

City Relationships: Economic linkages in Northern city regions

November 2009

Moving Forward:
The Northern Way



This Research Programme was delivered by The Work Foundation, Centre for Cities and SURF at Salford University, working with The Northern Way and the Department of Communities and Local Government who commissioned and sponsored the work.

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Foreword

Will Hutton,
Executive Vice Chair,
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Preparation for economic recovery must start now. As the UK starts to emerge from the longest recession since records began, investing now in the people, places and businesses that will drive future economic growth will pay dividends in the medium and longer term

Economic growth has always been unevenly distributed between different places. It was economic centres such as Leeds and Manchester, as well as Liverpool, Sheffield and Newcastle, which saw the largest rises in productivity in the North of England over the last 15 years. And, looking to a future in which urban-centric knowledge intensive industries are the most likely sources of future employment growth, these centres look set to continue to be vital sources of productivity and jobs.

Yet it is a mistake to look at these cities in isolation. In a country as small as the UK, there is no place that is untouched by its neighbours. Every local area's economy is shaped by links with neighbouring areas, whether through commuting patterns or supply chains. And when these economic relationships between places are taken into account, it becomes increasingly clear that growth in economic centres such as Leeds and Manchester would not have been possible without access to their neighbouring areas. It is proximity to a large pool of consumers and skilled workers, as well as opportunities to exchange ideas, which makes these cities such attractive location prospects for industries (especially knowledge intensive industries) in the first place.

What makes this City Relationships work so useful is that it goes beyond simply recognising that these relationships exist and are important to economic growth. It makes a significant contribution to understanding what drives and enables growth in different places – and how places can link together to increase economic growth further. It demonstrates clearly that parochialism is the enemy of prosperity. This makes the study of City Relationships in the North of England both timely and compelling.

The team have developed a framework for understanding how economic relationships vary between places: whether they are dependent, interdependent, independent or isolated.

The power of this approach is in its application: the 'wheels' for each of the five northern city region case studies provide valuable insights into how city regions inter-relate now. The accompanying case study reports also set out where there is potential for neighbouring areas to benefit more from their existing relationships in the future and highlight the opportunities to enhance economic growth of the city region as a whole.

The North has a big opportunity to help the UK rebalance its economy after the current crisis, which was driven from the financial sector. The northern city regions have a big part to play in enabling the UK to move beyond this. Enabling places to understand their role within the city region is vital to developing efficient and effective economic development and regeneration strategies for the future.

At a time when public finances are increasingly constrained, city region strategies make both economic and political sense. It is only by working together to grow together that cities and towns in the North can make the most of their distinctive assets and seize the opportunities created by economic recovery.

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Executive Summary

- At a time when the public policy environment is focused on recovery from the current recession, identifying how to promote higher levels of sustainable economic growth over the longer term in the North of England is vital. To contribute to this understanding, the City Relationships research programme aimed to test a hypothesis that stronger and more complementary economic relationships between towns and cities in the North of England would generate higher levels of sustainable economic growth and development.
- This report summarises the findings and policy conclusions from the research. The programme analysed the economic relationships between the five most significant economic centres in the North – Leeds, Liverpool, Manchester, Newcastle and Sheffield – and selected cities and towns nearby. The analysis looked in particular at labour market linkages and the connections between businesses, considering barriers to more complementary economic relationships and what public policy might do to foster them. The report is supported by five detailed city region reports, data annexes and a methodology paper.

Headline findings

- The economies of local areas are shaped by their economic relationships with other areas – the connections and flows of people to and from home, work and leisure, as well as firm relationships and supply chains. Strengthening the economic links between places has the potential to contribute to sustainable economic growth, higher individual prosperity, the attraction and retention of higher skilled workers and the reduction of deprivation. Particular benefits are associated with building links between economic centres, which contain higher levels of employment and more diverse firms, and surrounding town and cities.
- Some places have more complementary – or mutually beneficial - economic relationships than others. The extent to which relationships are complementary is affected by a range of factors. Skills is the most important factor. Others include: transport, links between firms in sectors that are embedded within a city region, the ‘pull’ of the economic centre, industrial history and quality of place. Barriers to more complementary relationships include under-developed governance arrangements and poor public perceptions of a place.
- Labour market links are a stronger indicator of relationships between places than firm links. Many firms have national or international supply chains and their primary interaction with the local area is through the labour market. This varies for different sectors, however, with some sectors, such as maritime, having a stronger local economic geography than others. City regions can use the framework developed by Duranton and Puga to assess where there is potential for firm links to enhance economic relationships between places.
- Different places have different roles within a city region depending on these factors and the resulting nature of their labour market and firm links. Our analysis has identified four typologies of places within a city region, based on their labour market relationships with the economic centre: independent, isolated, dependent and interdependent. We have used these typologies to characterise the relationships of selected towns and cities with the economic centre in five city regions in this study: Leeds, Liverpool, Manchester, Sheffield and Tyne & Wear. Our research suggests that these typologies can also be used to characterise labour market relationships between secondary economic areas

and surrounding towns and cities. A sample 'wheel' for Manchester City Region is below. This approach can be used for relationships between economic centres and other places in any city region.



- These relationships are affected by the wider relationships across a city region. City regions can be monocentric, polycentric or bipolar depending on industrial history, the 'pull' of the economic centre, the economic characteristics of the city region and the wider commuting patterns. We found that Manchester and Sheffield are monocentric city regions, Leeds and Liverpool are polycentric city regions and Tyne and Wear is bipolar. City regions need to develop policies that take into account the nature of their economic relationships.
- Section 7 of this report sets out our detailed findings for the five city regions we studied, demonstrating how this approach can lead to strategic insights and practical actions for other city regions.
- Understanding more about the roles of different places within a city region is vital for city regions seeking to develop a dynamic understanding of how they operate and what to prioritise to increase prosperity in the economic recovery. Government, the Northern Way, RDAs and city regions can use this framework in order to enable stronger economic growth in the future.

About this report

This report summarises and synthesises the findings from the City Relationships research programme, carried out between October 2008 and November 2009 by the Work Foundation, Centre for Cities and SURF, commissioned and sponsored by the Northern Way and the Department of Communities and Local Government. It is one of seven reports which present the findings and conclusions of this work. The research aimed to test a hypothesis derived from previous research that stronger and more complementary economic relationships between towns and cities in the North of England would generate higher levels of sustainable economic growth and development.

The project examined the economic relationships between the five most significant economic centres in the North – Leeds, Liverpool, Manchester, Newcastle and Sheffield – and selected cities and towns nearby, looking in particular at labour market linkages and the connections between businesses. It considered barriers to more complementary economic relationships and what public policy might do to foster them.

At a time when the public policy environment is focused on recovery from the current recession, and when there are emerging changes in the tools available to agencies and institutions at sub-national level working on economic development, the report aimed to generate insights about how these tools could secure better economic outcomes for places across the North of England.

The seven reports published through the research programme include:

- This synthesis report: City Relationships: Economic linkages in Northern city regions;
- Five reports detailing our findings and conclusions for each of the city regions in this study;
- A report on the Research Methodology.

In addition, there are five supplementary data annexes supporting the 5 city region reports available on the Northern Way website

These reports are at www.thenorthernway.co.uk/cityrelationships

Introduction

For policymakers seeking to enhance the productivity of individual places it is vital to look beyond administrative boundaries.¹ Too often places are treated as individual entities, as if they are islands surrounded by open sea, and policy remedies are sought within this context.² In reality, local economies are open and dynamic. They operate within geographies that are unconstrained by administrative boundaries and their economic characteristics and productivity are instead shaped by economic relationships with other areas.³

1.1 Complementary economic relationships

The economic relationships between areas - the connections and flows of people to and from home, work and leisure, as well as firm relationships and supply chains⁴ - have the potential to generate benefits for both local areas. For example, in the Greater South East, London's success has benefited nearby cities and towns such as Reading.⁵ Reading not only has strong firm links with, and provides labour to, London, but has also benefited from direct access to the markets, skills and specialisations of London. This has enabled Reading to develop its own specialised growth momentum and create a strong labour market of its own, in turn benefiting individuals living nearby Reading who can access these employment opportunities.

When local areas have economic relationships that create advantages for both areas we have drawn on Overman's work to define them as **complementary economic relationships**⁶: labour market and firm links between two urban areas that generate mutual economic benefit.

However, not all economic relationships are complementary; some places appear to be less likely to benefit from their links with one another. In the North of England there is a desire to understand why the success of, for example, Manchester, Newcastle and Leeds has not spread to neighbouring areas in the same way that the success of London has benefitted surrounding areas.⁷ This raises questions about the factors that contribute to more or less complementary economic relationships.

To understand more about why the North of England does not appear to have as many complementary economic relationships as the Greater South East, and to assess the potential for policy intervention to build more mutually beneficial relationships, the Northern Way and CLG have been supporting The Work Foundation, Centre for Cities and SURF to investigate relationships between places in more detail.

1.2 City Relationships hypothesis

This programme aimed to test a hypothesis drawn from a comprehensive review of economic literature in the context of the North of England. The literature review⁸ sought to establish the factors likely to contribute to complementary economic relationships.

Links between economic centres and surrounding towns and cities were highlighted as having the potential to generate mutually beneficial economic relationships because of the access to high value goods and services they offer.⁹ In a more urbanised and knowledge intensive economy, urban scale and centrality are increasingly important to economic growth.¹⁰ A wide range of evidence suggests that larger urban areas contribute more to the economy than their medium-sized and smaller counterparts.¹¹ Smaller areas, in contrast, tend to have different roles

1. Hildreth P and Lucci P, "City Links", Centre for Cities (2008)
2. Cheshire, P. "Cities are not Isolated States", Research papers in Environmental and Spatial Analysis Series 91. London School of Economics: London.
3. Overman, H. et al (2007) Economic Linkages Across Space, CEP Discussion Paper No 805, London School of Economics: London.
4. Harding, A, Marvin, S. and Robson, B. (2006) 'A framework for city regions', Office of the Deputy Prime Minister, London, available at: <http://www.communities.gov.uk/publications/citiesandregions/frameworkfull>
5. Hall, P. & Pain, K. (2006) The Polycentric Metropolis: Learning from Mega-city regions in Europe: Earthscan
6. Overman, H. et al (2007) Economic Linkages Across Space, CEP Discussion Paper No 805, London School of Economics: London.
7. IPEG and CUPS (2008) The Northern Connection, The Northern Way: Jones et al. (2008) How Can Cities Thrive in the Changing Economy?, The Work Foundation.
8. See City Relationships Methodology paper
9. Philip McCann (June 2008) 'Globalization and economic geography: the world is curved, not flat' in Cambridge Journal of Regions, Economy and Society, p.363
10. Gabaix, X. and Ioannides, Y. M. (2004) 'The Evolution of City Size Distributions', in Henderson, J. V. and Thisse, J. (eds) Handbook of Regional and Urban Economics, Vol. 4
11. Gabaix, *ibid*

and to function more as locations for producing lower value goods and services and for supplying labour to economic centres. This suggests that smaller areas are likely to benefit from linking with economic centres because this provides access to higher value employment and firms (as suppliers or purchasers), as well as cultural amenities.¹² In turn, economic centres with high demand for skilled workers cannot be successful without links to neighbouring towns and cities that provide specialist labour and access to a larger pool of consumers.¹³ This creates the potential for mutually beneficial economic relationships.

Yet it is clear from the experience of towns and cities near to Manchester and Leeds that proximity to economic centres does not generate mutual economic benefit in itself.¹⁴ Work by Overman and Rice provides an explanation, suggesting that the reason that northern cities appear to have fewer complementary relationships is that the economic centres lack the demand for skills, industrial composition and transport infrastructure that would enable them to attract the people and firms required to fuel further economic growth.^{15,16} In other words, skills, industrial structure and transport are important to establishing mutually beneficial economic relationships between places.

