REPORT

Richer Yet Poorer

Economic inequality and polarisation in the North of England

Katie Schmuecker and Jenni Viitanen

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Institute for Public Policy Research
Challenging ideas – Changing policy

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Executive summary

This report explores how patterns of household income and individual pay inequality differ across the Northern regions and the extent to which Northern city-regions are becoming more spatially polarised in terms of household income and segregated in terms of economic inactivity over time. It also considers whether different levels of polarisation correlate to social and community outcomes in city-regions.

It asks these questions specifically about the period of economic growth up to the onset of the recession in 2008. As the economy returns to growth, it is essential we learn the lessons of the last period of growth, although we must also be cognisant of the fact that future growth will come in a different form, as the current government aspires to private sector-led growth, with greater private investment and growing exports.

Growth is a key objective for policymakers in the North of England. But traditional measures of economic performance do not take account of how the proceeds of growth are being shared and whether inequality is rising, let alone how it impacts on wider objectives such as environmental sustainability and social wellbeing.

Overall, levels of household income and individual pay inequality in the North are lower than the UK average, particularly compared to the Greater South East. But between 1998 and 2008 pay inequality increased in the North, in line with wider UK trends. It is fairer up North, but equality is being eroded over time.

This picture of increasing inequality is set against a backdrop of strong economic performance in the North and more widely across the UK. In the decade prior to the recession, economic performance improved – as measured by gross value added (GVA) per head – and the employment rate increased, while unemployment fell.

But not all in the North shared equally in the proceeds of this growth. The highest-earning 20 per cent increased their wages at twice the rate of the bottom 20 per cent. This is in-line with national trends.

Of the Northern regions, the North West has the greatest pay inequality, followed by the North East, with Yorkshire and Humber the most equal in terms of differences between top and bottom earners. The picture is different for household income inequality, where the North East is the most equal Northern region.

Much of the difference in economic inequality across regions can be explained by the distribution of the highest-earning individuals and households with the highest incomes. The North still has a larger proportion of its workforce in low-skilled occupations and a smaller proportion in high-skilled occupations compared to the UK average. But the labour market is changing. Employment in high-skilled occupations and personal services generally grew more quickly in the North than the UK average between 2002 and 2008, while employment in low-skilled occupations and administrative, secretarial and skilled trades generally reduced more quickly. The Northern labour market continues to restructure and become more polarised, and as it does so economic inequality is rising.

The higher proportion of the workforce employed by the public sector in the North may also have a slight 'cushioning' effect on inequality. Evidence suggests the public sector tends to boost pay at the bottom of the labour market and dampen pay for some in senior and managerial roles. However, given that over 75 per cent of the workforce is employed in the private sector, pay and reward mechanisms here are more likely to be influential.

Indeed, the performance of the private sector is a key concern. In sectors like 'financial intermediation' and 'other services', productivity per employee in the North is about two-thirds of the UK average. Some of this can be explained by different types of activity within a sector being concentrated in different parts of the country, but it is also likely to suggest lower levels of productivity, which in turn is likely to be linked to lower wages. Economic growth and tackling inequality can go hand-in-hand by seeking to increase productivity in those lagging sectors that are also large employers, as boosting productivity here should also result in increased wages.

Responsibility for economic growth and development is increasingly found at the city-regional level. City-regions roughly correspond to 'functional economic areas', which constitute the areas across which the real economy functions, as defined by labour markets, housing markets and markets for goods and services. So far, five of the eight Local Enterprise Partnerships (LEPs) that have been formed in the North to drive economic growth reflect city-regional boundaries.

As city-regions have been the engines of growth in recent years, we sought to analyse how the proceeds of that growth have been shared by looking at economic inequality within city-regions. Due to data limitations, we were not able to use individual pay and individual household income data within city-regions. Instead, we looked at two spatial measures of inequality: the spatial segregation of economically inactive residents, using key benefit claimants as a proxy, and the degree of polarisation between neighbourhoods based on average household incomes.

Overall, those claiming benefits became more segregated and increasingly concentrated in certain neighbourhoods during the years of economic growth. The results show variation between the city-regions, with Tees Valley, Hull and Humber Ports, and Central Lancashire the most segregated, while Sheffield, Tyne and Wear and Manchester are the least segregated.

Polarisation – the extent to which people with high and low household incomes are concentrated in different areas– was assessed using the standard deviation from the mean household income at ward level. Leeds is the most polarised city-region, followed by Tees Valley and Manchester. Liverpool, Tyne and Wear and Central Lancashire city-regions are the least polarised.

Variations in polarisation and segregation are most likely to result from the process of residential sorting, whereby differences in income and wealth are filtered through the housing market via differences in house prices, rents and tenure.

To consider the impact of different rates of inequality, we tested correlations between the level of polarisation in a city-region and various social outcomes. Most of the variables tested, including educational attainment, teenage pregnancy, premature mortality and business start-ups, returned a weak or no relationship. The results do however indicate a correlation between greater polarisation and weaker community cohesion and a weaker sense of belonging. They may also signal a correlation between greater polarisation and higher burglary rates. However, all these results must be treated with caution, owing to the small number of observations involved. Nonetheless, these correlations tentatively indicate that the social fabric of communities appears to be weaker where inequality is greater.

This is a concerning finding, as other ippr north research finds that the strength of an area's social fabric is an important factor influencing improvement in deprived neighbourhoods (ippr north 2010).

As the UK economy returns to growth, it is the right time to reflect on lessons to be learnt from the past. If we are to rely more on private sector-led growth in the future, there is a risk that the trend to increasing economic inequality we identify here will continue unabated unless there is an adequate policy response.

The challenge for policymakers is how to grow the economy while addressing the negative trend of increasing inequality in order to tackle the inherent unfairness of the historic North–South divide in economic performance.

The answer lies in developing a meaningful and operational concept of 'good growth' that balances economic objectives with social and environmental ones. In this sense, the Coalition government is right to give serious consideration to how we can measure wellbeing. Relying solely on economic indicators such as GVA will only give a partial picture, hiding trends such as spatially concentrated inequality.

While many of the major policy levers to tackle inequality lie with central government – such as tax and benefit policy and decisions about the minimum wage – we set out five recommendations for what should happen at the sub-national level:

1. **Local Enterprise Partnerships should prioritise 'good growth' for their area**
   LEPs in the North of England have the opportunity to show clear leadership and local distinctiveness in relation to economic development. While GVA and employment will remain key indicators, the benefits of social and environmental wellbeing should be recognised. Those wishing to promote greater economic equality should:
   - Build capacity to monitor changing levels of inequality and segregation in the city-region. This should specifically include the spatial aspects of inequality.

- Work together to develop a 'good growth' model that can be used to predict the likely impact of economic changes on inequality (and other economic, social and environmental objectives).
- Boost wages among the lowest paid by calculating the Living Wage (the minimum hourly wage necessary to meet essential needs) for their area and promoting its uptake. LEPs can learn from the Greater London Authority, which annually calculates a living wage for London and promotes its uptake through its supply chain and among other employers in London.

2. **LEPs should develop sector strategies, prioritising those sectors that lag in productivity and are also large employers**

   There is often a temptation in economic development to focus primarily on growing new businesses – however, LEPs should also prioritise improvement within the existing local stock of businesses. LEPs should identify which sectors are lagging in terms of productivity – especially where they are significant employers – and work with them to boost productivity and thereby boost private sector-led economic growth. Boosting productivity in these sectors should also have a knock-on effect on wage levels. Economic growth and tackling inequality can go hand-in-hand.

3. **Voluntary pay ratios could act as a check on pay inequality**

   The question of what is an acceptable ratio between the highest and lowest paid in an organisation has generated considerable debate recently, focused particularly on the public sector. However, as the majority of people are employed in the private sector pay ratios here may be more important. LEPs should invite local employers to sign up to a voluntary pay ratio scheme, cementing a commitment to pay ratios as a check on future pay inequality. Introducing such a scheme while pay gaps remain narrower is more viable than waiting until pay inequality becomes greater.

