 per cent of commuters across the city regions use public transport to work. The striking thing about these figures is not only that they are very similar, but they are also quite low. By comparison, 45 per cent of Londoners use public transport to get to work.

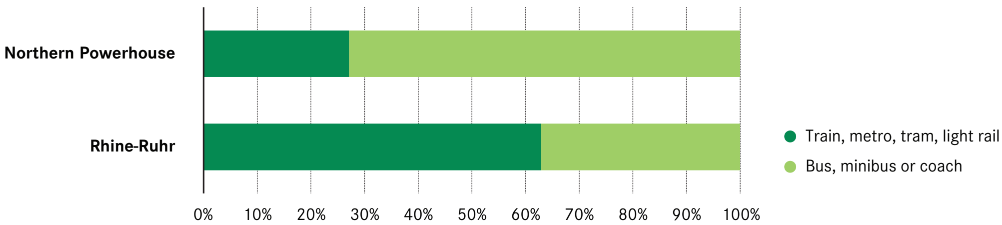
Figure 8: Residents commuting via public transport in city regions



Source: Census 2011; Centraal Bureau voor de Statistiek; Landesdatenbank NRW. Data is resident based. Data for England is 2011, data for Germany and the Netherlands is 2014. Dutch data was provided by Ate Poorthuis, Assistant Professor at the Singapore University of Technology and Design.

What is different is the mix of public transport used. Figure 9 shows that the share of commuters using the bus to commute in northern English city regions is much higher than in the Rhine-Ruhr area, where the use of metro and train services is more popular. A split between bus and tram usage is not given in the Dutch data, but trains alone account for over 40 per cent of all commutes by public transport in the Randstad.[21]

Figure 9: Resident commuting by mode of public transport in city regions



Source: Census 2011, Landesdatenbank NRW. English data is 2011, German data is 2012

Fact 4: It is frequency, rather than speed, that separates the rail networks

The speeds achieved by intercity rail connections between the cities of the Randstad and Rhine-Ruhr are not a great deal quicker than between cities in the Northern Powerhouse.