Firm links were also suggested by our literature review to be important to complementary economic relationships. Firms benefit from locating in major urban areas because of the opportunities to innovate created through the exchange of tacit knowledge and interaction with diverse high value firms.¹⁷ This innovation then creates the potential for new products, processes and services to be created, as well as for firms to become more efficient. For firms in smaller urban areas, both suppliers to firms in major urban areas and purchasers of services (such as accountancy), access to the innovation networks and eco-systems of larger cities is suggested to provide opportunities to learn new ideas and develop new processes. As a result, policies to foster innovation and to invest in supply chains across a city region appear to be likely contributors to more complementary economic relationships.¹⁸

This theory would also suggest that **business clusters** are likely to support mutually beneficial economic relationships between places, as there are likely to be stronger supply chains. The evidence about the impact of business clusters is mixed: Porter's work suggests that clusters across administrative boundaries can deliver significant economic benefits¹⁹, whilst Martin and Sunley argue that the concept of clusters should be treated with more caution.²⁰ For the purposes of our hypothesis, we theorised that they were important.

Overall our literature review suggested that **when travel-to-work patterns of people are combined with an understanding of the choices that firms make in their location, a set of patterns emerge that shape the 'city relationship' outcomes from this analysis.** This suggests that:

- Places with complementary links – tend to share a combination of relative concentration of more productive firms, higher skilled workforce and higher quality and priced housing
- Places with less complementary links – tend to have a relative imbalance of more and less productive firms, higher and lower skilled workforce and higher and lower quality and priced housing

13. Harding, A. Marven, S. and Robson, B. (2006) *A Framework for City-Regions*, ODPM: London
14. Jones et al. (2007) *How Can Cities Thrive in the Changing Economy?*, The Work Foundation
15. Overman and Rice (2008) 'Resurgent cities and regional economic performance', SERC Policy Paper 1 (June 2008)
16. Overman et al (2009 forthcoming) 'Analysis of the implications and feasibility of developing stronger economic relationships between Leeds and Manchester City Regions' Northern Way (November 2009)
17. Baptista, R. (1999) 'Clusters, Innovation and Growth: a survey of the literature', In Swann, G.M.P., Prevezer, M., Stout, D. (Eds), *The Dynamics of Industrial Clustering: International Comparisons in Computers and Biotechnology*, Oxford University Press: Oxford.
18. Volterra (2009) *Innovation, Trade and Connectivity*, Manchester Independent Economic Review: Manchester
19. Porter, M. (1998) 'Clusters and the new economics of competition', *Harvard Business Review*, Vol. 76, pp. 77-90
20. Martin, R. and Sunley, P. (2003) 'Deconstructing clusters: chaotic concept or policy

Building on this analysis, our starting hypothesis was that:

“Sustainable economic growth of places, a more highly skilled workforce, higher individual prosperity” and reduced deprivation could be achieved in the North by strengthening the economic links between the economic centres of city regions and the towns and cities that surround them. These links could be supported through policies to improve integrated transport links, a focus on up-skilling of the working population, and fostering innovation and investment in specific business clusters and their supply chains.”

The research questions we investigated were:

Can a focus on complementarity lead to higher and mutually beneficial economic spillovers within and around the city regions of the North?

What are the factors that contribute to complementary or non-complementary economic relationships between northern cities?

Supplementary questions:

1. What supports complementary economic relationships between cities?
2. What are the barriers to complementary economic relationships developing between cities?
3. What can public policy do to support and develop complementary economic relationships between cities? Are there transferable lessons from other cities that have successfully developed and supported complementary economic relationships?

The work aims to inform economic development strategy at a number of levels: the Northern Way’s strategy, regional strategies, sub-regional and city regional development plans; and the work of CLG and other Government departments in the development of Multi-Area Agreements (MAAs), city region Economic Prosperity Board pilot schemes and prioritising infrastructure projects for the post 2014 budget. In addition, this work aimed to provide insights for city regions seeking to respond to the recession and prepare for recovery, as well as to inform the tough spending decisions that will be required to be made by Government over the next few years.

1.3 Methodology

To test the hypothesis and answer the research questions, the partnership conducted analysis of economic relationships between the five most significant economic centres in the North – Leeds, Liverpool, Manchester, Newcastle and Sheffield – and selected towns and cities nearby.

Our approach was devised based on our literature review and interviews with representatives of all five city regions, as well as a small number of academic experts. Our approach is summarised in the box below and our overall methodology is set out in detail in a separate paper.



21. Our focus is on economic growth of places but we note that Overman and Leunig’s work suggests that there may be a tension between focusing on the prosperity of individuals and of places, as individuals may gain greatest individual benefit from moving to places offering the greatest economic opportunities.

Box A: Summary of Methodology

We selected **two sectors** to focus on in each city region, enabling us to understand supply chains and business relationships in more detail.

We selected **six towns and cities** in each city region, focusing on three Local Authorities that have strong commuting links with the economic centre, one 'boundary' Local Authority (a Local Authority at the edge of the city region), and two Local Authorities, each with a high concentration of employment in the selected sectors. These are set out in the table below. More details (including SIC codes) are available in the methodology paper.

The work started with background data analysis to help us test the hypothesis. This set out measures of economic performance, skills, individual prosperity, wages and deprivation for the economic centres of the city regions and selected towns and cities in the surrounding area.

We then analysed secondary data to review the relationships between the economic centre and the towns and cities which surround them, focusing on three main themes:

1. Economic scale and increasing returns;
2. Labour market links;
3. Transport links.

Table 1: Overview of case study cities and sectors

City Region	Top commuting LAs	Boundary LAs	Sector LAs
Leeds City Region	1. Wakefield 2. Bradford 3. Kirklees	4. York	5. Calderdale – Financial Services 6. Harrogate – Retail
Liverpool City Region	1. Sefton 2. Knowsley 3. Wirral	4. Chester	5. St Helens – Maritime ('Liverpool Super Port') 6. Halton – Digital and Creative Industries
Manchester City Region	1. Stockport 2. Trafford 3. Bury	4. Blackburn	5. Oldham – Advanced manufacturing 6. Warrington – ICT, Digital/ Communications ²²
Sheffield City Region	1. Rotherham 2. North East Derbyshire ²³ 3. Barnsley	4. Doncaster	5. Bolsover – Advanced manufacturing and metals 6. Manchester – ICT
Tyne & Wear City Region	1. North Tyneside 2. Gateshead ²³ 3. Sunderland	4. Durham	5. Easington – ICT / Digital 6. Derwentside – Manufacturing ²⁴

22. Warrington can look both east and west, to Manchester and to Liverpool, and we have considered this as part of our analysis.
23. Barnsley can look both south to Sheffield and north to Leeds, and we have considered this as part of our analysis
24. Data analysis conducted as part of the research was carried out prior to the 2009 Local Authority boundary changes. Local authorities affected as part of the 2009 Local Authority boundary changes include Easington and Sedgfield (part of Durham Unitary Authority), and Chester (part of Cheshire West and Chester Unitary Authority)

1.4 This Paper

This paper sets out an overview of our findings.

Section 2 sets out our conclusions about the key research question exploring whether economic relationships can be 'complementary' – i.e., whether they can be mutually beneficial.

Section 3 sets out the factors that enable more or less complementary relationships.

Section 4 sets out a framework for understanding different types of complementary relationships.

Section 5 sets out a framework for different types of city region.

Section 6 sets out a framework for understanding the economic geography of different sectors in different city regions.

Section 7 sets out our headline findings for the five city regions.

Section 8 sets out our overall policy conclusions.

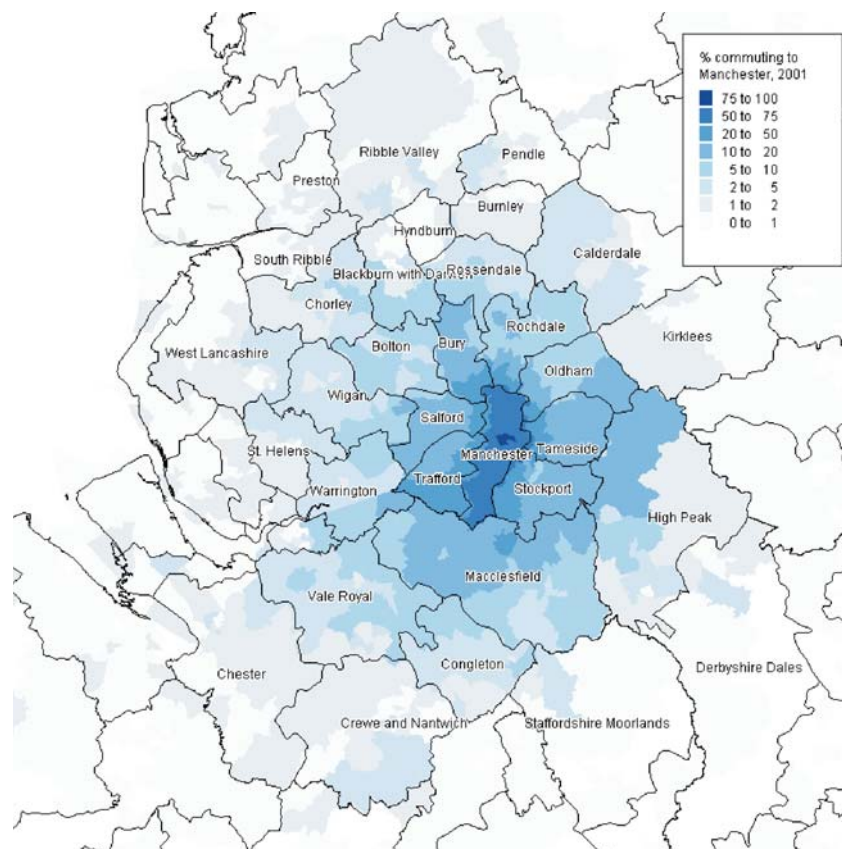


2. Can economic relationships lead to mutually beneficial economic spillovers?

The first research question that we set out to address was whether links between cities can be mutually beneficial and generate spillovers - in other words, whether forging 'complementary' economic links is a useful aim for policymakers.

To test this we first analysed labour market links between the five economic centres and their neighbouring towns and cities by mapping commuting links at ward and Local Authority level. As an example, figure 2.1 below illustrates the picture for Manchester, showing the large geographic area from which Manchester recruits its workforce.

Figure 2.1: Percentage commuting to Manchester, all workers, 2001



Source: Origin destination data, Census 2001

25. Graham, D. (2006a) Investigating the link between productivity and agglomeration for UK industries, Centre for Transport Studies. We made use of Graham's agglomeration elasticities to calculate four indices of agglomeration, benchmarking a Local Authority area's employment in certain sectors to the English and Welsh average. The indices benchmarked employment in sectors that are likely to derive economic benefits from being located in or near a big city, as well as employment in sectors that may respond negatively to 'agglomeration'. An index over 100 indicates higher employment in the respective sector within the Local Authority area than at the English and Welsh average. For example a city with an index of 150 in 'positive significant' sectors and an index of 50 in 'negative significant' sectors, is a city that will benefit strongly from agglomeration.

Lack of data makes it difficult to measure firm links within the City Region so an 'agglomeration index' derived from Graham's work as a proxy for firm links was used. This helped us assess the scale of employment in sectors that are 'agglomeration sensitive', meaning they derive above average productivity benefits from being located in or near a big city, and similarly to assess the scale of employment in those sectors that do not benefit from agglomeration.²⁵ Based on these two measures, we were able to assess changes in GVA, resident and workplace earnings over time in each of the five city regions, comparing the economic centre to neighbouring areas.

We found that in each city region, places with strong labour market links to the economic centre had seen an increase in GVA, resident or workplace earnings.

Stockport, Harrogate, North East Derbyshire, Gateshead and Sefton have all benefited from labour market links with the economic centre of their city region. Yet we also found that the types of links differed. Between Stockport and Manchester there are strong labour market links in both directions. Stockport has increasingly developed a knowledge-intensive employment base that is complementary to economic growth in Manchester, and over the last ten years its GVA, resident and workplace earnings have increased.

We also found that some places had relatively strong labour market links when measured by volume of commuting, but that the economic performance of that Local Authority area had not increased as much as in other places. For example, whilst Rotherham has strong commuting links with Sheffield, the gap between average resident earnings between the two Local Authority areas has widened, suggesting that Rotherham's residents may not be benefiting from growing high value opportunities in the economic centre but rather continue to supply labour for lower skilled jobs. And there were other places which had strong economies and yet did not have strong commuting links with economic centres (although their industrial structure tended to be more complementary).