4. **Continue to focus on improving incomes for the most disadvantaged in society**

   Improving incomes among the most disadvantaged has a key part to play in reducing economic inequality. Moving from welfare into work remains for many the surest route out of disadvantage. The operation of the government's new Work Programme will therefore be critical to achieving this aim, and LEPs should be responsible for co-commissioning the Work Programme to ensure it is tailored to suit local needs and local labour market conditions.

5. **Local authorities should have greater financial powers to enable them to shape their areas**

   The availability of housing and the distribution of different tenures influence spatial patterns of inequality. Local authorities, through their place-shaping role, should be able to tackle issues such as affordable housing or physical regeneration in order to address issues of segregation and polarisation in their area. While tax increment finance initiatives and the relocalisation of business rates would be useful first steps, real progress requires the granting of wider financial powers, to enable funds to be raised – for example through property or income taxes, greater borrowing powers or bonds – to finance major priorities.

1. Introduction

This report explores how patterns of economic inequality differ across the Northern regions and city-regions and the extent to which they are becoming more spatially polarised or segregated over time. It also considers whether different levels of economic inequality correlate to social and community outcomes in city-regions. It asks these questions specifically about the period of economic growth up to the onset of the recession in 2008.

Growth is a key objective for policymakers in the North of England, given that the area has lagged economically for decades. In the period prior to the 2008 recession, the North enjoyed uninterrupted economic growth for a number of years. This research considers how the proceeds of that growth have been shared by considering what has happened to economic inequality in the North over the same period, and what the effects of this might be. By seeking to understand these lessons we hope to provide valuable insights for policymakers as the North returns to growth. However we must be cognisant of the fact that future growth come in a different form, as the current government aspires to private sector-led growth with greater private investment and growing exports. The role of the private sector in creating jobs and promoting fair reward mechanisms will therefore be at the forefront of economic change.

Inequality in national debates

The effect of economic inequality has become a feature of contemporary policy debate, although how this is interpreted differs. The Coalition government has argued that a 'new progressive' agenda is needed which focuses on social mobility as the key measure of inequality rather than differences in income. The new leader of the Labour Party, Ed Miliband, has taken a different view, highlighting income inequality as a key concern: 'The gap between rich and poor does matter and it doesn't just harm the poor, it harms all of us' (Miliband 2010).

The previous government set up the National Equality Panel (NEP) in 2008, whose final report *An Anatomy of Economic Inequality in the UK* (NEP/LSE 2010) shows how inequality is cumulative over an individual's lifetime and is carried from one generation to the next. The NEP concludes that it is increasingly difficult – if not impossible – to create a cohesive society when inequalities are as great as they currently are in the UK. The report states that: 'Wide inequalities erode the bonds of common citizenship and recognition of human dignity across economic divides' (ibid: 3).

While the negative effects on an individual's life chances of growing up in poverty and disadvantage have long been established, recent research has highlighted the negative effect of inequality on all in society, not just those at the bottom. *The Spirit Level* by Kate Pickett and Richard Wilkinson (2009) argues that more equal societies are, overall, happier and healthier across the board. Their central thesis is that everyone, including the rich, is worse off in more unequal societies. They point to correlations between greater income inequality and a range of negative social outcomes including violent crime, low educational attainment, mental illness, teenage pregnancy, obesity, the level of trust in society and social mobility.

The Spirit Level has attracted a number of critics who argue that the analysis uses extreme cases and outliers (Saunders 2010) or that it has not sufficiently controlled for other possible confounding variables in exploring the bivariate relationships between income inequality and social outcomes (Goldthorpe 2010).

Nonetheless, Pickett and Wilkinson's findings raise some challenging questions for how we think about economic growth, as focusing only on traditional economic measures such as gross domestic product (GDP) or gross value added (GVA) does not take account of how the proceeds of growth are being shared and whether inequality is rising.

Growth and wellbeing

Traditionally, policymakers in the UK have used narrow measures of GDP and GVA to assess economic progress. While these are useful for assessing increases in national income and economic growth, they offer a limited view of progress. First, measuring only economic growth takes no account of the environmental costs of growth, a shortcoming that must be addressed in light of the challenges of climate change. Second, it offers no assessment of the social impact of growth and how the proceeds of growth have been shared.

Traditional economics assumes economic progress will 'trickle down' and benefit wider society. But evidence shows that, in the past, the rising tide of economic growth did not lift all boats (ippr north 2010) and the distribution of the proceeds of growth will not be equal across groups and places. Furthermore, the link between economic and social wellbeing is not straightforward, and research suggests that improvement in wellbeing has not kept pace with economic growth, reaching a plateau after a certain level of economic prosperity has been reached (Stiglitz et al 2009). The UK government has recognised the validity of these arguments and asked the Office of National Statistics (ONS) to devise a practical measure of wellbeing (ONS 2010).

About this report

This research contributes to the inequality debate by asking whether the North of England became more or less equal during the decade of economic growth up until the recession hit in 2008. It considers the relationship between income inequality, geographical polarisation and social outcomes in the Northern city-regions.

The socioeconomic divide between the North and South of England has been discussed widely in regional development literature. The divide has been attributed not only to restructuring in the economy since the 1960s but also to inadequate measures by successive governments to tackle the problem of regional disparity (see for example Martin 1988, Adams et al 2003). Nonetheless, prior to the recession the North experienced steady economic growth, and the question posed by this report is how the proceeds of that growth have been shared, and whether it is *fair up north*.

The report is divided into five main sections.

- **Background and methodology** summarises the policy-relevant developments in sub-national and sub-regional approaches to economic development, with a focus on city-regions. It sets out the research questions addressed and the rationale for looking at these questions from a city-regional perspective.
- **Spatial economics in the North** looks at the economic geography of the UK, focusing particularly on the North of England. It also analyses income and pay inequality in English regions, and possible reasons for this variation. It questions whether purely economic measures, such as GVA, provide a sufficient measure of improvement.
- **Segregation and polarisation** takes the analysis a stage further by considering the spatial distribution of inequality within the city-regions of the North, using two different metrics of spatial inequality.
- **Polarisation and social outcomes** explores the strength of the relationship between income inequality and a number of social outcomes at the city-regional level.
- **Conclusions and recommendations** sums up the evidence presented throughout this report, and makes recommendations for national and sub-regional economic policy with a view to limiting segregation and polarisation.

This work contributes to ippr north's wider research portfolio which focuses on overcoming poverty and inequality, and complements our recent report *Rebalancing Local Economies – widening economic opportunities for people in deprived communities* (ippr north 2010) which provides an holistic and in-depth approach to understanding the determinants of socioeconomic improvement through a series of case studies in three Northern city-regions.

2. Background and methodology

This research is timely, given the recent publication of the Local Growth white paper and the Coalition government's plans for deficit reduction and a return to economic growth. Their stated aspiration is to 'rebalance the economy', so it is less reliant on the public sector, the Greater South East of England and a small number of sectors of the economy (BIS 2010a).

Local Enterprise Partnerships (LEPs) are being formed by local authorities and businesses in England in order to set the economic vision for their area and to put in place strategies to grow the private sector. However, the resources available to LEPs are limited to what their partners are willing to contribute, whether they are successful in bidding for a slice of the £1.4 billion Regional Growth Fund (RGF) and any private sector investment they are able to leverage as a result. The RGF will favour places with high public sector employment and projects with economic growth potential (BIS 2010a). However, in light of the public sector cuts which are set to disproportionately affect the North (Cox and Schmuecker 2010a), concern has been expressed about whether the resources available are adequate. Nonetheless, the policy emphasis is on economic growth in the private sector.

Given the emphasis on growth, this report offers an analysis of how the proceeds of growth were shared in the period prior to the recession, focusing particularly on the North of England.

We look both at overall levels of economic inequality and the spatial distribution of inequality. Inequality finds spatial expression primarily as the result of differences in income and wealth being filtered through the housing market, leading to residential segregation as a result of differences in house prices, rents and tenure (Green and Hasluck 2009, Bennett 2007, Adams 2005). This is known as 'residential sorting'.