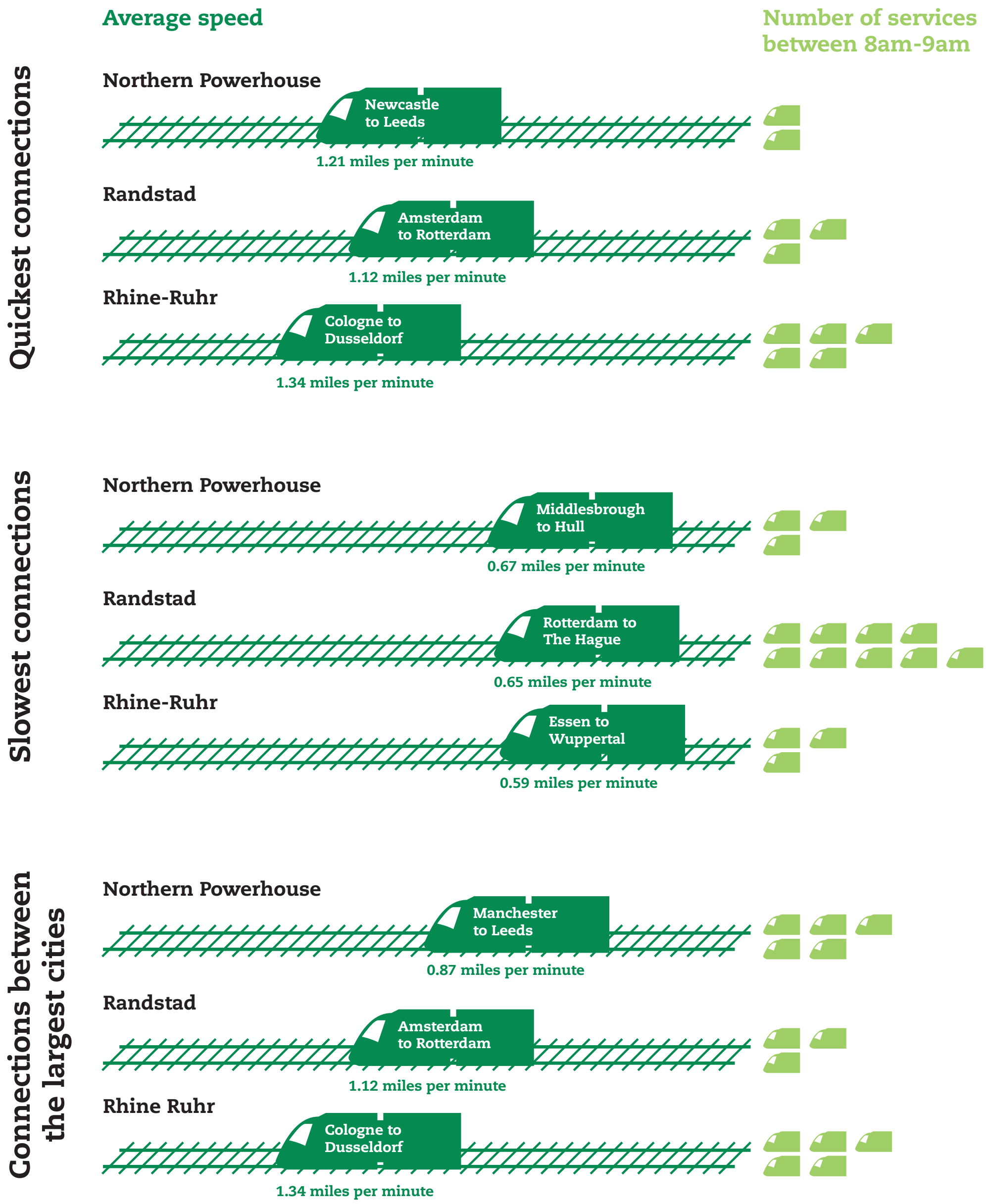
- With the exception of the Cologne-Düsseldorf-Duisburg link, speeds are not much quicker than connections across northern cities. And even the Cologne-Duisburg link is not as quick as connections into London from Reading and Milton Keynes.[22]

21 Defined as the provinces of North Holland, South Holland and Flevoland.
22 The fastest average speed on the Milton Keynes-London line between 8am and 9am is 1.66, and on the Reading-London line it is 1.5. Source: Network Rail; National Rail Inquiries

- Speeds in the Randstad also outperform links between northern English cities, but again not significantly. And the link between Rotterdam and the Hague is slower than any connection between the principal cities of city regions in the North of England.

Where there is a big difference is in frequency. As Figure 10 shows, there is a much higher number of services between the cities of the Randstad and Rhine-Ruhr than in the Northern Powerhouse. Despite this, commuting data above shows that this has not resulted in a larger share of commutes made by public transport, although it may help explain why trains are more popular than bus journeys.

Figure 10: Frequency and speed of services between cities



Source: Google; Network Rail. Data is for March 2016. The main city only in each city region has been included in the Northern Powerhouse data, while cities with populations over 300,000 have been used in the Randstad and Rhine-Ruhr. Trains that left before a later service but arrived later were discarded.

Fact 5: Neither the Randstad or Rhine-Ruhr have institutions that plan or manage activity or investment at this scale

Although both the Randstad and Rhine-Ruhr are frequently presented as 'mega cities' in Europe, there is no regional body in place that looks at economic development or inward investment across the two areas.

In the Randstad, responsibilities are split between provinces (of which there are four) and municipalities (of which there are 135); the former, for example, look after regional transport, while the latter look after economic development and education. Meanwhile local transport is the responsibility of separate local transport bodies.[23]

In the Rhine-Ruhr, sub-national governance falls between the federal State of North Rhine Westphalia (which is larger than the Rhine-Ruhr area), 30 districts and 110 municipalities.[24] The State has a wide number of responsibilities including education, while the districts have powers over planning, local transport and tax raising.[25]

Reflections

These five findings reveal two main characteristics about agglomeration in the Randstad and Rhine-Ruhr. Firstly, jobs are very concentrated in a few places rather than spread out across both areas. This appears to be particularly the case for more knowledge-based jobs that benefit from greater density and proximity. This suggests that knowledge spillovers play out over small areas in the cities of the Randstad and Rhine-Ruhr, as they do in other cities.