This suggested that **economic relationships between places can lead to mutually beneficial economic spillovers, but that there are certain factors that affect whether those relationships are mutually beneficial or not.** These factors are discussed in the next section.

3. What are the factors that contribute to complementary relationships?

People and firms are the basic foundations of any 'place' economy. Their movement and interaction with other 'place' assets, shapes how economies operate and perform, as well as creating economic relationships between places. Our hypothesis suggested that skills, transport, innovation and business clusters were all factors that would contribute to more complementary, or mutually beneficial, economic relationships between places. This hypothesis was tested through a combination of quantitative and qualitative analysis in each of the five city region case studies.

3.1 Skills

Of these, skills emerged clearly as the most important factor determining whether economic relationships are more or less complementary. An individuals' employment and skills characteristics are crucial to their ability to access employment opportunities and, this, in turn, strongly influences their decisions about where to live and work.

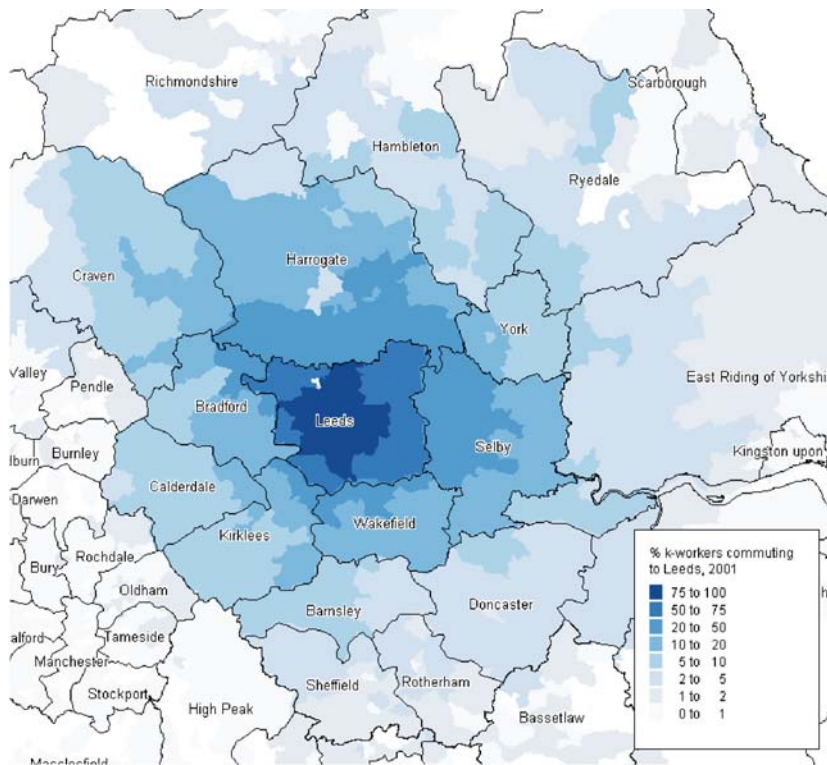
Within a city region, labour market relationships between places are formed when individuals live and work in different places and make travel to work journeys which connect the two. Broadly, the higher the skills and qualifications which individuals have, the wider the choices they have about where they live and where they work. Higher skilled individuals are also more likely to travel further to work.²⁶ For people who have low to no qualifications, occupational and residential choices are likely to be more constrained.²⁷ They are much more likely to work close to the neighbourhood in which they live, meaning that these individuals are less likely to create economic relationships between places via commuting relationships.

Different residential locations within a city region will vary in their stock of skilled and less skilled workers. Some places will have a concentration of highly skilled workers who travel some distance to work in high value jobs in other places in the city region. The distances travelled are illustrated by our maps of knowledge worker commuting patterns within for the Leeds City Region). Places with a stock of highly skilled workers tend to have higher average resident earnings and to have higher levels of mutual benefit from the economic relationships created by commuting patterns. Other places will have concentrations of less skilled workers with much shorter journeys to work. These individuals tend to take up lower paid jobs, meaning that the average resident earnings are lower and therefore the benefits from the economic relationships formed through travel to work patterns are lower.

26. Green, A. and Owen, D. (2006) *The Geography of Poor Skills and Access to Work*, York; Joseph Rowntree Foundation

27. Green, A. *ibid*

Figure 3.1: Percentage of knowledge workers commuting to Leeds, 2001 (ward level)



Transport was also a factor that our hypothesis suggested would be important in establishing more mutually beneficial relationships between cities. We tested this through reviewing the difference that travel times made to labour market relationships between places.²⁸ We calculated a measure of transport integration (based on transport policy indicators e.g. inclusion within the same Local Transport Plan, convenience indicators e.g. joint travel tickets, as well as commuting times) as well as interviewing firms to find out what difference transport made to their economic relationships within city regions.

Our research demonstrated that transport can enable stronger economic relationships between places. For example, strong transport links between Manchester and Stockport have facilitated increased levels of commuting between the two. Lack of effective transport links can also act as a barrier to more effective links between places. This is particularly true for lower skilled workers who may be less willing to travel long distances but may be willing to travel if times and costs are low.²⁹ For example, the effective transport links between Sheffield and Rotherham are an important factor in encouraging workers to travel to Sheffield for work. This is despite the fact that they travel primarily for lower skilled jobs and therefore the benefit to Rotherham is lower than it might be if residents had higher skills. Improved transport links can also make areas more attractive locations for higher skilled workers, however, by making travel easier. For example, in the Liverpool City Region, interviewees noted that short travel to work times are regarded as a real asset for staff recruitment and retention.



28. We inspected the speed of rail and road connections compared to distance as the crow flies. We also collated data on congestion on the road and rail network through Network Rail's Route Utilisation Studies as well as publications by the Department for Transport. See Methodology Paper for further details.

29. Robson, B, Barr, R, Lymperopoulous and Rees, J (2006) A Framework for city regions: Working Paper 1: Mapping city regions, available at <http://www.communities.gov.uk/documents/citiesandregions/pdf/143855.pdf>

However, we found that more integrated transport links were not sufficient to create more complementary economic relationships on their own: there needs to be demand for that transport. For example, Bradford is well integrated in the Leeds City Region transport system but has relatively low levels of commuting between the two, whilst in Tyne and Wear City Region, over 12% of Derwentside's residents travelled to work in Newcastle in 2004, despite low levels of transport integration. In the Sheffield City Region, Sheffield's Supertram ran into financial difficulties when it was first opened due to lack of demand. The tram's route was designed to promote neighbourhood regeneration but failed to attract the predicted passenger numbers forcing the South Yorkshire Passenger Transport Executive to sell to Stagecoach.³⁰

Our work therefore suggests that transport can enhance and facilitate existing connections for high skilled places. Transport can support stronger connections for lower skilled places where travel distances are short and costs are low. However, having a transport connection is not a sufficient condition for more mutually beneficial economic relationships in its own right.

3.3 Firm links

Innovation, business clusters and supply chains were factors that our hypothesis suggested would be particularly important to firm links. We tested the importance of business clusters and supply chains by reviewing the industrial composition of different areas using Graham's measures of agglomeration benefit by industry, and through interviews with over 50 firms in different sectors in the five city regions. Our findings suggest that firm links do underpin economic relationships between places, but that firm links have more impact on economic relationships in some sectors than others.

Firm links are influenced by a range of different factors. Conventional economic theory suggests that firms will choose to locate where they can minimise their costs and maximise their profits. However, different factors will influence how productive they will be in different places, including customer and supplier linkages, labour markets and knowledge spillovers.

There is a wide range of evidence about why some city regions enable higher productivity for firms than others. Work for the Manchester Independent Economic Review has identified the importance of scale.³¹ However, this City Relationships research sought to understand how 'agglomeration economies' affect location decisions within a city region – in other words, why some firms locate in Bradford and others in York. What we found, which broadly reinforces the conclusions of academic literature^{31,33}, is that firms choose where to locate within a city region depending on how important access to agglomeration economies is within their sector and the particular stage of development of the company. Table 3.1 below sets out our main findings:

30. Winkler, A. (2007) Sheffield City Region. Centre for Analysis of Social Exclusion: London.

31. Overman, H, Gibbons, S and Tucci, A (2009) 'case for agglomeration economies', Manchester Independent Economic Review, available at: <http://manchester-review.org.uk/projects/view/?id=718>

32. McCann, P (2007) 'Sketching out a model of innovation, face-to-face interaction and economic geography', Spatial Economic Analysis, Vol.2 No. 2, pp117-134

33. Graham, D. (2006a) Investigating the link between productivity and agglomeration for UK industries, Centre for Transport Studies

Table 3.1: Factors influencing firm’ location decisions within a city region

Agglomeration factors	Definition	Impact on firm location within a city region
Customer and supplier linkages	Firms’ accessibility to their customers and to suppliers for goods and services.	<p>These were less likely to be important factors in explaining firm location. Good access to national and international markets through road, rail and airports was important to firms trading nationally and internationally, as well as the reputation of the city region, particularly in competing with London firms. For example, Liverpool City Region noted the challenge of competing with London and Manchester for specialist skills in the ICT and Digital sector.</p> <p>Local supply chains appear to be less important to location decisions, except for manufacturing where some suppliers located close to a major buyer. For example, Blackburn has an aerospace cluster created by smaller suppliers clustering around the major buyer, British Aerospace.</p>
Labour markets	Firms’ ability to access the range of specialised skills that they require from a labour market of sufficient size and quality, as well as the capacity for employees to be able to choose between a range of jobs to further their career and lower their risk of redundancy.	The size and quality of the labour market was always cited as important factors for firms and workers, but it became increasingly important the more specialised the skill set sought by firms in the city region. In turn their capacity to find these workers was dependent on how attractive the labour market was to workers in relation to the volume and quality of employment opportunities available. For example, Leeds City Region has successfully attracted workers in financial services because of the opportunities for career progression across the city region.
Knowledge spillovers	Advantages that firms may gain by being close to other firms, enabling them to observe other firms’ activities and developments, exchange ideas and learn from innovations by other firms.	<p>The importance of face-to-face interactions and knowledge spillovers varied depending on the sector.</p> <p>There are different perspectives on how this process occurs; as a result of knowledge spillovers through firms in different sectors interacting (agglomeration across sectors or urbanisation economies),³⁴ through spatial proximity between firms in the same sector (localisation economies),³⁵ or in relation to firm size or stage of firm development. In all three models there is an implicit assumption that knowledge transfers occur primarily between local individuals, firms and other organisations.</p> <p>In the sectors examined in this research it appears that there may be different processes at work sector by sector. For example, stakeholder interviews suggest that small steel manufacturing companies in Sheffield have a higher propensity to work with research institutions than with each other, whereas in ICT and Digital firms in Manchester there tend to be high levels of interaction with one another through social and business networks.</p>

34. Krugman, P. (1991) ‘Geography and Trade’. Cambridge, MA, MIT Press

35. Porter, M (1990) ‘The Competitive Advantage of Nations’, New York, Free Press

36. Scott, A J (1988) ‘New Industrial Spaces’, London. Pion

37. McCann, P (2007) ‘Sketching out a model of innovation, face-to-face interaction and economic geography’, Spatial Economic Analysis, Vol.2 No. 2, pp117-134, ibid

Overall we found that the key to understanding the influence of firm links on the economic relationships between places is the extent to which sectors are strongly embedded within a city region, with high levels of employment present at different points in the supply chain across the city region. In these situations, business clusters, supply chains and innovation that take place through interactions between firms all inform and shape economic relationships between places. For example, the maritime sector in Liverpool City Region supports employment in a wide range of sub sectors located across the city region. These sectors strongly inform the economic relationships between places within that city region.

However, in other sectors supply chains are not contained within the city region and instead are national and international, with decisions made based on a combination of factors including quality, price, information (knowing about the firm) and trust.³⁸ For many firms, the main asset derived locally is labour, meaning that a firm's location decisions are strongly influenced by access to specialist skills and appropriate labour markets, rather than necessarily by business clusters or supply chains. For example, one organisation in Sunderland is located between several universities in order to access the skills created by those institutions.