The provision of social housing contributes to segregation, as it is typically clustered in particular neighbourhoods and estates. The rationed nature of social housing results in a corresponding concentration of people with the deepest social and economic problems (Hills 2007; Robson et al 2009). But while it is well-established that poverty 'sticks' to places, there is disagreement about whether *places* should be the focus of policy action. The evidence suggests that places – as well as people – do matter, and that concentrating wealthy people in some areas and disadvantaged people in others has a number of negative consequences (see Box 1.1).

Box 2.1: The neighbourhood effect

Whether or not inequality and polarisation between neighbourhoods matters is the subject of considerable academic debate. A key area for contention is whether there is a 'neighbourhood effect' on people's life chances – that is, an independent and additional negative effect, above and beyond an individual's personal characteristics. A number of studies argue that there is not and that policies should target individuals, not the areas they live in (Cheshire 2007, Overman 2010). On the other side, proponents of the neighbourhood effect argue that the concentration of disadvantage in a locality 'gives rise to externalities with an additional effect on the opportunities, behaviour and wellbeing of (some or all of) the local population' (Buck 2001: 2252).

Evidence from the most rigorous studies suggests varying strength of neighbourhood effects depending on the outcome being considered. For example, studies have found evidence of a weak independent neighbourhood effect on employment rates, a moderate effect on education and a stronger effect on crime (see for example Ellen and Turner 1997, Buck 2001, Gibbons et al 2005). Evidence also suggests that people living in deprived neighbourhoods have poorer access to goods and services, resulting in additional disadvantage (Bennett 2008, Cuy et al 2004). Our own research finds that places as well as people matter, as the geographic location and 'community outlook' of deprived neighbourhoods influences neighbourhood improvement, alongside employment and housing issues (ippr north 2010).

This report considers how inequality, and in particular spatial polarisation, has changed during a period of economic growth. It uses four metrics to consider changes to inequality and polarisation:

- **Income inequality:** the gap between the rich and the poor in terms of household income. In this report, it is presented as the difference between the top and bottom 20 per cent of households.
- **Pay inequality:** the gap between the rich and the poor in terms of wages. In this report, it is presented as the difference between the top and bottom 20 per cent of earners.
- **Polarisation:** a spatial measure of income inequality, looking at the spatial distribution of people on high and low incomes to assess differences in income between neighbourhoods. This is a measure of inequality between places, rather than people.
- **Segregation:** also a spatial measure, segregation considers the extent to which benefit claimants are clustered geographically.

The report focuses particularly on the city-regions of the North of England, as they have been the key drivers of economic growth in recent decades. City-regions refer to the economic footprint of an area, usually identified through a relatively self-contained labour market. The city-region is therefore an appropriate lens through which to consider how the proceeds of economic growth have been shared, with inequality and spatial polarisation changing as a result. The next section briefly reviews recent debates about economic development and city-regions.

2.1: Why look at city-regions?

City-regions have been the focus of economic development policy for a number of years (see HMT, BERR and CLG 2007, BIS 2010b). City-regions are the nearest administrative approximation we have to a 'functional economic area' (see CLG, 2010) or the 'natural footprint' of an economy.

'A city-region is the economic footprint of a city – the area over which key economic markets (such as labour measured by travel to work areas; housing markets and leisure/retail markets) operate. City-regions include the whole area from which the core urban area draws people for work and services. A city region can change over time as economic geographies shift." (Williams et al 2006: 7)

It is at this level that agglomeration is thought to occur, which in simple terms relies on the idea that larger markets attract firms and economic activity because there are external benefits from co-location.

City-regions generally cross administrative boundaries and are comprised of a number of neighbouring local authority areas. In recent years, a number of policy tools have been designed to enable cross-boundary cooperation at the city-regional level, from multi-area agreements (MAAs) and statutory city-regions[1] under the Labour government to the new Local Economic Partnerships (LEPs) under the current government.

Considering the whole city-region – rather than just the individual local authority areas that comprise it – should result in more efficient and effective policy for economic growth. Considering the implications of economic growth at this scale also makes sense, as the city-region generally represents a relatively self-contained labour market area, meaning most of those benefiting (or not) from the local labour market are included in the analysis.

As well as city-regions, this study refers where appropriate to the three Northern regions of England. While many regional institutions are in the process of being dismantled, sub-regional analysis is often hindered by the lack of robust data available, meaning the regional level is sometime the more appropriate scale for analysis.

2.2: The scope and methods of this research

The key research questions addressed in report are:

- How do patterns of economic inequality differ across the Northern regions and city-regions?
- Are the Northern regions and city-regions becoming more polarised and/or segregated over time?

1 MAAs were voluntary agreements between local public and private sector partners to coordinate action across a wide range of policy interventions covering a functional economic area. MAAs were intended to boost economic growth, tackle deprivation and financial inequalities across traditional administrative boundaries (CLG 2008). From the 15 MAAs in England, two statutory city-regional pilots in Leeds and Manchester were announced in conjunction with the 2009 budget to drive forward deeper partnerships at the city-regional level (HM Treasury 2009).

- Do different levels of economic inequality correlate to differing social and community outcomes at city-regional level?

To answer these questions we analyse publicly available statistics to look at differences in inequality and polarisation both *between* and *within* the regions and city-regions.[2] National averages are provided where appropriate for benchmarking. The analysis covers mainly the period 1998–2008, subject to some fluctuations based on the availability of data. We focus on this period partly as a result of the limitations of data availability but also because this 10-year period was one of sustained economic growth in the North and nationally.

We do not include analysis beyond 2008 due to the fundamental change in the dynamics of the economy during and after the recession. By considering how the proceeds of growth were shared during this period, we hope to learn some lessons that can inform the approach of policymakers as the UK economy returns to growth.

As well as describing the changes to inequality, polarisation and segregation during this period, we also explore the relationship between polarisation and social outcomes in the city-regions, by testing for statistical correlations (see Technical Annex). This analysis not only confirms that measuring geographic polarisation as well as income inequality is worthwhile, it also suggests a correlation between greater inequality and polarisation and some social outcomes.

The data presented in this report focuses either on the regional or the city-regional level. To construct the data for the city-regions we aggregated data for their constituent local authorities (see Box 2.2). The city-regional boundaries were determined using those that the MAAs were based on – so far, the geography of new LEPs corresponds to that of the MAAs. Box 2.2 lists the local authority areas that comprise each city-region.

Box 2.2: Geography of the Northern city-regions

North East

Tyne and Wear: Blyth, Castle Morpeth, Chester-le-Street, Derwentside, Durham City, Easington, Gateshead, Newcastle, North Tyneside, South Tyneside, Sunderland, Tynedale and Wansbeck.
(Note: Since the creation of the MAA, Durham and Northumberland have become unitary authorities. See Technical Annex for how these boundaries were treated in the analysis.)

Tees Valley: Darlington, Hartlepool, Middlesbrough, Redcar and Cleveland, and Stockton-on-Tees.

North West

Liverpool: Halton, Knowsley, Liverpool, Sefton, St Helens and Wirral.

Greater Manchester: Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan.

Central Lancashire: Blackburn, Blackpool, Burnley, Chorley, Fylde, Hyndburn, Lancaster, Pendle, Preston, Ribble Valley, South Ribble, Rossendale, West Lancashire and Wyre.

Yorkshire and Humber

Sheffield: Barnsley, Bassetlaw, Bolsover, Chesterfield, Derbyshire Dales Doncaster, North East Derbyshire, Rotherham and Sheffield.

Leeds: Barnsley, Bradford, Calderdale, Craven Harrogate, Kirklees, Leeds, Selby, Wakefield and York.