Secondly, both the Randstad and Rhine-Ruhr areas do not act as one labour market but as a number of them. This means that transport systems within city regions are more important for enabling businesses to access workers and workers to access jobs than transport links between cities.

The most significant implication of these findings is that the underperformance of northern cities is not chiefly down to poor transport links between them. The cities of the Randstad and Rhine-Ruhr happen to be close together, rather than operating as one economy, so do not provide a model for creating a unified economy across the North of England by improving transport links between them. Instead, the model of the Randstad and Rhine-Ruhr suggests that if the Northern Powerhouse is to be successful, then it must primarily focus on making its cities more attractive to business investment.

23 OCED (2007) OECD Territorial Reviews Randstad Holland, Netherlands, Paris: OECD
24 Districts that are Kreisefrei Stadts, of which there are 20, have no municipalities beneath them.
25 Source: http://germanlawarchive.iuscomp.org/?p=380#fn0, accessed 29th April 2016

To be successful, the Northern Powerhouse initiative must focus primarily on its cities and city regions

The economy of the North of England struggles principally because its cities and wider city regions punch below their weight. This is most clearly seen not by comparing the North to the Randstad or the Rhine-Ruhr, but by comparing it to the Greater South East of England.

There is a gulf in productivity between the non-urban areas of the Greater South East and the North - the former is 16 per cent more productive than the latter. But the real difference comes when comparing the cities of the two areas. Cities in the Greater South East are over 50 per cent more productive than their counterparts in the North. Their poor productivity performance suggests that, unlike those in the Greater South East, cities of the North don't appear to be reaping the benefits of agglomeration, and it is this that pulls down the performance of the North as a whole.

To improve their performance, the Northern Powerhouse initiative should focus on maximising the effect of agglomeration in its city regions. This means increasing the benefits – namely knowledge spillovers and the size of the pool of skilled workers – and reducing the negatives, such as congestion and the costs of commercial space.

The idea of the Northern Powerhouse was first conceived to provide a counterbalance to London in the UK economy. If policymakers want to improve the performance of northern cities, then there are many relevant lessons that can be learned from the place they are trying to counterbalance.

Increasing knowledge spillovers

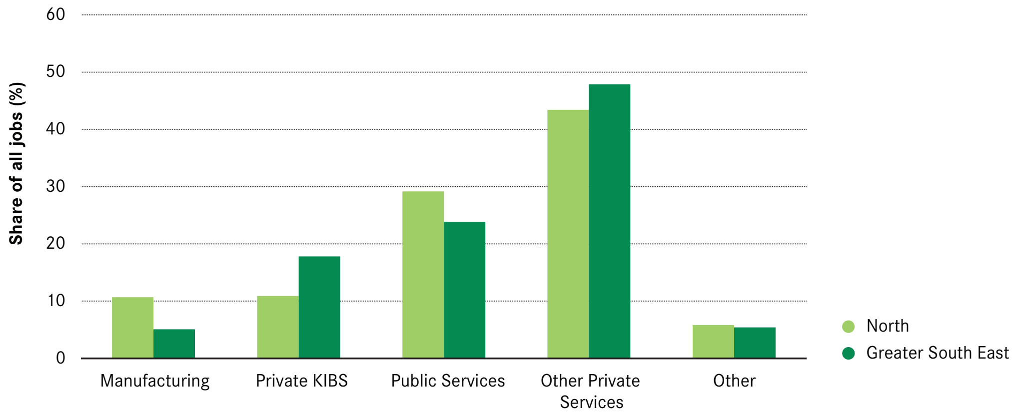
The UK economy is likely to continue to specialise in knowledge-based economic activity. This type of activity benefits from proximity and the knowledge spillovers this creates to a much greater extent than more routinised types of activities.[26] This explains why high-skilled, knowledge-based services sectors have increasingly located in large city centres in recent years, while lower skilled jobs tend to locate in out-of-town locations.[27]

As shown above, over 17 per cent of the North's KIBS jobs were located in its largest city centres in 2015, despite them accounting for just 0.07 per cent of land. But only Manchester city centre saw its growth of KIBS jobs between 1998 and 2015 outstrip growth in KIBS jobs in the North as a whole.