3.4 Labour market links and firm links

Our findings suggest that **labour market links are the most important indicator of the strength of economic relationships between places and commuting links provide an important insight into how strong or weak relationships are.**

This is because of the influence labour markets have upon location and migration decisions for individuals and for firms. Employment opportunities are the main reason that people decide to relocate³⁹ but the area in which jobs are located is not always the area in which individuals wish to live for quality of life, housing stock or other reasons. Individuals therefore often live and work in two different locations within a city region and by travelling to work they create economic relationships between places. For example, within Leeds City Region a number of highly-skilled individuals choose to live in Harrogate for access to its housing, public services and quality of life, but travel to work in Leeds. Access to labour across a city region was identified in interviews as one of the main elements of firms' local links, whilst firm links are more variable according to different sectors.

We also found that firm links can be an important indicator in some circumstances. In some city regions particular sectors are strongly embedded in the local area through a combination of history, geography, local supply chains and skills. For example, in the Liverpool City Region, different activities within the maritime sector are distributed around the city region. This means that firm links within the maritime sector are an important indication of relationships between places. For policymakers, this suggests that there are benefits associated with enabling strong interaction between within sectors, for example through networks and demand-led infrastructure investment.

38. Stakeholder interviews

39. The Work Foundation 2006 survey, unpublished

3.5 Factors beyond our hypothesis

Our quantitative and qualitative research also clearly illustrated that it was not just skills, transport and firm links that made a difference to economic relationships. Other characteristics of places also make a difference to the economic links they have with their neighbours. Additional influencing factors are discussed below.

3.5.1 Pull of the economic centre

One of the key findings emerging from our research was the importance of the 'pull' of the economic centre – its attractiveness for labour and firms over a geographic area. Economic centres tend to offer:

- The highest productivity area of the city region for firms, particularly those in sectors within or related to advanced producer services;
- A central location for firms requiring proximity to other knowledge based firms, particularly professional and financial services organisations⁴⁰ and access to the public goods offered by the city centre;
- A concentrated employment area for knowledge-based workers and end point for most journeys from home to work;
- A focus for transport connections for people in the city region
- Cultural and retail hubs for the city region.⁴¹

Economic centres tend to offer the greatest productivity advantages to firms.⁴² In all our case studies, with the exception of Liverpool, the place we identified as the 'economic centre' of the city region had the highest productivity of that city region (that Liverpool is an exception is likely to be effected by the high proportion of public sector employment). However, our evidence also demonstrated that the 'pull' of the five economic centres – measured by workplace earnings, levels of commuting flows, distance travelled, access to career opportunities and productivity - varies considerably.

Economic centres offering high workplace earnings create a strong incentive for individuals to travel to them.⁴³ When the five economic centres are compared looking at workplace earnings, Manchester offers the highest earnings to individuals and therefore the highest incentive to travel, followed by Leeds, Liverpool, Sheffield and Newcastle.

However, the earnings 'pull' is relative, and needs to be placed in the context of the wider city region; for example, whilst Newcastle offers the lowest wages of the five economic centres we reviewed, it offers the highest wages within large parts of the city region and so attracts labour across a wider geographic area than Liverpool, despite Liverpool offering higher wages. Distance travelled is thus another indicator of the economic 'pull' of a centre, as illustrated in the diagram below.



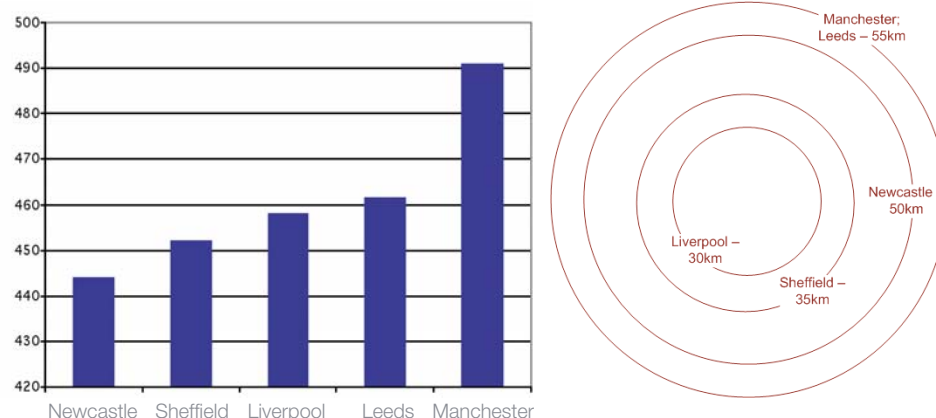
40. Many firms outside the economic centres had links to these organisations in the economic centre of the city region, which is where they tended to cluster

41. Turok I (2008) A New Policy for Britain's Cities: Choices, Challenges and Contradictions', *Local Economy*, Vol. 23, No. 2, pp. 149-166

42. The Case for Agglomeration Economies (2009) Manchester Independent Economic Review

43. Overman, H, Gibbons, S and Tucci, A (2009) 'The case for agglomeration economies', Manchester Independent Economic Review, *ibid*

Figure 3.1: Workplace earnings and approximate Travel to Work Area



However, distance travelled is not a reliable indicator in isolation of the 'pull' of an economic centre. For example, the tight travel to work area around Liverpool is shaped by the geography of the city region: its position on the North West Atlantic Seaboard; the relative compactness of its core urban area as well as the relatively stronger economic pull of Manchester and Leeds compared with Liverpool. Yet despite having a smaller travel to work area than Sheffield, it offers higher workplace earnings and so has a stronger 'pull' within a more constrained area⁴⁴. In addition, Manchester's large travel to work area is partly a result of it being under-bounded and partly because of the strength of its economy.

Scale is also important; centres, such as Manchester, are larger and offer significantly more employment opportunities than Newcastle. This suggests that it is important to consider different measures of 'pull', and that levels of commuting are likely to provide a more accurate reflection of the 'pull' of an economic centre than distance travelled alone.

Access to career opportunities within the economic centre and the wider city region is another factor affecting the 'pull' of the economic centre, and these are affected by wider geographical and historic factors. For example, stakeholder interviews suggested that Manchester is seen as a good base to live for workers who might work outside the city region at some stage in their working career because it offers access to the labour markets of Liverpool, Manchester, Leeds and Sheffield. Therefore, workers based here do not feel that they have to migrate when changing employment to work in another city region.⁴⁵ By comparison other stakeholder interviews suggest a residential location in the Liverpool City Region is seen as more constraining if people wish to build a career which might take them to work in other city regions.

Another way of considering the 'pull' of the economic centre is the productivity of firms, based on the theory that productive firms will attract other productive firms to locate there.⁴⁶ The MIER concluded that of the case study areas, firms in the Manchester and Liverpool City Regions had the highest productivity. This was followed by Leeds City Region, then Tyne and Wear, and finally by Sheffield.⁴⁷

44. Overman, H, Gibbons, S and Tucci, A (2009) 'The case for agglomeration economies', Manchester Independent Economic Review, *ibid*

45. Stakeholder interviews

46. Overman, H, Gibbons, S and Tucci, A (2009) 'The case for agglomeration economies', Manchester Independent Economic Review, *ibid*

47. Overman, H, Gibbons, S and Tucci, A (2009) 'case for agglomeration economies', Manchester Independent Economic Review, *ibid*

Overall, it is clear that a combination of factors determine the 'pull' of an economic centre. Our research found that the characteristics of an economic centre are critical to agglomeration benefits and to shaping the inter-relationship of the patchwork of 'places', including the other towns and neighbouring cities, which collectively form a city region. For this reason, later in this report, we have described city typologies in the context of labour market relationships between the economic centre of the city region and its neighbouring towns and cities.

3.5.2 Industrial history

Our case studies also demonstrated that a place's economic relationships are affected by its geography and industrial history. Physical geography has shaped places' industrial past, because access to natural resources, such as coal or steel, tends to have shaped the original formation of a settlement in that area and the industrial composition of that place thereafter. Many areas that specialised in coal or steel are still adapting to the more knowledge intensive economy of the 21st century and are less likely to have high levels of employment in high skill jobs or to offer the quality of life that highly paid individuals might seek if they are to live there and travel to work elsewhere.

Whilst access to raw materials is less relevant to an area's sectoral composition today, physical geography continues to shape economic relationships. For example, being divided from employment centres by a lack of transport across physical barriers such as the Pennines has an impact on economic relationships. So too does proximity to high quality countryside, which provides an attractive quality of life for residents and can make an area a more attractive place in which to live and commute from, even if high level jobs are not based in that area.

3.5.2 Quality of place and housing

Quality of place emerged as an important factor in shaping whether places have economic links with one another, and how mutually beneficial these links are.⁴⁸ The quality of place – the housing stock, public services and the overall environment – has a significant impact upon migration and location decisions of individuals and firms. The Residential Futures work conducted by Tribal strongly demonstrates that housing, as well as "plus" factors which sit alongside, such as schools, safety and transport, have an important role to play in influencing where people locate within a city region.⁴⁹ Residential areas offering a high quality of life and attracting higher skilled workers tend to have higher house prices, reflecting the quality of the housing stock and local access to quality public amenities (schools, parks, the physical realm). These factors influence people in different ways and are critical to attracting more mobile knowledge workers.

Quality of place emerged as an important policy lever for places seeking to develop more complementary economic relationships with economic centres. A diversity of quality of place is important however, with a need for places which offer affordable housing for families and young couples, as well as places which offer high end housing and services.



48. Hildreth, P (2007) 'The dynamics of 'place-shaping': the changing rationale for urban regeneration', *Journal of Urban Regeneration and Renewal*, Vol. 1, No. 3, pp227-239, *ibid*

49. Northern Way (2009) *The Northern Way: Residential Futures*. Northern Way: Newcastle-Upon-Tyne.

3.6 Conclusions

Drawing the above analysis together, we found that our hypothesis was partly correct: skills, transport and firm links (described as innovation, business clusters and supply chains) do impact upon economic relationships between places. However the picture is more complex than our hypothesis suggested, with the pull of the economic centre, industrial history and quality of place also emerging as important factors shaping relationships between places. Key findings are:

- A better appreciation of city region economies can be developed by understanding flows – people and firms – and how they relate to different places within a city region. This is a much more helpful approach than the more traditional static analysis of data across the whole area.
- People relate to place through their skill and employability characteristics. More skilled people are likely to choose to locate in places with higher quality housing and access to better quality public goods. They are also more likely to accept the monetary and time costs of making longer journeys to work to locations where they can access better paid jobs. Less skilled people have less choice in the housing market and make shorter journeys to work to less well paid employment.
- Firms relate to place by choosing locations within the city region that best suit how and whether they take advantage of agglomeration factors to influence their productivity and profitability. Access to labour has emerged as the most important of these to the firms that we interviewed. Location decisions may also be based on where the owner or managing director lives, emphasising the importance of quality of place.
- Travel to work movements between places provide the best basis for this analysis because they indicate where people live and where they work. In addition, behind the movements are a wider set of economic indicators and interactions between quality of place and supply of, and demand for, skills. These factors impact upon whether the relationship between places is more or less complementary.
- Overall, we observed that different places have different roles within a city region, depending on their characteristics and relationships with the economic centre.

This suggests that a key insight for policy is that understanding more about the roles of different places within a city region is vital for city regions seeking to develop a dynamic understanding of how they operate and what to prioritise to increase prosperity in the future.