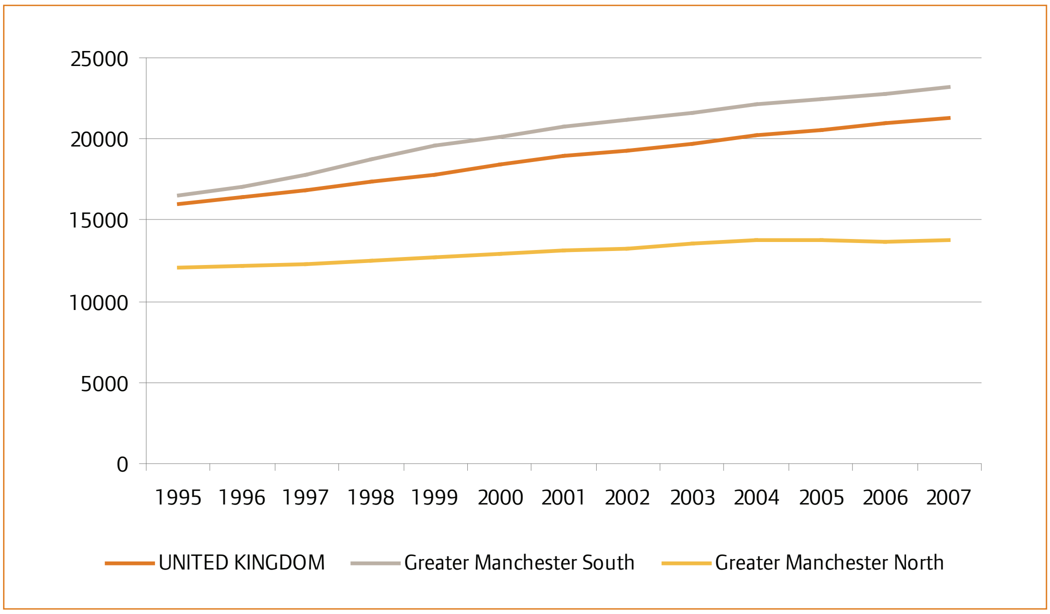
Hull and Humber Ports: East Riding of Yorkshire, Kingston upon Hull, North Lincolnshire and North East Lincolnshire.

2 Data is derived from a range of sources including the Office of National Statistics (ONS), NOMIS (labour market statistics provided by ONS) and the Annual Population Survey.

2.3: The importance of scale within spatial economics

Cities have been described as 'engines of growth' and key to the continued productivity of the national economy. However, the distribution of growth within the 'functional economic areas' can vary remarkably. Such unevenness can occur in small pockets of economic inactivity or on a larger scale, as epitomised by Greater Manchester's South having nearly twice as much economic activity per capita (surpassing the national average) as the more deprived North (see Figure 1.1). Clearly, where boundaries are drawn and the scale at which analysis is carried out can have significant implications for the outcomes of the analysis,[3] as looking at Greater Manchester as a whole will give a different picture to looking just at Manchester North.

Figure 2.1
GVA per head in Greater Manchester, North and South



Source: ONS, 2009 prices

In acknowledgment of this problem, this research looks at how the proceeds of growth in the North have been distributed at a variety of spatial scales, from the region to the sub-local authority level.[4] However, it should also be noted that many national statistics are based on samples, and therefore the disaggregation of that data and its application to a smaller scale is less reliable. For some datasets the region is the smallest scale at which the data is robust. This hinders city-regional analysis and remains a problem for sub-national economic development work.

3 The term 'modifiable areal unit problem' (MAUP) was coined by Openshaw and Taylor (1979; see also Openshaw 1984). Ratcliffe et al (1999) explain that when data are aggregated to areal, or geographic, boundaries which are modifiable, it is possible that the result of any analysis is determined to some extent by the shape of the boundaries used.

4 This analysis uses data down to the Middle Super Output Area (MSOA), which is roughly equivalent to a ward.

3. Spatial economics and income inequality in the English regions

This section considers how economic growth has been shared between and within the regions of England. It provides an overview of the regional dynamics of growth and economic activity, beginning by focusing on the popular indicator of economic health, gross value added (GVA). This was the key measure of economic performance under the previous government, and remains a key objective for the LEPs formed so far in the North. The section also charts changing employment and unemployment rates in the period prior to the recession beginning in 2008.

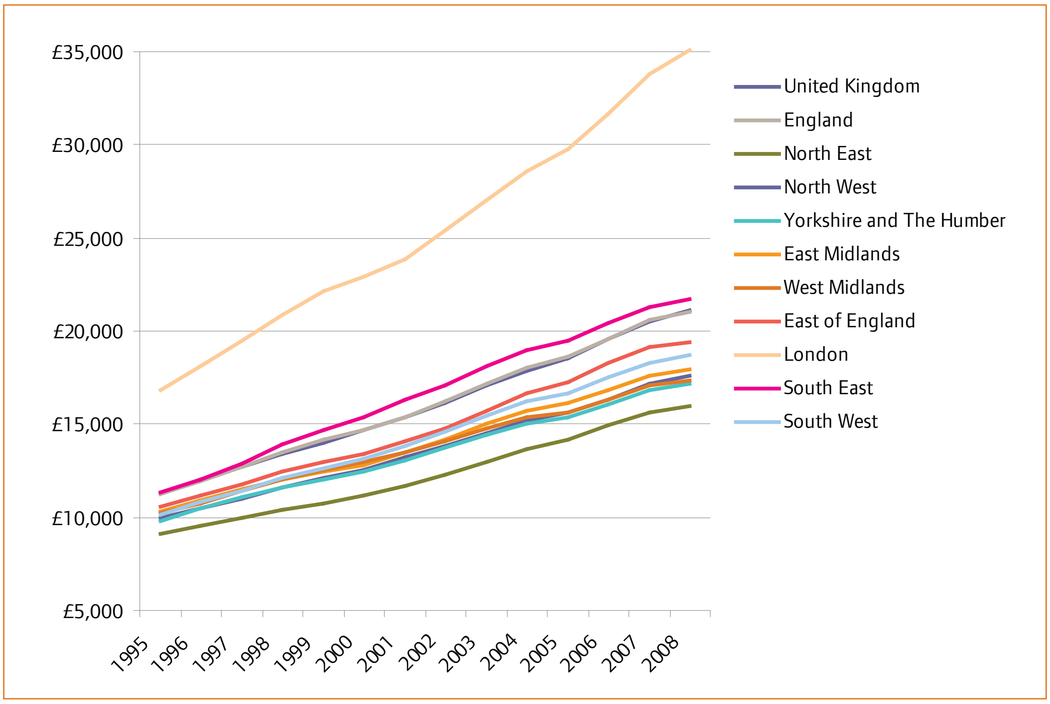
It also questions whether these economic measures alone provide an adequate measure of progress. We analyse levels of income inequality and pay inequality across England in order to reveal the wider effects of the economic growth that was experienced prior to the recession. This analysis is provided at the regional level as the data is more robust at this level. Possible reasons for differences are explored.

3.1: 'Good times' – economic growth and falling unemployment

The UK, including the North, experienced an economically prosperous time up to the onset of recession in 2008. During this time, GVA per capita was steadily rising and unemployment fell, as depicted in Figures 3.1 and 3.2 below.

Figure 3.1 shows the rising level of GVA per capita in the Northern regions, albeit trailing behind the UK average.

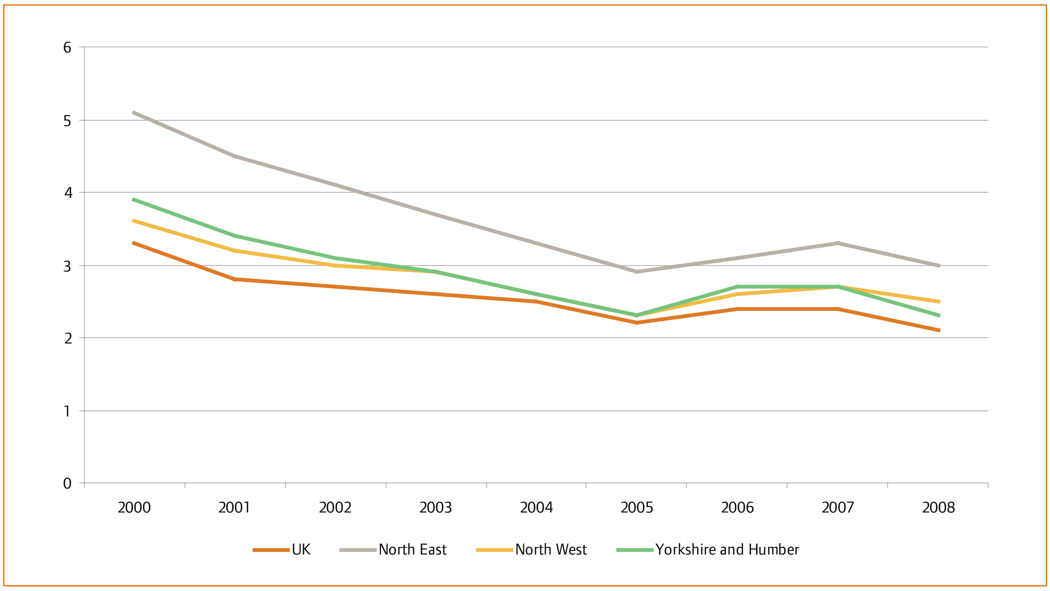
Figure 3.1:
GVA per capita, 1995–2008



Source: ONS, 2009 prices

Figure 3.2 depicts the overall declining trend in Job Seekers Allowance (JSA) claimants in the Northern regions. Since 2008, the recession has had an impact of the level of unemployment as well as GVA growth.