26 Graham D (2007) Agglomeration Economies and Transport Investment, Journal of Transport Economics and Policy 41 (3)
27 Swinney P and Sivaev D (2013), Beyond the High Street: Why Our City Centres Really Matter, London: Centre for Cities

This suggests two things. Firstly, because so much of it occurred outside of city centres, the nature of KIBS jobs growth in the North is likely to have been lower skilled (for example, back office functions for financial services). Secondly, the North's city centres are struggling to attract KIBS businesses, suggesting they need to improve access to knowledge. Given the preference for many of these businesses for a city-centre location, the result is that the North as a whole struggles to attract more knowledge-based services jobs, which is reflected in its industrial structure (see Figure 11).

Figure 11: Industrial structure of the North and Greater South East of England, 2014



Source: Nomis, Business Register of Employment Survey

How exactly knowledge spillovers are facilitated is unclear. What we do know is that they increase with density.[28] London has the highest density of private sector jobs in its centre of any British city, despite the cost of office space. This suggests that the knowledge spillovers that result from this concentration more than offset the high cost of commercial space there.

To encourage this density in the Northern Powerhouse, decisions will need to be made about how land is used both across city regions, and within city centres, with a focus on encouraging the expansion of attractive office space and associated amenities within city centres and encouraging greater density where appropriate. The focus of policies such as enterprise zones, for example, could switch to building office space in city centres, underpinned by wider, long-term spatial plans for city regions (as it is in London through the London Plan) that make strategic choices about how land is used.

In any long-term planning undertaken, anticipating the costs of success will also be important. Increasing demand to live and work in particular places pushes up the cost of offices and housing and increases congestion. This will mean that the supply of office space and housing will need to match increases in demand (the latter has not sufficiently happened in London), while the introduction of congestion charging, as has been in place in the capital and cities such as Stockholm, Milan and Singapore for some time, will need to be considered in the future as the performance of the North's cities improves.

28 Carilino G, Chattergee S & Hunt R (2006) Urban Density and the Rate of Invention, Working Paper 06-14 (Federal Reserve Bank of Philadelphia, 2006); Jaffe A, Trajtenberg M & Henderson R (1993) Geographic Localisation of Knowledge Spillovers as Evidenced by Patent Citations, Quarterly Journal of Economics, vol. CVIII, August, no. 3, pp577-598.