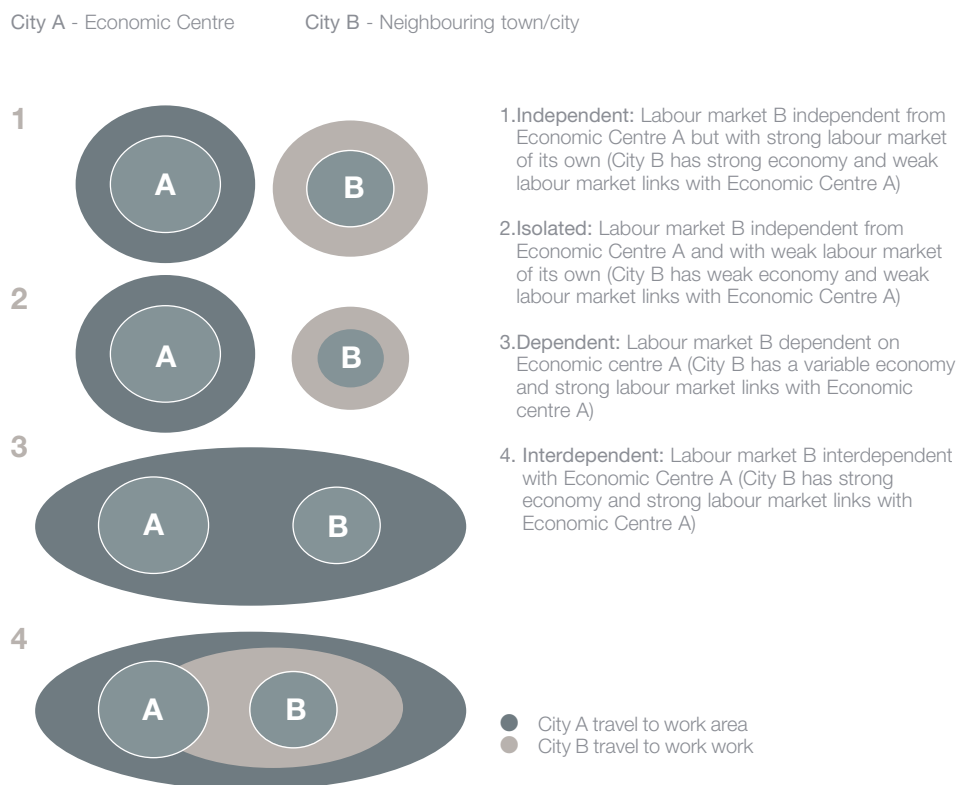
4. Typologies of ‘city relationships’

One of the key insights emerging from our work is the importance of understanding the different roles played by different places within a city region. Relationships between places are affected by their underlying economic and social characteristics, as well as by the nature of the city region in which those places are located. These relationships affect the role that places play within a city region, whether this is as a supplier of high quality labour or a generator of employment. A greater understanding of the dynamics between places will enable city regions to develop more effective strategies to respond to the wider changes in the economy. To support this understanding, this research has developed two frameworks which can be used to understand economic relationships between places in city regions: one providing typologies of places based on the labour market relationships between the economic centre and surrounding places, and one providing typologies of different city regions defined by the structure of economic centres.

4.1 Overview of typologies of city relationships

When reviewing relationships between the economic centre and neighbouring towns and cities, our analysis identified four typologies of places within a city region based on the factors that are most important to complementary economic relationships between places (set out in section three). These are illustrated in the diagram below.

Figure 4.1: ‘City relationships’



These typologies, which focus particularly on labour market relationships, enable us to capture two key points from our analysis.

Firstly, the roles that places play in a city region based on their commuting relationships with the economic centre. Places are described as being in one of the four typologies based primarily on commuting patterns, with sub categories using other indicators (skills; earnings (resident and workplace); sectoral mix; and house prices) to further understand the different roles places play and the benefits they gain from economic relationships.

Secondly, we tried to assess the extent to which places benefit from those relationships by identifying different categories within the four typologies. For example, neighbouring areas with higher levels of skills are likely to have more mutually beneficial economic links with the economic centres as individuals' mobility (both geographic and occupational) is influenced by their skills and qualifications. The approach we used is illustrated in Table 4.1 below.

Table 4.1: City Typologies Summary

City Relationships typologies: Labour Market Links	Skills	Earnings Resident	Earnings Workplace	Sector	House prices	Deprivation
Isolated	•	•	•	Traditional	•	Poor Scores
Independent	•••	•••	•••	Diverse	•••	Good Scores
	••	••	••	Mix	••	Mixed Scores
Interdependent	•••	•••	•••	Complementary	•••	Good Scores
	••	••	••	Mix	••	Mixed Scores
Dependent	•••	•••	••	Complementary	•••	Good Scores
	••	••	••	Mix	••	Mixed Scores
	•	•	•	Traditional	•	Poor Scores

Each type of place is described in more detail below.

4.2 Independent places

'Independent' places are towns or cities that have a relatively strong economy and vibrant labour market which are largely independent from the economic centre of the city region within which they are situated.

Even though the direct commuting links between the economic core and the smaller city or town are relatively low, the economic relationship between the two places is largely complementary. The neighbouring area may derive benefits from the growth of the economic core, notably by aligning economic development efforts and supporting complementarity in shared sectoral specialisms.

Our research found two types of 'independent' places depending on levels of skills and earnings, sectoral composition, average house prices and levels of deprivation.

Independent Place

Type 1 Independent Place

Places with diverse industries are often characterised by a high level of skills, earnings, house prices and good deprivation scores.⁵⁰ These independent cities have strong labour markets that are independent of the economic centre, although there are likely to be benefits associated with firm links. For example:

- In financial or retail industries a larger company may seek to place an office in both places, reflecting their individual economic significance;
- There may be areas for potential cooperation, for example in tourism and in cultural development to enable the city region as a whole to offer a more significant visitor offer;
- They may offer complementary but distinct specialisms within related industries (e.g. professional services), that are likely to grow in parallel to each other.

Examples of this type of place are Chester or York.

Type 2 Independent Place

Places with a mix of industries are often characterised by a medium level of skills, earnings, house prices and mixed deprivation scores. These independent places have moderately strong labour markets that are independent of the economic centre, although there are likely to be benefits associated with firm links. These benefits may be similar to, but not as strong as those described in Type 1 above because the industries are less complementary to one another, and so the potential for links is weaker.

An example of this type of place is Halton.

'Independent' places may benefit from working with the economic centre to identify whether there is potential to encourage networking between firms to stimulate innovation.

4.3 Isolated places

An 'isolated' relationship can be described as where the neighbouring area has a labour market that is largely isolated from the economic centre. This is a reflection of the relative weakness of the economy of the smaller place. It has a relatively small labour market with few travel to work movements. As a reflection of its own economic weakness, it tends to have a relatively low skilled resident workforce; low resident and workplace wage levels; and low average house prices. The area also tends to be dominated by traditional manufacturing or low knowledge based services delivering predominantly low value jobs.

An example of this type of place is Blackburn.

It is important to note that whilst a city or town may be isolated in labour market terms from the economic centre, it will often have relationships to other surrounding smaller cities or towns. For example, Easington has strong labour market relationships with Sunderland. For these places it is important to understand where they do have labour market and firm links, what the barriers to stronger links are, and how they may be overcome.



50. A city with diverse industries can be distinguished from a city with a mix of industries according to two criteria: a diverse city specialises in a wider breadth of industries and has a smaller percentage of employment in traditional industries than a city with a mix of industries.

4.4 Dependent places

'Dependent' places are those with very strong one way commuting flows to the economic centre. The characteristics of dependent places can vary considerably and our research identified *three types of 'dependent place'* depending on a city or town's level of skills and earnings, its sectoral composition, average house prices and levels of deprivation.

Dependent Place

Type 1 Dependent Place

Places with a more complementary pattern of sectoral specialisation have higher levels of skills, resident earnings and house prices. Their deprivation scores tend to be good and their workplace-based earnings medium level. These places benefit significantly from their relationship with the economic centre. Because the residents of this area tend to have higher skills, they tend to be among the first to benefit from any growth in knowledge employment in the economic core. A growth in service employment in this area tends to be complementary with the economic core and the economy benefits from the relatively higher residential incomes.

An example of this type of place is Harrogate.

Type 2 Dependent Place

Places with a mix of industries often have medium levels of skills and earnings, medium house prices and mixed deprivation scores. These areas benefit to some degree from their relationship with the economic centre. Residents with higher skills will benefit from any growth in knowledge employment in the economic core. Those with medium levels of skills may benefit from a growth of service employment in the economic core (e.g. retail employment). Any growth in service employment in this place tends to be complementary with the economic core (e.g. retail) and the economy may benefit from relatively higher residential incomes. However, this impact will be lower than for type 1) above.

An example of this type of place is North Tyneside.

Type 3 Dependent Place

Places with traditional industries are often characterised by low levels of skills and earnings, house prices and poor deprivation scores. These areas benefit least from their labour market relationships with the economic centre. Their residents will tend to be less skilled or even inactive in the labour market. They are less likely than in the case of 1) and 2) above to travel to the economic core to take up employment opportunities. These areas are more likely to have employment in sectors that are less complementary to sectors within the economic core (e.g. manufacturing).

An example of this type of place is Barnsley.

Dependent cities can benefit from the economic centre but advantages will increase as the levels of skills in that area increase. It is important for these towns and cities to work with their economic centre and its neighbours to ensure that there is a complementary strategy to invest in the skills of their resident population and to promote economic change by improving the quality of housing, public services and appropriate business accommodation (where there is demand for this) in neighbouring towns. The economic centre also needs to consider how it can benefit from 'dependent' places and how it can help these 'dependent' places thrive.

4.5 Interdependent places

This relationship exists where there is an interdependent labour market relationship between the economic core and a nearby city or town. Historically, the neighbouring city or town has come within the travel to work area of the economic core. But because of its own economic strength it has developed its own labour market, with significant travel to work movements both in and out of the area. Thus the neighbouring city or town combines a strong labour market of its own with commuting into the economic centre.

Our research found *two types of 'interdependent place'*, which can be distinguished according to an area's level of skills and earnings, its sectoral composition, average house prices and levels of deprivation. These two types are similar to the two types of 'independent place':

Interdependent Place

Type 1 Interdependent place

Places with complementary industries are often characterised by a high level of skills, earnings, house prices and good deprivation scores. These areas benefit significantly from two-way commuting flows to and from the economic centre. Unlike independent places there may be more of a direct relationship between the development of specialist sectors within the economic core and the neighbouring area. For example, the economic core may have developed a specialism in advanced financial services. The neighbouring area may offer a cheaper location for more general financial services that benefit from closeness to the economic core but also benefit from the cheaper costs of being in the neighbouring area.

An example of this type of place is Stockport.

Type 2 Interdependent place

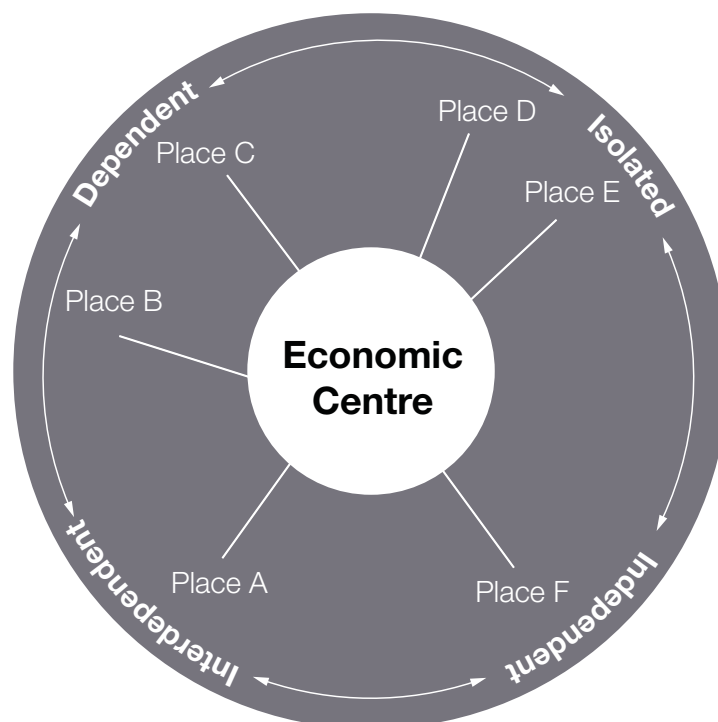
Places with a mix of industries are often characterised by a medium level of skills, earnings, house prices and mixed deprivation scores. These areas benefit to some degree from two-way commuting flows to and from the economic centre. Their economies may often be fairly integrated with the smaller city or town being largely an extension and lower cost location than the economic centre. Indeed, the identification of the relationship may be a reflection of the existence of administrative boundaries that artificially divide inter-related economies.

An example of this type of place is Gateshead.

Interdependent cities and towns play an important role within the city region both supplying and creating demand for skilled labour. Policy makers within the city region need to develop an understanding of how these labour markets overlap and how the scale of the city region as a whole can be increased through increasing the economic relationships between places. For example, by increasing the area from which an economic centre can draw labour or a firm can do business, this increases the scale of a city region overall, and this is facilitated through economic relationships between places.