Figure 3.2
JSA claimant count rate, 2000–08



Source: NOMIS

While the overall economic picture was positive, Figures 3.1 and 3.2 also demonstrate that the North still lagged in terms of GVA per capita and JSA claimants. Furthermore, it is useful to bear in mind that healthy GVA figures are not indicative of wages earned or the overall wealth or wellbeing in an area. The limitations of GVA are discussed in Box 3.1 below.

The gap in employment and unemployment rates between the North and the UK average did begin to close over this pre-recession period. Recent figures published by BIS (2010b) show that the gap in employment rates between local authorities decreased steadily from 2004 (the earliest data available) until increasing again at the start of the recession in 2008. Similarly, as Figure 3.2 shows, unemployment rates have also converged. This convergence is largely due to the fact that areas starting from a low base, including key growth centres in the Northern city-regions, have seen some of the fastest improvement in employment rates (BIS 2010b).

Box 3.1: What does GVA measure?

Gross Value Added is a measure of growth. Based on internationally harmonised standards, it is used in the estimation of gross domestic product (GDP), and can be estimated at sub-national scales, using the NUTS geographies. GVA measures the difference between the value of goods and services produced and the cost of raw materials and other inputs used up in production (ONS 2009). In other words, GVA is the value of output less the value of intermediate consumption: it is a measure of the contribution to GDP made by an individual producer, industry or sector.

It is important to note that GVA is not a measure of wellbeing or wealth, nor does it indicate the level of earnings by residents in a region. Particularly when studying local economies, GVA should be treated with caution. The estimates used for GVA figures are partly based on sample surveys and the reliability of the results therefore reduces when applied to a smaller geography (Dunnel 2009). Nonetheless, the UK government contends that GVA remains the most useful metric as it encompasses both productivity and employment effects (BIS 2010b).

Summary:

- The economy grew in each of the English regions over the monitoring period.
- The GVA per head gap between the Northern regions and the UK average grew as national growth figures were boosted by growth hot spots mainly in the South.

- Unemployment fell and the Northern regions did start to close the gap with the UK average in terms of the JSA claimant count both at regional and local authority levels, until the recession in 2008.

3.2: Income inequality

Over the period of economic growth, income inequality increased in the UK. Income differences can stem from a variety of factors, including skills, but also the type of jobs available and the reward mechanisms in place in the labour market (Devroye and Freeman 2002). The fairness of these reward mechanisms has been subject to much recent public debate in the UK, particularly since the 'credit crunch' in 2008, with excessive bankers' bonuses rewarding risk-taking for short-term gain sitting squarely in the media spotlight. Since the 2010 general election, public sector salaries have also been under increasing scrutiny. Will Hutton was appointed by the Prime Minister to lead an independent review of fair pay in the public sector, with the aim of making recommendations to ensure no public sector manager can earn more than 20 times more than the lowest-paid person in the organisation (HM Treasury 2010).

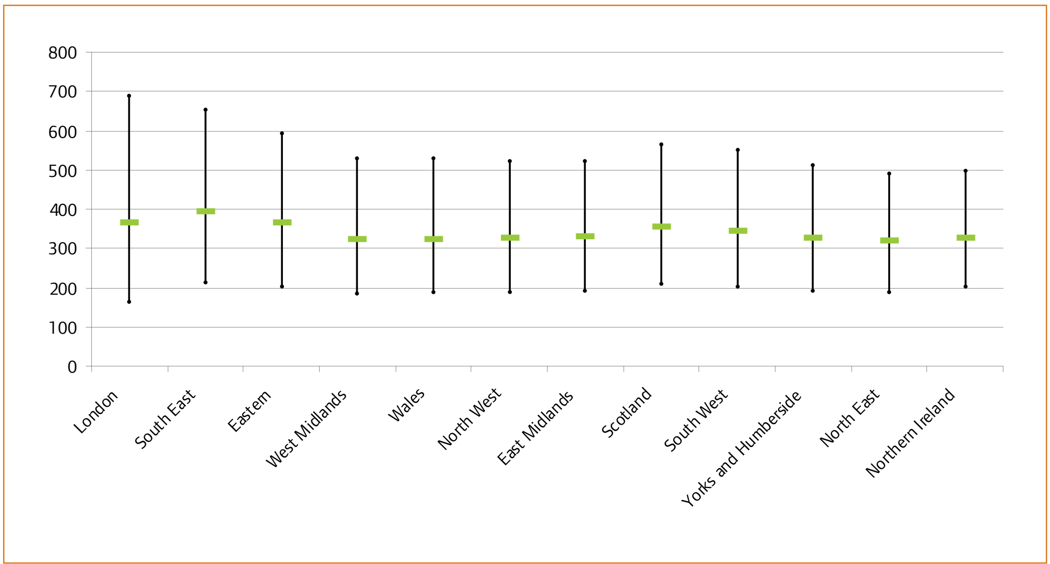
In this section, we present an analysis of average household income per week (adjusted for inflation) and wages in order to assess levels of inequality in different parts of Britain, and changes to inequality over time.

Figure 3.3 provides details of average household income across the UK averaged over the three years 2006–09. The green boxes on the graph represent median weekly income; the black dots represent the top and bottom 20 per cent of earners (80th and 20th percentiles). This chart shows considerable variation in the incomes of the top 20 per cent between regions; the variation for the bottom 20 per cent is much less.

It is clear that London is an exceptional case, with disproportionately high levels of inequality and a higher median income level. However, the South East and East of England also have higher levels of income inequality and higher median income compared to the other nations and regions. In 2006–09, the Greater South East was more unequal compared to other parts of the UK but as a result of the higher number of high earners found in these areas, rather than variation among low earners.

This chart is also a stark reminder of the fact that the presence or absence of highly paid individuals in a region has no impact for those towards the bottom of the distribution.

Figure 3.3
Distribution of household income, 2006–09 (£ per week)



Derived from 'Households below average income' dataset

Figures 3.4, 3.5 and 3.6 look in closer detail at pay inequality. Figure 3.4 shows the rate of pay at the median and 20th and 80th percentiles for each region of England.[5] The blue bars show the figures for 1998; the red bars indicate the increase between 1998 and 2006. Across England, there is wide variation at the 80th percentile but much less variation at the 20th percentile. Median pay

5 As is standard practice, the data compares male fulltime workers to compare labour markets, data for which might otherwise be skewed by different tendencies for part-time employment and the labour market participation of females.

and pay at the 80th percentile are highest in the Greater South East (London, South East, and East of England). The North West commands the highest salaries amongst the Northern regions, higher also than the Midlands. As with income inequality, the Greater South East stands out as the most unequal area in terms of pay.