Expanding the pool of workers

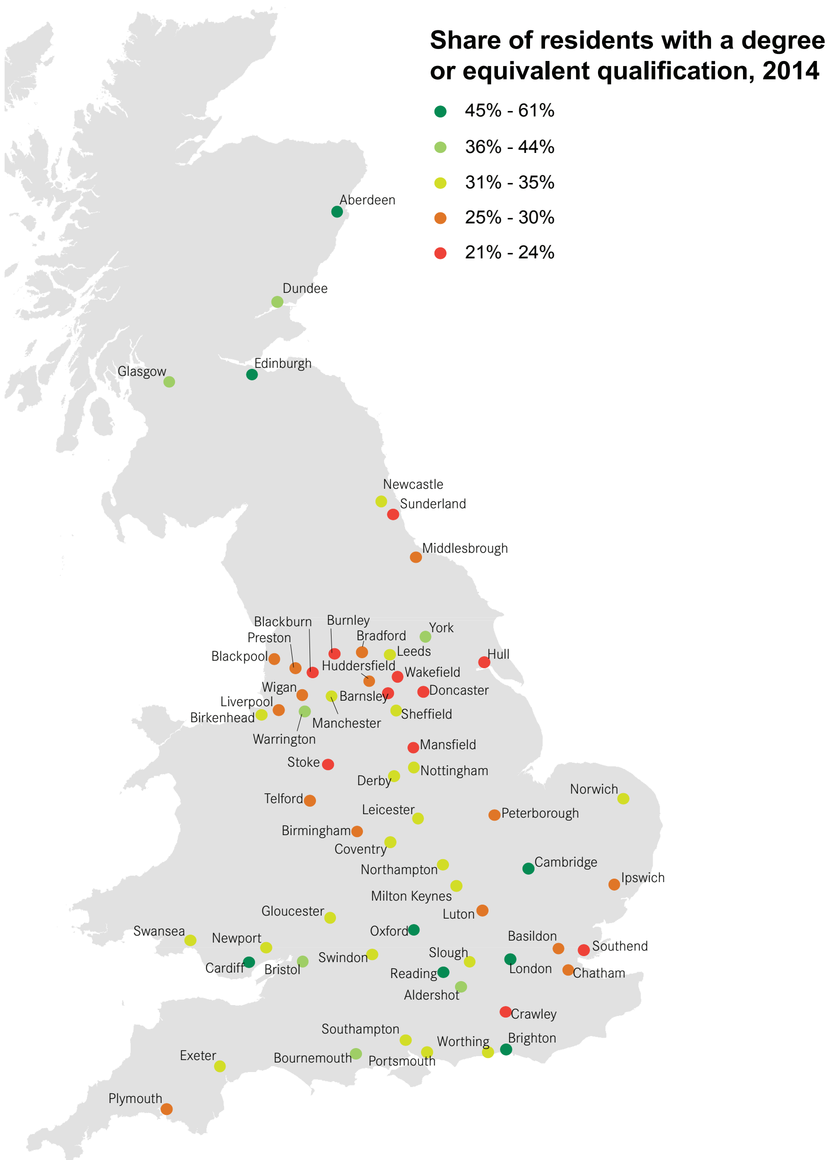
One of the key drivers of the location and investment decisions of businesses will be whether they can recruit the right workers. And so this makes policies that increase their availability crucial in making northern cities more attractive places to invest.

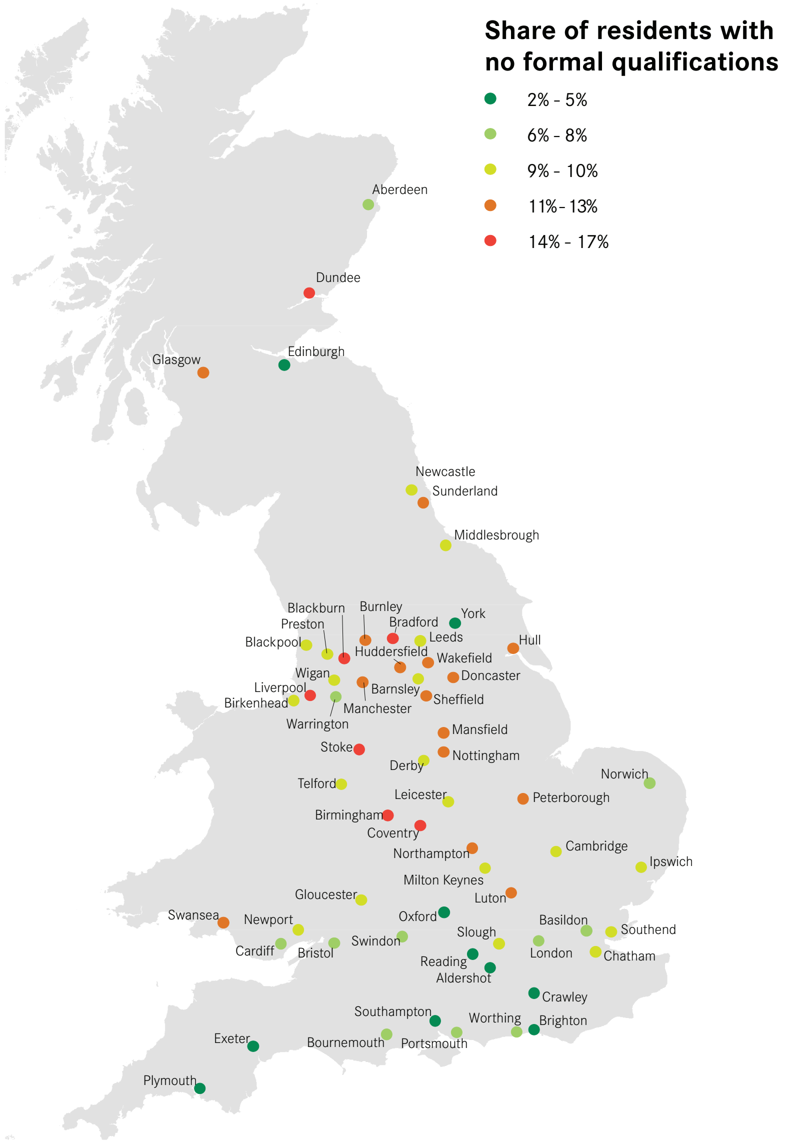
Expanding the pool of skilled workers will require two different policy interventions. The first is to increase the skills of residents in and around cities and city regions. And the second will be to develop public transport systems that better connect these people to jobs, particularly in city centres.