4.6 Mapping the roles of places within city regions

We have developed a 'wheel' that enables us to present this for each economic centre. This is illustrated in the city region findings later in this report: a sample of what this could look like is presented below.



4.7 Caveats and challenges

Four caveats should be noted when using these typologies.

- We recognise that the randomness of administrative boundaries can frustrate attempts to categorise by Local Authority. Most Local Authority areas have pockets of deprivation and affluence; relationships with an economic centre are often stronger in areas closer to that economic centre and less strong elsewhere. We use this framework at the level of the Local Authority because it is the level at which policy is made and at which most data is available. To highlight some of the differences and different challenges within Local Authority areas we examined commuting at ward level and deprivation at Lower Super Output level. For city region policymakers, knowledge of the differences within, as well as between, Local Authority areas will need to affect the policies devised as a result of this analysis.
- We recognise that the policies required to support cities in the same typology to improve the economic benefit they gain from relationships with the economic centre will vary. Having the same labour market relationship means there are certain principles that will apply to all places in that typology – but the approach for Bury is different to that for North East Derbyshire.
- Economic relationships exist with places other than economic centres. This framework has focused on relationships with the economic centre. However, we recognise that this excludes some parts of the city regions and that most Local

Authority areas have labour market relationships with areas other than the economic centre. Our methodology has the potential to be applied across the whole city region, including to relationships between smaller economic centres where desired, for example to understand the relationship between Sunderland and Easington better.

- **Aspirations need to reflect the evidence base and the distinctive nature of each local area.** One of the questions we have been asked in consultation discussions is ‘which type of city relationship is best?’. Clearly, places need to work towards the development of economic relationships with nearby economic centres that reflect their distinctiveness, their history and their assets, and to aspire to derive the maximum economic benefit by creating opportunities for residents. For example, many places will gain most benefits for their residents by focusing on enhancing a relationship in which they depend on the economic centre for employment opportunities and aim to grow the skills base of their own residents. One of our main conclusions is that the precise nature of relationships between places will vary according to individual circumstances. It should be understood that we have not created a hierarchy of relationships through these typologies.

5. Typologies of ‘city regions’

Analysis of different economic relationships within a city region also highlighted that the characteristics of the city region as a whole impact upon the nature of those relationships. These characteristics are affected by the ‘pull’ of the economic centre, as well as the economic strength of other cities and towns within the city region, the industrial history of the city region and the commuting patterns between them. Our analysis, drawing on available literature, identifies three different ways of characterising the relationships that exist between the towns and cities which form a city region; **polycentric, monocentric and bi-polar**.

5.1 Defining polycentric, monocentric and bi-polar

The terms ‘polycentric, monocentric and bi-polar’ can be defined in different ways. One approach is based on size. In this interpretation, a monocentric system is dominated by one large urban area, likely to be the main source of high value employment for the surrounding areas. A polycentric system is one where there is a wide spread of cities of different sizes. A less polycentric system is dominated by one, two or three major cities, which are themselves more likely to be monocentric. This approach is simple but has the disadvantage of focusing on size rather than economic weight.

A second approach measures the degree of self-containment of travel to work movements within centres in a city region; in other words, reviewing where the commuting patterns are concentrated. We have used this latter, rather than the former, approach to underpin our analysis within this report.

In this interpretation, all the towns and cities within a highly polycentric city region are well connected to one another in terms of commuter flows, with a high proportion of the working population living in one centre and working in another. A weakly polycentric city region would be where there are a number of different economic centres in different towns and cities in the city region, but in labour market terms there are relatively few travel to work movements between them.

In a **monocentric** city region, the travel-to-work movements from the surrounding towns and cities are primarily directed towards the central city. In this context, the central city therefore acts as the main employment centre for the city region. As is shown in our case studies, this picture can be complicated by the nature of administrative boundaries, which do not necessarily match the operation of real economies. A **bi-polar** city region has similar characteristics to a monocentric one, except there are two dominant centres, rather than one (although one tends to be stronger than the other).

5.1 Applying the typologies

Two of the city regions we studied could be characterised as **polycentric**. Leeds City Region with significant employment centres outside the economic centre – Huddersfield in Kirklees, Bradford and Wakefield – has developed a polycentric network of commuting links, with labour and housing markets overlapping.

Liverpool City Region is characterised as having a simple polycentric structure. Liverpool is clearly the largest employment centre within the city region, but this is complemented by high value employment centres in Warrington and Chester, although the labour market links between these two centres and Liverpool are not strong. Leeds has more interdependent and dependent relationships than Liverpool, and fewer places that are isolated, in labour market terms, from the economic centre.⁵¹

51. It is important to note that this may have been affected by the cities and towns we selected in consultation with stakeholders: the results might have been different if we had selected

Two of the city regions we studied could be characterised as **monocentric**. Manchester City Region is strongly monocentric: Manchester is the principal employment centre within the city region and it dominates commuting patterns. The functional economic centre of Manchester City Region is not confined to the administrative boundaries of Manchester City Council; the core of the city region extends into parts of Salford, Trafford and Stockport to form a highly productive economic centre.

Sheffield City Region is weakly monocentric. There are other centres of employment within the city region such as Chesterfield and Doncaster, but these are not as productive as Sheffield and attract far fewer commuters, making Sheffield the principal economic centre of the city region. However, the city region is weakly monocentric because Sheffield does not exert as strong a 'pull' as Manchester. Manchester has more interdependent and dependent relationships with neighbouring towns and cities than Sheffield does with its neighbouring towns and cities.

Within our study the Tyne and Wear City Region is the only city region that could be characterised as **bipolar**. Newcastle remains the economic centre, being the most productive Local Authority area, having the strongest commuting links and being recognised as the administrative centre of the North East. However, Sunderland is also a strong centre of employment with commuting links.

It is important for city regions to consider which typology applies to their distinctive circumstances, as this affects the type of economic relationships within the city region and therefore the policies which could serve to promote development, within the context of these relationships. Understanding the city region typology is also important as it enables city regions to devise policy that responds to the reality of their distinctive circumstances rather than aspiring to be something else. For example, a polycentric or bipolar city region should not simply conclude that it should be seeking to become monocentric as this will not capitalise upon the strengths and circumstances of the different employment centres. Similarly a monocentric city region should not seek to become polycentric as this could undermine the strengths associated with having a dominant economic centre and ignores the reality of commuting patterns.



6. A framework for understanding the economic geography of sectors

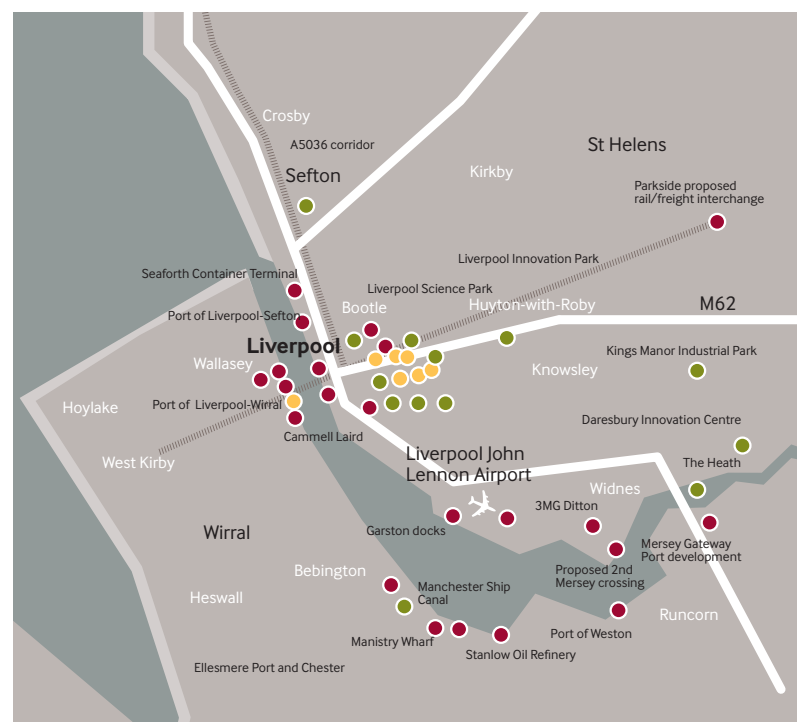
6.1 Insights from the case studies

Interviews conducted in all five case study city regions highlight that firm links have more impact upon economic relationships between places in some sectors than others. Whilst to some extent the economic geography of a sector depends upon the individual characteristics of a city region and its industrial history, a synthesis of all our findings suggests that common themes about the economic geography of different sectors can emerge.

Maritime: Maritime is a sector firmly embedded across the Liverpool City Region and its growth reinforces complementary relationships within the city region. This is because of Liverpool City Region's location, history of maritime and its long-standing investment in infrastructure. The city region also contains a broad range of industrial and service activities, all supporting the creation of a Maritime cluster, and provides access to a skilled labour force. In addition to a low cost base, the economic centre, Liverpool, has a growing international profile. The importance of location and face-to-face proximity is important for this sector.

Creative and Digital: In Liverpool City Region, our interviews suggested that there is a tendency for start-up and growing creative and digital companies to be located in the City Centre. This is because of the importance of face-to-face contact, the attractiveness of the nearby amenities, and also the proximity to the university: the majority of employees in the creative and digital sector are graduates. As digital firms grow, however, they become less tied to Liverpool City Centre and more focused on establishing strong links with competitors / collaborators in London, Manchester and elsewhere. By comparison creative firms retain a preference for a city centre location.

The geography of these sectors in Liverpool City Region is illustrated in the Figure 6.1 below.

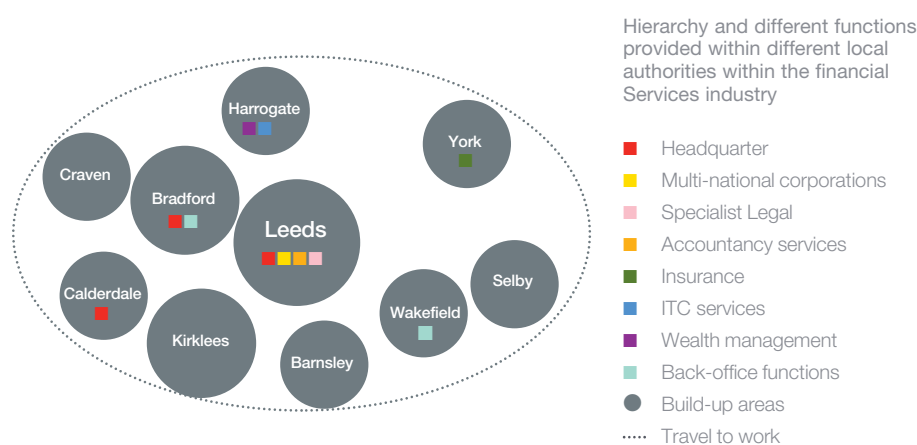


ICT, Digital and Communications: Whilst the pattern for creative and digital industries was relatively clear within the Liverpool City Region, the economic geography of similar sectors was less pronounced in Manchester, Sheffield and Tyne and Wear. Nonetheless, whilst the sectors were at different stages of maturity in all four city regions, common themes did emerge. First, city centres play an important role in attracting ICT and Digital workers, in providing appropriate infrastructure and in creating opportunities for networking.⁵² Second, supply chains do not tend to be local and so the main way in which the sector impacts upon a city region is through its labour markets. Our analysis suggests that policies to develop this sector should consider how to make the most of city centre assets, as well as how to encourage networking within the city region to stimulate innovation.

Financial services: Financial services and associated business services have a clear economic geography across Leeds City Region and the firm links created have reinforced complementary relationships within the city region. Leeds sits at the centre, offering the critical mass to attract multi-national corporations, and specialises in legal and accountancy services which both attracted the sector to the region and provide services for firms in neighbouring areas.⁵³ York specialises in the insurance sector, Harrogate in wealth management and information and communication technology for the sector, Calderdale has HBOS, and Wakefield and Bradford mainly have back office functions, although Bradford is also home to the headquarters of the Yorkshire Building Society. This cluster of complementary firms encourages commuting links between places, provides career development opportunities and capitalises upon the distinctive strengths (cost, amenities, connectivity etc) of different areas within the city region.

The geography of this sector is illustrated in Figure 6.2 below.