Figure 3.4
Median pay and pay at the 20th and 80th percentile, 1998 and 2006 (£ per week)

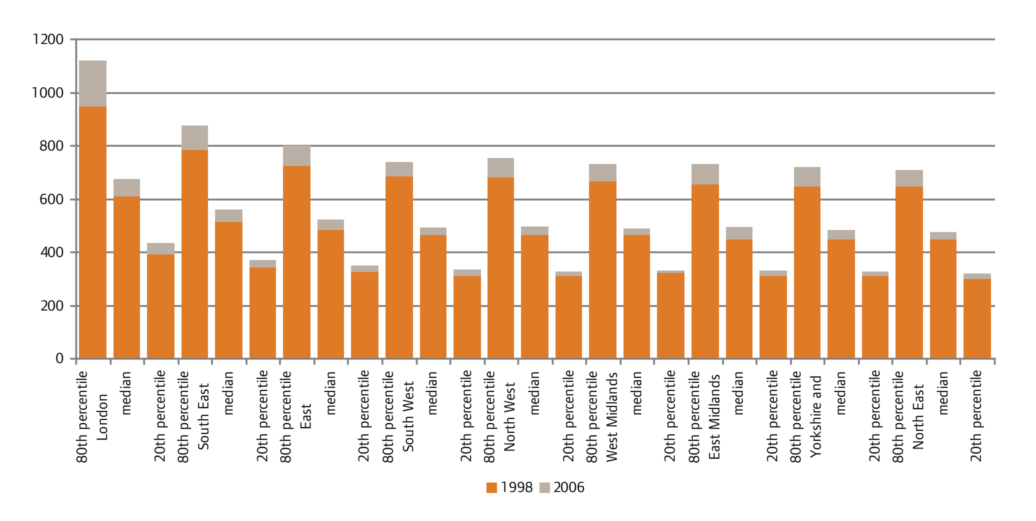
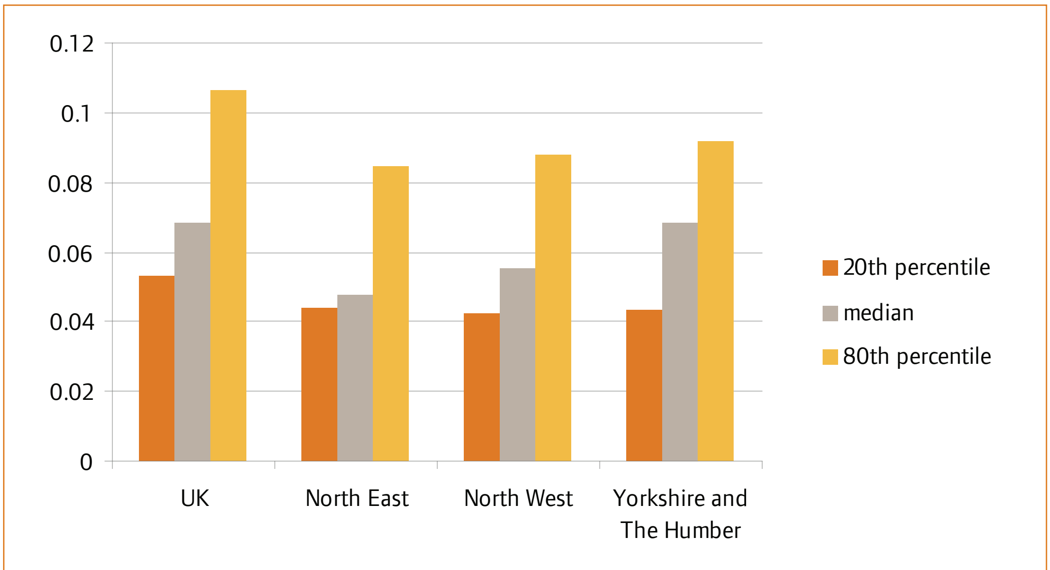


Figure 3.5 focuses in on the three Northern regions, looking at changes in average earnings between 1998 and 2006. The analysis looks at the percentage change for the median, 20th percentile and 80th percentile, compared to the UK average. This analysis should be seen against a backdrop of economic growth across the board.

Figure 3.5
Percentage change in earnings, 1998–2006



Source: Annual Survey of Hours and Earnings, ONS[6]

All three groups in the Northern regions have seen increases in earnings, but at a noticeably lower rate than the national benchmark, which is approximately 11 per cent at the top, 7 per cent for median earners and just over 5 per cent for the lowest earners.

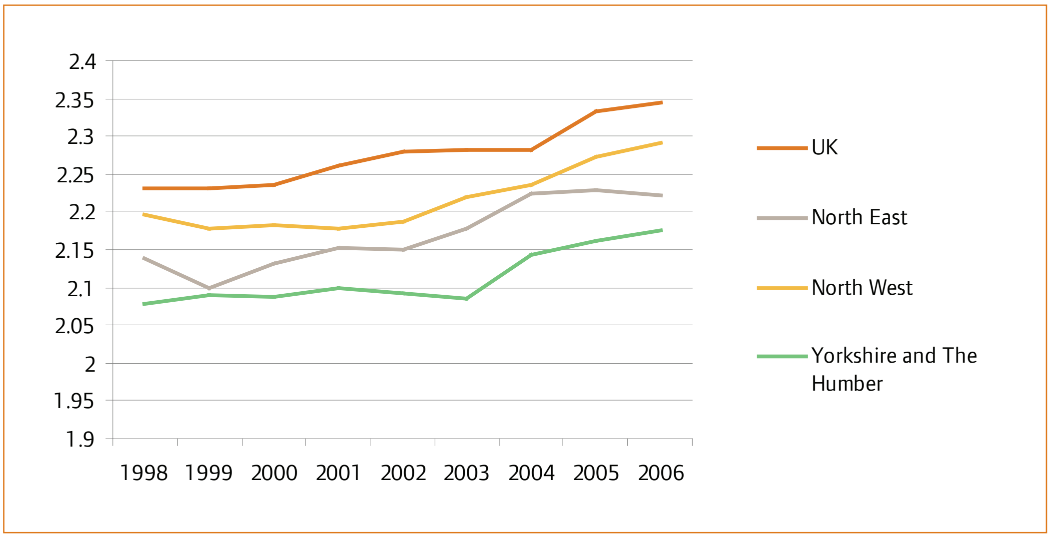
The graph shows that the highest earners (the top 20 per cent) gained much more than median and lowest earners (the bottom 20 per cent). Some of this rise among the lowest paid can be explained by the introduction of the minimum wage in 1999 (BIS 2009). But despite this legal instrument to raise the lowest salaries, the nationwide gain of top earners is almost double that of the lowest earners.

6 ONS data collection methods changed in 2004. Figure 3.4 presents the data series from 1998–2006. See the Technical Annex for a split analysis for 1998–2004 and 2004–2006.

In terms of the Northern regions, the North East shows the most dissimilarity to the national average. While the growth in earnings was substantially higher for high earners, the growth of median earnings barely outstripped that for the lowest earners. However, earnings growth for the lowest paid was higher in the North East compared to the other two Northern regions. Conversely, the North West shows the strongest growth for the top-earning rank, measured as distance from the lowest and median earners. In Yorkshire and Humber, the growth in all three groups seems to be more even.

Figure 3.6 presents this data as a ratio, whereby 80th percentile earnings are divided by 20th percentile earnings to produce a measure of pay inequality. It depicts an increasing level of pay inequality over time in each of the Northern regions and the UK overall. The North West demonstrates the widest pay inequality and is catching up to national levels of inequality. On this measure, it would seem the North is more equal than the country as a whole, but equality in the North is being eroded over time.

Figure 3.6
Pay inequality, ratio 80th percentile:20th percentile, 1998–2006



Source: Annual Survey of Hours and Earnings, ONS

Summary:

- The top 20 per cent of earners saw the greatest increases in income during the period, relative to earners at the median and in the bottom 20 per cent. However, income growth for the top earners was faster in the UK as a whole than in any of the Northern regions.
- The greatest disparities between high and low earners are found in London and the South East.
- The variation in low-end wages is largely unaffected by the earning potential in the top 20 per cent.
- In terms of income inequality, it is fairer up North, although earnings amongst the highest paid are growing faster and levels of inequality are increasing, particularly in the North West.