Skills

The North is hamstrung by its weak skills profile. York, Warrington and Leeds are the only three cities to appear in the top 20 for share of residents with a degree. And almost half of the 30 cities with the highest shares of residents with no formal qualifications are in the North (see Figure 12).

Figure 12: **Residents by qualification, 2014**





Source: NOMIS (2016), Annual Population Survey, resident analysis

Cities in the Greater South East in general, and London in particular, have much higher shares of highly qualified residents. Close to half of all the capital's residents hold a degree. And this is combined with scale - over 2 million degree holders lived within 18 km of central London in 2011, giving London-based businesses greater choice than those located in cities further north.[29]

The strong skills profile that London businesses benefit from has little to do with any London-specific policy, and is in part down to the migration of graduates from further north. Be that as it may, the weaker skills profiles of northern cities puts them at a disadvantage when attempting to attract high-skill businesses, and any policy attempting to improve the performance of northern cities will need to address this with the highest priority. Northern cities that have managed to secure a devolution deal will be given greater control over adult skills budgets. Tailoring the use of these budgets to address the specific skills needs that each city faces should be a main focus of mayors as they come into office.

29 Manchester had the next highest number of all British cities, but at just over 460,000 this was less than a quarter than in London. See Swinney P and Bidgood E (2014) Fast track to growth: Transport priorities for stronger cities, London: Centre for Cities

City-region transport

The coverage, performance and management of public transport in London is far superior to that seen in northern cities. This allowed the system, mostly managed by Transport for London (TfL), to carry over 2.25 million commuters to work in London every day in 2011.[30]

The TfL model has five key advantages over the transport models currently available elsewhere in Britain:[31]

1. Control over the provision of bus services, including the fare box and routes.
2. The ability to negotiate long-term funding settlements. This creates greater certainty and so encourages investment in the network.
3. Ability to raise funds for investment by borrowing against income streams from fares and from rents on commercial property on TfL-owned land.
4. A governance structure characterised by the single management of most public transport, allowing multi-modal coordination and smart ticketing to be more easily rolled out across them.
5. A transport strategy that is integrated with other policy areas across a city region through its co-ordination with the London Plan.

The Buses Bill, which is currently making its way through Parliament, will give other city regions outside of London with a mayor similar powers over the bus network if they choose to use them. Combining this power with the creation of TfL-style bodies will be a significant step in improving the provision and management of public transport in their areas.

Implications for intercity connections

There is a case for improving transport between cities in the North. As previous research by Centre for Cities has shown,[32] the speed of the Manchester to Leeds line, especially relative to speeds of lines linking London to surrounding cities, suggests that an upgrade is needed. But the allure of a *grand projet* should not divert attention from the need to improve the places it is designed to link, particularly when it comes to transport within the city regions and skills across the North.