Figure 6.2 Economic geography of Leeds City Region Financial Services



Manufacturing: We reviewed the economic geography of manufacturing and advanced manufacturing in Manchester, Sheffield and Tyne and Wear, and again identified some common themes despite the differences between them. First, the supply chains for manufacturing companies tend to be international, and so there is no clear economic geography that emerges for all sub-sectors in this area. Second, where supply chains are more localised, this tends to be because of quality, trust, risk management (e.g. innovative products were identified as preferable to develop



52 Newcastle was the exception in our case studies

53 Henderson, R. (2006)

in collaboration with nearby organisations) or cost. Third, where there was an economic geography for a sub-sector in manufacturing, this tended to be because smaller firms clustered around a significant supplier, for example the aerospace cluster in Blackburn, or because appropriate infrastructure was provided, as in the Advanced Manufacturing Park in Sheffield. Fourth, access to natural resources matter, for example this provided the stimulus to the sub sea and off-shore cluster around the Tyne. Our analysis suggests that policies to develop this sector should focus on sub-sectors rather than manufacturing as a whole, and that it should identify opportunities to link knowledge assets (e.g. universities or specialist institutes) to firms to maximise possibilities for innovation.

Retail: Whilst retail was only studied in the Leeds City Region, the emerging conclusions are likely to be relevant for other city regions. In Leeds City Region, Leeds sits at the top of the retail hierarchy, attracting shoppers from across the city region; followed by York; Bradford; Wakefield; and then Kirklees, Calderdale and Harrogate, which cater more for a local market.⁵⁴ Interviews suggested that this structure is likely to be replicated in other city regions, and that the international and national nature of supply chains is also likely to be similar. The main way in which retail impacts upon economic relationships between places is through labour markets, most of which tend to be local for lower paid jobs (although we are yet to see what impact the recession may have upon commuting patterns in this sector).

6.2 A framework for considering the economic geography of sectors

Our findings demonstrate that some sectors have a clear economic geography, and that understanding more about why this geography has emerged is likely to help policymakers understand firm links in greater detail. One way of reviewing the benefits of locating in a city region for different sectors is by using an analytical framework developed by Duranton and Puga (2004)⁵⁵ and subsequently used in the Manchester Independent Economic Review.

This framework reviews three factors that matter to sectors in their relationship with a location or place:

1. Access to the physical and infrastructural resources present within a place (sharing);
2. Access to the labour force (matching); and
3. Access to opportunities to exchange ideas (learning).

This framework provides a way of thinking about whether it is possible to attract, retain and embed firms in a sector in a particular location. It can also support thinking about strengthening supply chains and networks, as well as analysis about barriers to growth.

This approach is illustrated in the table below, with some examples from different city regions. Our research suggests that using this framework can create a fuller understanding of why firms in different sectors make the choices they do, and why links in some sectors are stronger than in others.

54 Stakeholder interviews

54 Gilles Duranton and Diego Puga (2003) 'Microfoundations of agglomeration economies', available from <http://diegopuga.org/papers/urbanagg.pdf>

Table 6.3

A Framework for considering the economic geography of sectors			
Mechanisms by which firms and workers benefit from increasing economies of scale / sectors in city regions	Sharing	Matching	Learning
Definitions	<p>The capacity of firms or workers to benefit from drawing on a common pool of resources in organising their activities through:</p> <ul style="list-style-type: none"> • Sharing public goods and infrastructure • Sharing a pool of intermediate goods • Multiple firms employing from the same pool of workers (and workers sharing a common pool of firms), reducing the risks to firms and workers (links with 'matching') 	<p>The reduction of searching and matching frictions in the labour market and/or intermediate good suppliers from economic scale that enable benefits both to firms and to workers</p>	<p>Opportunities for people and firms to learn from each other and from the environment around them</p>
Examples	<p>Public goods and infrastructure</p> <ul style="list-style-type: none"> • Shared transport facilities e.g. port or airport (e.g. Maritime Industry – Liverpool City Region) • Shared educational facilities e.g. universities (e.g. Manchester) • Provision of facilities in the area that enable it to attract workers from other areas that lack such provision enabling wages to be lower (e.g. the access to cultural amenities and a high quality natural environment may attract individuals to live in Manchester City Region rather than London) <p>Shared pool of intermediate goods</p> <ul style="list-style-type: none"> • Productivity benefits through an increased variety of producers of intermediate goods, variety of inputs and supply of workers (e.g. Aerospace cluster - Manchester City Region) • Firms and/or workers are able to specialise because there are a large number of firms providing similar services, and so there is room for more 'niche' businesses (e.g. Leeds – financial services) • Firms and workers are better able to share the risks of expansion (pushing up wages/costs) or contraction (loss of jobs) (e.g. Liverpool – maritime industry) 	<ul style="list-style-type: none"> • Reductions in the frictional cost of job searching in a larger labour market (e.g. Maritime Industry – Liverpool City Region) • Better quality matches between workers and employers improving firm productivity (e.g. Digital Industry – Manchester City Region) • Reduction of 'hold-up' problems (i.e. where individuals need to make a relationship specific investment (e.g. in skills), but where contracts are incomplete so that the person that benefits from the investment (e.g. firm) cannot commit to reward the person 	<ul style="list-style-type: none"> • Greater opportunities for face-to-face contact between people and firms to learn from each other • Larger diverse environments may help the process of search and experimentation that underlies much innovation • Physical proximity assists the diffusion of skills • High skill workers benefit from being near other high skill workers and from the consumption opportunities created in larger cities • Diffusion of tacit knowledge is better achieved in proximity • Physical proximity aids the diffusion of accumulation of knowledge over time

7. City region findings

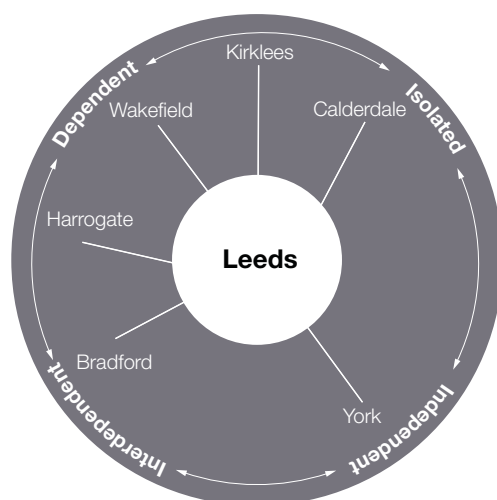
Leeds City Region

Draw of Economic Centre

- Compared to the other city regions in this study **Leeds has a strong draw for residents of neighbouring areas as an economic centre**. With earnings of £461 a week Leeds is, after Manchester, the economic core in this study with the second highest workplace based median weekly earnings in 2008. The importance of Leeds as a centre of employment for the city region shows in its large travel-to-work area extending up to 55 kilometres outwards.
- The Leeds City Region has an **emerging pattern of polycentricity**, with centres of different economic strength surrounding the economic core, ranging from towns such as Harrogate to a regional city such as Bradford. Yet historical relationships remain important, illustrated by the fact that commuting movements between the Local Authority areas within the former West Yorkshire Metropolitan Council are much stronger than between these Councils and North Yorkshire or York.

Labour Market Relationships

Labour market relationships with Leeds vary across the city region, as illustrated in the wheel below.



Firm Relationships

- The **retail sector** is a key employer in the Leeds City Region. The sector is characterised by a clear hierarchy between different economic centres and different areas within the city region complement each other in their offer and target market. Leeds, for example, has the most diverse offer within the city region and caters particularly for the younger age group, while Harrogate specialises in higher-value retail and Wakefield in distribution. Catchment areas differ between centres at different levels within the hierarchy but also between different shops, while supply chains, especially within non-food retailing, are international. Most employees within the sector live locally.
- The **financial services sector** is a key economic driver in the Leeds City Region. The sector is characterised by a clear hierarchy between different Local Authority areas and strong complementarities. Harrogate, for example, specialises in wealth management and ICT for the sector, while York specialises in insurance. While

some areas specialise in certain products (e.g. ICT) or in certain activities (e.g. back office), others attract certain types of businesses due to their specific offer. Financial services companies are embedded to varying degrees within the city region but their market is pan-regional. While many higher earners within the sector live in the North of the city region, most other employees live locally. Career development within the sector tends to follow the spatial hierarchy within the sector, meaning that people may start their career in some of the less specialist centres in the city region and then gradually move around the city region as they advance in their careers, with the highest level jobs tending to be in Leeds itself.

Liverpool City Region

Draw of Economic Centre

- The Liverpool City Region has a **simple polycentric structure**. Liverpool is the main driver and employment centre. Its economy has grown by some 62% in the past 10 years and each day it attracts some 90,000 commuters from across the city region. The other main centres of employment are Warrington and Chester. By contrast, the core of the Liverpool City Region (Liverpool, Wirral, Sefton, Knowsley, St Helens and Halton) is largely monocentric with Liverpool as the dominant centre.
- Liverpool has a **compact travel to work area** compared with the other study areas. This reflects its position on the North West Atlantic Seaboard, the compactness of the surrounding urban area and the fact that Liverpool currently lacks the economic pull of Manchester or Leeds, having lower workplace earnings and relatively fewer knowledge worker employment opportunities.

Labour Market Relationships

Labour market relationships with Liverpool vary across the city region, as illustrated in the wheel below.



Firm Relationships

- The *Maritime* sector is a key sector in the Liverpool City Region, with some 1,700 firms employing around 28,000 employees. It is a diverse sector encompassing port operations (wet and dry docks), shipping services, professional services, distribution/logistics, marine engineering and specialised services. Activities are spread around the city region. Given the historic and strategic importance of the sector to the city region and its locational

advantages, a vision has been developed to integrate all the maritime activities together with airport activities into a single concept, called Liverpool 'SuperPort'. The agglomeration advantages for the sector are: infrastructure investment; location (with shipping access to USA, Ireland and other world markets), rail access to South East ports and road access to a significant population and manufacturing capacity in the North West; established labour market and maritime skills. The sector's growth aids complementary economic relationships across the city region

- *Digital and Creative Industries* is a growing sector with around 6,000 firms that employ around 35,000 people in the city region. Nearly all the firms in this sector are micro or small and medium sized. In this sector the City Centre acts as a 'public good' in providing the location for start-up and growing companies. As they grow, creative companies are more tied to the City Centre because face-to-face contact and the City Centre experience remain important. By contrast digital firms become less tied to Liverpool as they grow and consider their position with regard to competitive markets (primarily in London and secondarily in Manchester). The recent transformation of Liverpool's reputation is of assistance to firms in this sector. They rely almost exclusively on a graduate workforce and have to compete to recruit and then retain staff. A larger pool of labour and of large firms would assist the development of this sector.

Manchester City Region

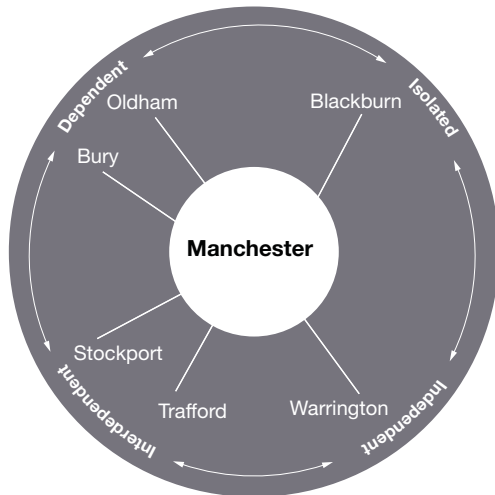
Draw of Economic Centre

Compared to the other city regions in this study **Manchester has a strong draw for residents of neighbouring areas as an economic centre.** Manchester has the highest level of in-commuting of the core cities in the north and its travel-to-work area stretches well beyond its contiguous area into Lancashire, Derbyshire, Merseyside and Cheshire. It has the highest GVA per capita within the city region, accounting for 40% of economic output growth between 1998 and 2008,⁵⁶ and almost 70% of employment is in the knowledge-intensive industries. A significant number of company head quarters are based in the city and it also is the main regional centre for public services.

Within the city region, the Greater Manchester authority areas have the strongest labour market links with Manchester, and most are likely to have dependent or interdependent relationships with Manchester. However the north of the city region, still struggling with economic restructuring, depends on the economic core to a greater extent than authority areas in the south for knowledge-intensive, high value employment.