3.3: Towards some explanations for variations in regional income inequality

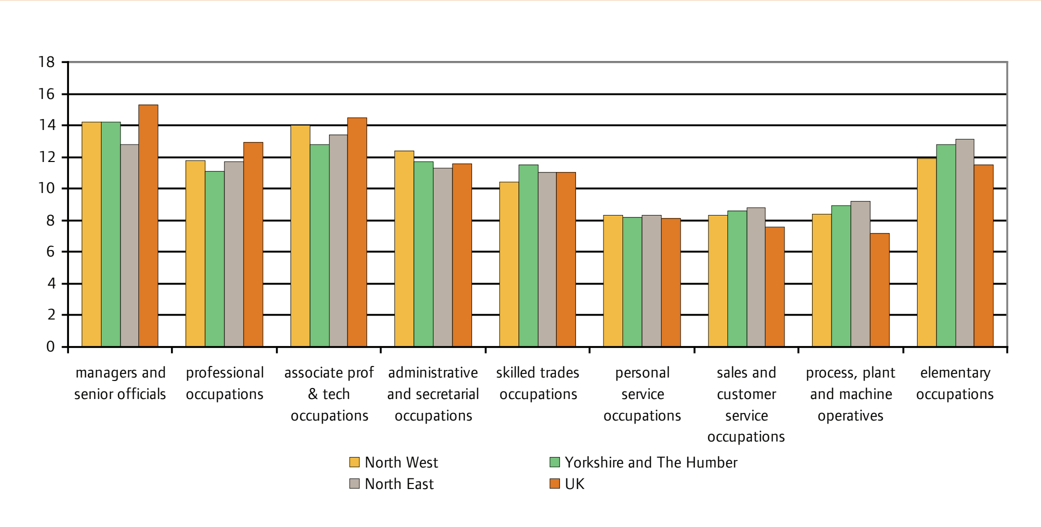
The causes of variations in regional income inequality are complex and, while general statements can be made about the overall patterns, it is very difficult to provide robust explanations for the disparities. This section explores a number of issues which may contribute towards an explanation.

3.3.1 Occupational polarisation

Income potential and occupation are closely related. In the previous section we saw how the gap between the top and bottom 20 per cent of earners has grown with the highest earners increasing their wages at double the rate (12 per cent) of the lowest earners (6 per cent) on average.

In terms of occupations, Figure 3.7 shows the proportion of the workforce employed by major occupational groups in 2008 for the Northern regions and the UK average. In general, the Northern regions have a lower proportion of their workforce employed in managerial and professional occupations, and more in sales, customer services, process plant and machine operatives, and elementary occupations. The North East in particular still has a larger proportion of its workforce in low-skilled occupations and fewer managers and senior officials.

Figure 3.7
Share of employment by occupation, 2008



Source: NOMIS

Figure 3.8 (over) shows the change in employment by occupation, showing growth between 2004 and 2008 in the proportion of people employed in higher-end professional occupations in both the UK and the North. Despite this increase, the North still lags behind in employment in these occupations. Figure 3.8 also shows a reduction in the proportion of people employed in low-skilled occupations, especially in the North East and Yorkshire and the Humber, although as Figure 3.7 shows the employment in this occupations in the Northern regions still exceeds the national average. There has been restructuring of the Northern economies, but there is still some way to go.

The greatest reductions are seen in the proportion of people employed in administrative and skilled trade occupations, well-paid, mid-range occupations which, traditionally, have helped to facilitate social mobility. The diminishing availability of certain types of jobs in middle-income groups has been described as the 'hollowing out' or 'polarisation' of the labour market (Goos and Manning 2007, Goos et al 2010). This process is accompanied by changes at the bottom end of the labour market: a considerable body of evidence suggests that the growth of the new service economy in the 1980s and 1990s, which saw many manual jobs replaced with more vulnerable and insecure work, was made possible by labour market reforms making employment more flexible (McDowell 2003, McKnight 2002, TUC 2008, Cook and Lawton 2008).

The trend of job polarisation is not unique to the UK. An increase in employment in high-paid managerial, professional and associate professional jobs, a decline in mid-range jobs and the growth in low-paid service sector jobs has been a prevalent trend for nearly two decades across Europe and North America.

These charts demonstrate that the occupational structure of the Northern regions is a key contributor to patterns of inequality. The combination of fewer managers and senior officials with a larger proportion of people in low-skilled and generally low-paid occupations results in narrower income and wage inequality. It may be fairer up North, but much of the explanation lies in the structure of the labour market. What's more, as the labour market continues to change it is becoming less fair up North as economic inequality grows.

Figure 3.8
Change in occupational share, 2004–08

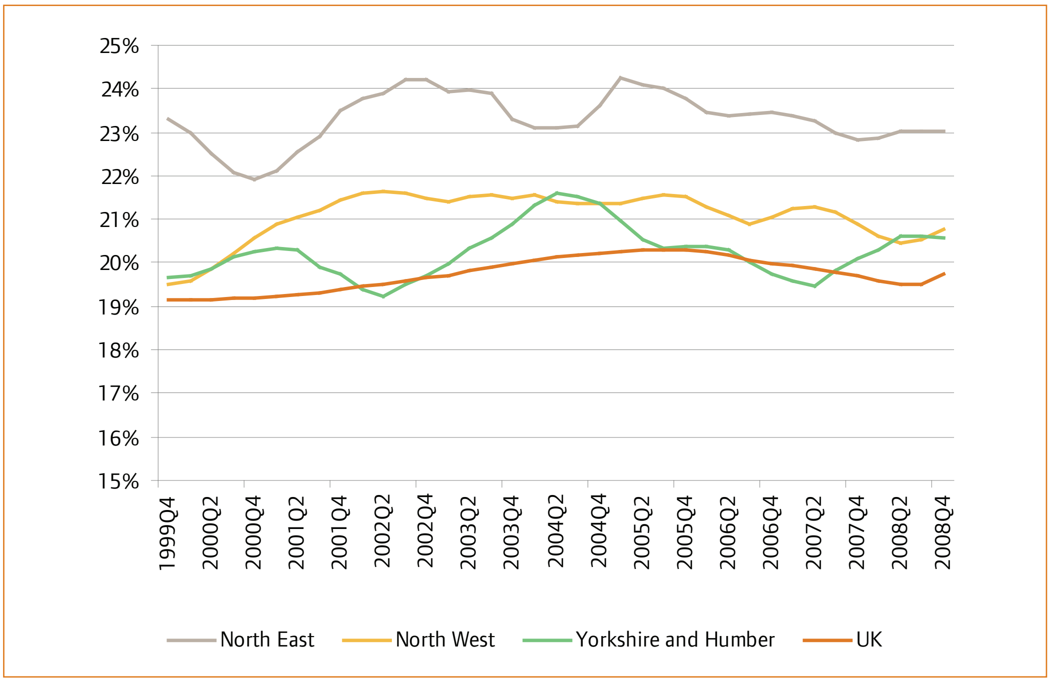
Source: NOMIS

3.3.2 Public sector employment

Another explanation for variations in income and pay inequality between regions may be the 'cushioning effect' of higher levels of public sector employment. Evidence tends to show that at the bottom end of the labour market wages are higher in the public sector than in the private sector. There is also some suggestion that wages are lower, compared to the private sector, at the top end (Lucifora and Meurs 2006, Blackaby et al 1999).

Figure 3.9 shows that the North has a slightly higher level of employment in the public sector compared to the UK average, and this has been the case consistently over time.

Figure 3.9
Public sector employment as percentage of total workforce, 1999–2008



Source: The Labour Force Survey, ONS

However, the growth in public sector employment in the Northern regions has not been disproportionate over the last decade. It is in line with the national trend over the period 1999–2008, and in the North East and North West the growth has actually lagged slightly behind the UK average, as shown in Figure 3.10.

Figure 3.10
Growth in public sector headcount, 1999–2008 (%)

Source: Labour Force survey

While the differences are not vast, higher public sector employment in the Northern regions could contribute to greater equality by boosting pay at the bottom of the labour market and damping pay for some people in senior and managerial positions. However, given the private sector constitutes over 75 per cent of the employment in each of the Northern regions, this effect is likely to be small.