Improving city-to-city links is likely to be important from the view of connecting businesses – the Eddington Transport Review suggested that reducing travel times could increase productivity between 0.4 to 1.1 per cent[33] – but any upgrade is unlikely to have much impact on commuting, as has been claimed to date.[34] Longer commutes impose a cost on workers, both in terms of time and money. This is traded off against the size of a house, its cost and the value attached to its surroundings. Box 3 shows how this trade-off is much greater for London, helping to explain why average commuting distances to the capital are so much longer.

30 Census 2011
31 Wilcox Z, Nohrova N and Bidgood E (2014) Delivering change: Making transport work for cities, London: Centre for Cities
32 Swinney P and Bidgood E (2014) Fast track to growth: Transport priorities for stronger cities, London: Centre for Cities
33 Eddington R (2006) The Eddington Transport Study, The Case for Action: Sir Rod Eddington's advice to government, London: the Stationery Office
34 For example, see Transport for the North (2016) The Northern Transport Strategy: Spring 2016 Report, London: the Stationery Office

Box 3: The trade-off of housing costs and commuting time in and around London and Manchester

London has the furthest reach of any English or Welsh city – on average, London workers who live outside the capital commute 62 km to their job. For Manchester it's 38km, while in Leeds it's 32 km.[35]

There are three main reasons for this. Firstly, on the supply side, London has a much more extensive transport network than Manchester. There are many more train routes radiating out of the capital than out of Manchester city centre.[36]

Secondly, on the demand side, differences in wages are much greater between London and its hinterland than Manchester and its surroundings. On average, wages in Manchester are 8 per cent higher than its surrounding area. In London this differential is 28 per cent. And it is even greater when looking at Inner London – average wages are 51 per cent higher in Inner London than in the capital's hinterland. This clearly increases the incentive for workers to travel longer distances into London.

Thirdly, also on the demand side, is the large difference in the cost of housing between the respective cities and their hinterlands. Figure 13 shows that the gradient of the cost housing per square foot is both lower overall and drops off much more quickly in Manchester than it does in London. The result is that the trade-off between commuting time and housing costs is much less acute in Manchester, meaning people aren't forced to live so far away from the centre of the city, and so commuting distances are shorter.

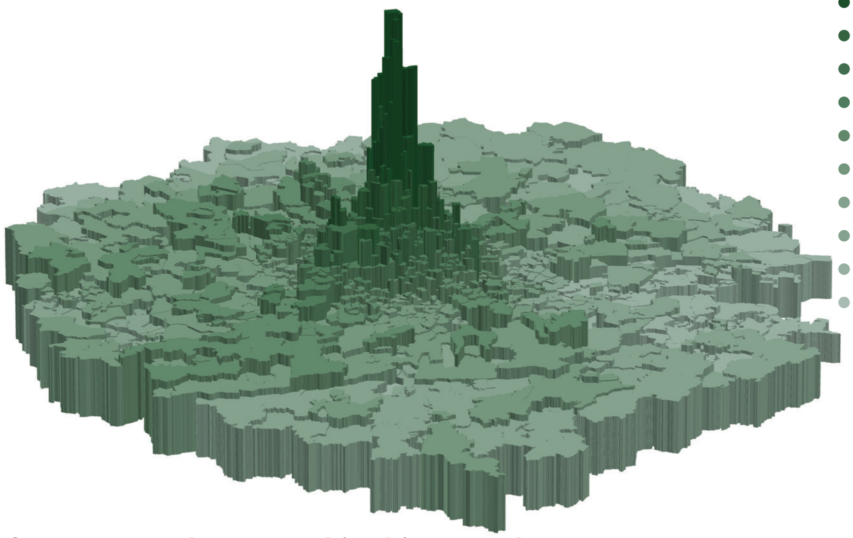
One of the benefits that has been raised of living in a larger city like London is the ease at which professional couples can both find a job. It has been argued that an improved rail line between Leeds and Manchester could bring similar benefits, with the combined scale of the two cities increasing the likelihood that both people could find a job.