Labour Market Relationships

Labour market relationships with Manchester vary across the city region, as illustrated in the wheel below.



Firm Relationships

- **ICT Digital/Communications** is a key growth sector within Manchester City Region, experiencing the fastest growth rate of any sector between 1998 and 2003 (10.4% per annum). Within Manchester City Region, employment in the sector is concentrated in Manchester, Stockport, Trafford and Bury. Many companies within the sector are service-orientated and do not have a large number of suppliers, although where specialist suppliers are required the close networks within the sector mean that companies can often identify the appropriate suppliers in relatively close proximity. The importance of face-to-face contact means that many Manchester City Region ICT/Digital firms' clients tend to be local or regionally based. Access to staff with the appropriate skill set is regarded as the most important location factor by many ICT/Digital companies. Many of the staff working for companies in the sector either live locally or within the Manchester City Region. Recruitment difficulties were attributed to the nature and requirements of the industry rather than location.
- The **Advanced Manufacturing** sector has a long history in Manchester City Region but there is no strong pattern of economic geography because of the relatively international nature of supply chains. Advanced manufacturers will procure from the best suppliers, regardless of location and the market for many advanced manufacturers is international. This means that location decisions are less about access to market and more about other factors such as access to labour, intellectual capital and transport. Traditional strengths within MCR mean that there is a ready supply of the relevant experience. Individuals with marketing skills tended to work with headquarters in the south, and this difficulty in recruiting staff was noted as a key challenge for advanced manufacturing companies elsewhere in the city region.

Sheffield City Region

Draw of Economic Centre

- Compared to the other city regions in this study **Sheffield is a relatively self contained city and labour market relationships with neighbours are less strong than for other economic centres.** Sheffield's smaller travel-to-work area is partly a reflection of the strength of its economy and its industrial legacy. 85% of residents live and work in the city taking 72% of jobs (compared to 73% and 31% in Manchester). Despite having less of an economic draw than other economic centres, however, Sheffield has the highest productivity within the city

region and the highest employment in knowledge services – financial and business services in particular. Nonetheless, compared to Manchester and Leeds, Sheffield is relatively public sector dominated.

- In labour market and housing market terms **Sheffield City Region** is a fragmented economy, with Sheffield the strongest economic centre and increasingly interdependent with Rotherham. Sheffield City Region can be characterised as **weakly monocentric**. There are other centres of employment, such as Rotherham and Chesterfield, but these are not as strong as Sheffield. This fragmentation, and the weakness of Sheffield as a centre, means that not all areas in the city region are benefitting from Sheffield's success.

Labour Market Relationships

Labour market relationships with Sheffield vary across the city region, as illustrated in the wheel opposite.



Firm Relationships

- **Advanced Manufacturing and Metals** was historically the vital sector in SCR's economy and it continues to play an important role. Whilst employment levels have declined, productivity has increased because of technological innovation and there are a number of specialist facilities and research institutes dedicated to the sector within the city region. Analysis by Yorkshire Forward showed that the supply chains in the metals sectors are highly contained within the region. Interactions within the sector tend to be on a traded basis rather than non-traded. Manufacturing supply chain interactions are particularly strong between Sheffield and Rotherham, with Rotherham acting as a supplier of inputs into Sheffield. Improving transport links, information and investing in skills could facilitate improved economic relationships across the city region. The embeddedness of the sector provides a strong base on which to build global links.
- Within Sheffield City Region, **computing** is a key growth sector. Whilst the sector does not employ large numbers within the city region, the sector makes a significant contribution to economic output. The majority of employment in the sector, over 45%, is based in Sheffield. As a service-based sector, many companies have a limited number of suppliers, the majority of whom are locally based, for example local printers. Face-to-face contact with clients remains

important for ICT companies. For a number of companies, clients tend to be locally based within South Yorkshire, Nottinghamshire and Derbyshire. The travel-to-work patterns of staff working for ICT companies vary according to the size of the company and where the company is located within the city region. For smaller companies, staff tend to travel less far (maximum of 10 miles) and personal contacts make recruitment easier. Improving information, attracting more large firms to increase career opportunities and identifying opportunities to link to Manchester are ways in which the city region could improve economic relationships across the city region.

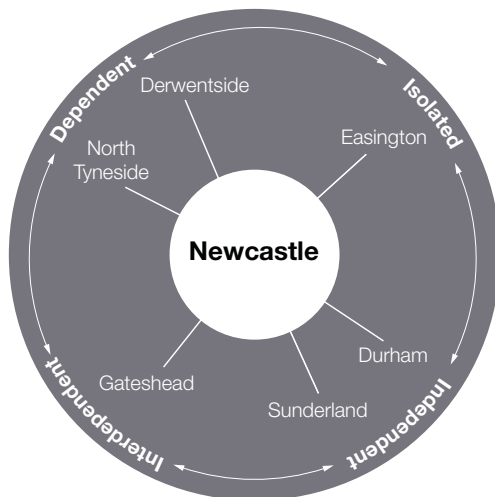
Tyne and Wear City Region

Draw of Economic Centre

- With earnings of £444 a week Newcastle, compared to the other city regions in this study, is the **economic core with the lowest workplace based median weekly earnings** in 2008. However, Newcastle's wages make it an attractive place to work in the context of the city region, where pay in some cases can be up to £80 less per week. This attractiveness as a centre of employment is demonstrated by Newcastle's large travel-to-work area, which extends up to 50 kilometres from the city.
- The Tyne and Wear City Region is a **bipolar city region**, containing two economic centres, Newcastle and Sunderland. However, Newcastle contains the strongest single concentration of economic activity. Economic relationships within the city region are shaped by history. This is illustrated by the fact that commuting movements between Local Authority areas within the former Tyne and Wear Metropolitan Council are much stronger than commuting between these Councils and the former Local Authorities within the newly created Durham or Northumberland Unitary Authorities.

Labour Market Relationships

Labour market relationships with Newcastle vary across the city region, as illustrated in the wheel below.



Firm Relationships

- Although total employment numbers are decreasing within the sector overall, the **manufacturing sector** remains vital to the productivity of the Tyne and Wear City Region. Different manufacturing sub-sectors operate in different areas of the city region. The sub-sea sector clusters around the River Tyne, the automotive industry is located around Washington, Easington and Derwentside and the pharmaceutical industry is located in Cramlington and Durham. Forward linkages to customers as well as backward linkages to suppliers within the sector are very much national and international – but the precise nature of these depends on business size, ownership and degree of specialisation. While most manufacturing employees live relatively locally, those at management level are likely to travel longer distances. Despite differences in wages at the lower end of the labour market between different Local Authority areas, career development does not seem to follow a certain spatial path.
- The **ICT and digital sector** is a relatively young industry within the Tyne and Wear City Region. While employment within the industry varies across Local Authority areas, the majority of businesses are located in out-of-town business parks. The ICT industry is a relatively footloose industry, as it does not have many suppliers in the traditional sense. Client links seem to depend on business size – the bigger a company, the more international its client base. Overall the industry is much less strongly embedded in local supply chains than in some of the other city regions (e.g. Manchester). As with the manufacturing industry, most ICT and digital employees, with the exception of managing directors or company owners, live relatively locally. Due to the size of the sector, career development opportunities within the city region are currently relatively limited. However, this may change in future.

8. Key findings and policy conclusions

8.1 Findings

Our analysis demonstrates that strengthening economic links between places does have the potential to contribute to sustainable economic growth, higher individual prosperity, the attraction and retention of higher skilled workers and the reduction of deprivation. Places such as Stockport, Harrogate, North East Derbyshire and Sefton have all benefited from their links with their economic centres.

However, some places have more complementary economic relationships than other places. Economic disparities are growing where there are less complementary relationships. For example, St. Helens within Liverpool City Region and Easington within Tyne and Wear City Region are places 'isolated' from the economic centre, where productivity growth has fallen behind that in the economic centre and the gap has widened substantially.

The extent to which relationships are complementary is affected by a range of factors, including skills, transport, firm links, the 'pull' of economic centres, industrial history, and quality of place and housing. The wider relationships in a city region – whether it is monocentric, polycentric or bipolar – can also impact upon economic relationships between places.

Skills are particularly important in shaping the relationships between places and the extent to which areas benefit from these relationships. Overall we found that labour market relationships are the strongest indicator of links between places and an economic centre. Many international firms have national or international supply chains and the strongest relationship with a local area is through recruitment of staff. Nonetheless, firm relationships in certain sectors also shape links between places. The framework developed by Duranton and Puga, which can inform understanding of the relationships between industrial sectors and places, helps to identify how firms in different sectors benefit from their location in a city region.

From this analysis it is clear that different places have different economic roles within a city region depending on these factors and the resulting nature of their labour market and firm links. A deeper appreciation of different roles and influencing factors can support policy makers in maximising benefits from city relationships. Promoting growth in the economic core has the potential to benefit other cities and towns of a city region, provided there is investment in links to the economic centre. The way in which cities and towns can benefit from this relationship and link to the economic centre will vary depending on whether their role is dependent, interdependent, independent or isolated, on the type of city region and on the firm links within the city region.

8.2 Policy conclusions

There are a number of conclusions for policy which emerge from this analysis.

National Government:

For National Government it emphasises the importance of an effective city regional infrastructure of economic governance to promote and enable economic growth. The city region pilots in Leeds and Manchester and the proposals in the Local Democracy Economic Development and Construction Bill, such as Local Economic Assessments and Economic Prosperity Boards, will add further instruments to encourage more complementary economic relationships. In particular, this analysis suggests that the Government should:

1. Continue devolution of powers to the city region level where the component Local Authorities can use them to support the development of more complementary economic relationships and more effective policy delivery.
2. Enable flexible models of governance, and collaborative relationships, which can be responsive to the position of city regions given their unique histories, economic characteristics and relationship structures.
3. Prioritise devolution and policy alignment in key areas identified in this report which make a difference, in particular skills and transport, giving city regions capacity and resources to tackle fragmented labour markets and improve performance across their functional economy.

The Northern Way:

The Northern Way has continued to promote the role that city regions can play in achieving regional development objectives and raising growth rates across the North. This analysis highlights the importance of continuing support for the development of effective city regions across the North of England. In particular the analysis suggests that The Northern Way should:

1. continue to develop evidence about the economic relationships between places in the North, and support the development of strengthened economic strategies in the Northern city regions;
2. assess the value of the analytical frameworks developed through this research programme and further develop these frameworks in other city regions;
3. continue to work with the Government and the Northern RDAs to:
 - promote the development of effective city regions in the North and to demonstrate their importance in, and value-added to, economic policy;
 - maximise their effectiveness and potential to make the most efficient use of economic development and regeneration funds.

Regional Development Agencies and Leaders Boards:

Integrated regional strategies, led by the Regional Development Agencies and Regional Leaders Boards, will be an important opportunity to support a more dynamic approach to understanding city region economies and promoting economic development, securing alignment between strategy at different spatial scales. The analysis suggests that RDAs should:

1. Ensure that the Integrated Regional Strategies reflect a dynamic analysis of economic relationships between places within city regions, and that this analysis is extended where appropriate to understand how smaller economic centres link to their neighbours;
2. Work with city regions to strengthen and streamline city regions' networks with businesses in different sectors, increasing the research base available on firm links within city regions and how these might be strengthened to enhance economic links between places.

City regions:

All links matter. City regions can use and build on this research to improve their understanding of the economic performance of local cities and towns, to improve economic opportunities across the city region, and to inform the development of economic evidence and delivery. It suggests that:

1. City region economic strategies should maximise the potential for sustainable economic growth by clearly analysing the structure of the local economy. City regions should support the development of areas with most potential for growth, usually the economic centre, and also invest in building links between the economic centre and neighbouring areas to ensure the benefit from this economic growth across the city region is maximised.
2. City regions should consider the frameworks developed within this research to develop a shared economic strategy. This should reflect the distinctive roles and assets of different places within the city region and the importance of the economic centre to long-term economic growth, and these should be reflected in Local Economic Assessments. There should be alignment between these approaches and the direction of integrated Regional Strategies as they are developed.
3. City regions should consider whether this analysis could support a 'Total Place' approach to economic development and regeneration at a city region level.