There is logic to this argument. But living between the two cities and commuting by train to either is already an option. The train from Huddersfield takes 30 minutes to go to both Manchester and to Leeds. Of the working residents living in the west of Kirklees local authority (the east is served by Dewsbury station, which is much closer to Leeds), around 1,500 commuted into Leeds by train, and 400 went to Manchester in 2011. This would mean that a maximum of 400 couples commuted in opposite directions by train, and the reality is that this number is likely to have been much lower.

35 Source: Census 2011, Centre for Cities calculations
36 Swinney P and Bidgood E (2014) Fast track to growth: Transport priorities for stronger cities, London: Centre for Cities

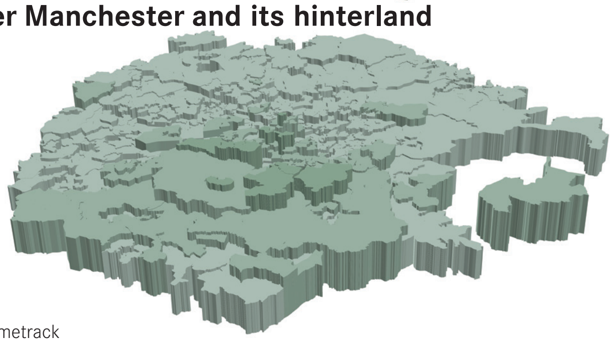
Figure 13: Median house prices per square foot in and around London and Manchester, 2015 (£)

Greater London and its hinterland



- 1,322 – 1,859
- 958 – 1,321
- 724 – 957
- 567 – 723
- 454 – 566
- 374 – 453
- 311 – 373
- 248 – 310
- 167 – 247
- 50 – 166

Greater Manchester and its hinterland



- 248 – 296
- 167 – 247
- 50 – 166

Source: Hometrack

Governance

Our research shows that the North is comprised of many economies, rather than one single economy. Decisions about economic policy should be taken at the lowest level appropriate for those decisions to be efficient and well informed. This means that skills, strategic transport and spatial planning should be taken at the city-region level, and should be the responsibility of the forthcoming metro mayors. It also means that the success of the devolution deals that Government has already struck will be crucial to the success of the Northern Powerhouse initiative, as will securing separate deals in Leeds and Hull, which don't currently have one.

Because intracity transport by definition operates across city regions, decisions about what this should look like quite rightly fall into the remit of the newly created Transport for the North. But the pan-Northern institutions should focus resources on matters where there are significant benefits from working together that cannot be achieved either alone, or through partnerships between mayors for specific purposes. For the North as a whole to be successful, it is important to ensure a strong focus on making the most of the component city regions, and working across boundaries with limited resources only where that adds significant value.

Conclusion

Unlike the cities of the Randstad and Rhine-Ruhr and those of the Greater South East of England, the cities of the North of England do not harness the benefits of agglomeration. The result is that they punch well below their weight, which acts as a drag on the economic performance of the North as a whole.

This means that if the Northern Powerhouse initiative is to improve the performance of the North of England, it must focus on improving the performance of its cities and city regions. This should principally be done through increasing the density of businesses in city centres, improving the skills of residents and improving transport links within city regions.

Much focus to date has been given to improving rail links between cities. Bringing cities closer together is likely to be important, but the positive impacts of doing this will only be realised if the cities themselves have strong economies. The allure of a grand projet should not divert attention from improving the places it is designed to link, particularly when it comes to transport within the city regions and skills across the North.

Both the Northern Powerhouse and devolution deals offer an opportunity to improve the performance of northern cities, making them the engines not just of the northern but the national economy once again. Doing this will ensure that the North improves its productivity in the coming decades, rather than underperforming as it has in previous ones.

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Centre for Cities
Second Floor
9 Holyrood Street
London SE1 2EL

020 7803 4300
info@centreforcities.org
www.centreforcities.org

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