3.3.3 Private sector performance

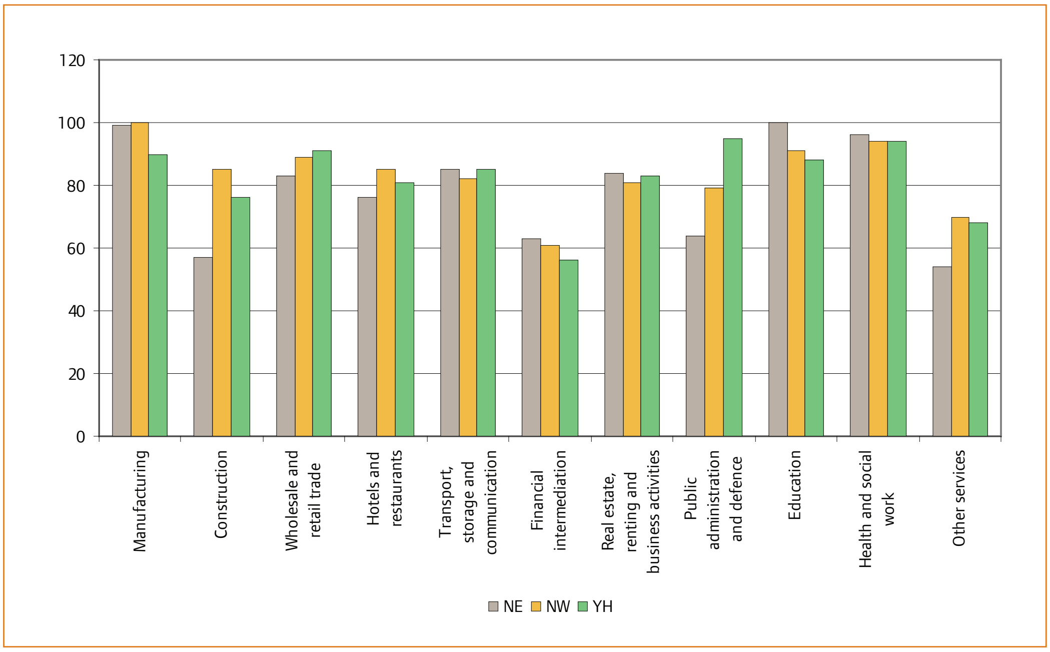
The performance of the private sector also explains some of the differences in income and earnings inequality. The performance of the private sector is crucial, not just because the government is looking to it to lead the economic recovery but also because more than three-quarters of employees work in its ranks.

Economic theory links productivity levels to wages levels, and research shows variation in the level of productivity in different parts of the country *within* the same industry. Indeed, it is estimated that only one-sixth of the variation in productivity between the North and the UK average can be explained by differences in industrial composition and the higher prevalence of low productivity sectors in the North (Johnson et al 2007). Most of the difference is explained by productivity gaps within sectors (Johnson et al 2007, McKinsey 2010).

Figure 3.11 (over) shows differences in GVA per employee in the North compared to the UK average by selected industrial sectors. In some sectors, like manufacturing, education, and health and social work, GVA per employee in the North is similar to the UK average. But this analysis reveals sharp differences within other sectors, most notably financial intermediation and other services, where GVA per employee in the North is about two-thirds of the UK average. However, it is important to note that some of these differences will be compositional, depending on what aspects of the industry's work is carried out in the area – for example, manufacturing covers a wide variety of activity from innovation-driven high-tech manufacturing through to labour-intensive cost-driven operations. Similarly, within the financial services sector there will be a considerable difference between hedge fund management and business and financial support services, with the former tending to be concentrated in the Greater South East. A more fine-grained analysis – at a level below the major industry group category – would help to identify where the real productivity laggards are.

Nonetheless, it is likely that lower levels of productivity in the North are contributing to lower earnings and income, as well as lower overall GVA.

Figure 3.11
Index of GVA per employee by selected industry (UK average = 100), 2007/08



Source: ONS GVA statistics and ONS Economic and Labour Market Review statistics

A sector such as 'other services' – which includes personal and social services – is interesting to consider: this is a sector that tends to be low-paid but will be growth sector in the future. Indeed, our analysis of employment by occupation already shows personal services to be an area of employment growth in the North. If we can increase productivity in sectors such as these, it should have a knock-on benefit, not only boosting GVA but increasing wages too. In this way, economic growth and combating inequality can go hand-in-hand.

However, there are other sectors where boosting private sector performance is less likely to contribute to tackling inequality, as productivity gains are likely to be associated with a static or declining workforce. For example, in manufacturing any productivity gains are likely to be in the higher end or 'innovation-driven' part of the industry, as opposed to 'cost-driven' manufacturing, where the UK is likely to continue to lose jobs due to overseas competition in the supply of cheap labour (McKinsey 2010). We are not arguing that boosting productivity in manufacturing should *not* be part of an economic growth strategy: rather, its effect on tackling inequality is likely to be limited and less, relative to other sectors, as its workforce shrinks.

The Treasury identifies five drivers of productivity: investment, skills, competition, innovation and enterprise (HM Treasury and DTI 2001). Research also shows that the quality of management practices is strongly correlated with productivity (McKinsey 2010). Looking at these issues in sectors of the economy where productivity is poor and employment high could help to boost not only private sector performance and economic growth in the North, but also wages. Where this increase accrues disproportionately to low-paid employees, pay inequality will reduce.

Summary:

- The occupational structure of the labour market in the North is likely to account for much of the variation in inequality. The Northern regions have a higher share of employment in low-skilled occupations and a lower share in high-skilled occupations. However, over time, the North is moving into line with the national picture.
- In-keeping with wider trends, the Northern labour market is polarising, with fewer job opportunities near the median wage and increasing opportunities at both high and low wage extremes.
- A public sector 'cushioning effect' may account for some variation. However, income inequality is more likely to have roots in private sector pay and reward mechanisms, as the private sector includes a much larger share of the labour market across all regions.

- The private sector performs poorly in the North compared to the UK average, with wide differences in productivity within some sectors of the economy. Some of this difference can be attributed to the specific aspects of an industry's work that are carried out in different parts of the country. A more fine-grained analysis – at a level below the major industry group category – would help to identify where the real productivity laggards are.
- Increasing productivity in lagging sectors that are also large employers – such as personal services – would benefit not only overall economic performance but also wage levels among the low-paid, and so levels of inequality as well.

3.4: Chapter summary

- All of the English regions experienced growth in terms of GVA per capita, but the gap between the Northern regions and the UK average did not narrow. There was, however, some convergence of employment and unemployment rates.
- GVA is the favoured measure of economic progress but by itself it provides an inadequate assessment of economic wellbeing, as it does not capture how the proceeds of economic growth are shared.
- Currently, it *is* fairer up North, with income and pay inequality lower than the UK average, particularly to the Greater South East. But over the pre-recession period studied here, inequality has increased in the North: it may be fairer up North but it is becoming less fair over time.
- Most of the variation in income inequality is the result of variation at the top of the income scale, rather than the bottom.
- Similarly, variation in pay inequality is also the result of variation at the top of the labour market, with far higher salaries at the 80th percentile in the Greater South East than in the North.
- Over the period of economic growth, the top 20 per cent of wage earners gained twice as much in terms of income growth as the lowest 20 per cent. Not all wage earners benefited from economic growth equally, and pay inequality has increased.
- Within the North, the wage gap between the top 20 per cent and the bottom 20 per cent of earners is widest in the North West and narrowest in Yorkshire and Humber.
- Differences in occupational structure offer a key explanation of differences in levels of pay inequality.
- The higher proportion of the workforce employed by the public sector in the North may have a cushioning effect on inequality. However, given that over 75 per cent of the workforce is employed by the private sector, pay and reward mechanisms here are more likely to be influential. Lagging productivity in key sectors also represents a major challenge.

4. Segregation and polarisation in the city-regions

This section turns to look at patterns of inequality at the city regional level. City regions have become the preferred spatial lens through which to consider economic development because they are the administrative tier which most closely reflects the spatial scale at which labour markets, housing markets and markets for goods and services operate. Looking at inequality at the city regional level enables us to paint a picture of how the proceeds of economic growth have been shared within a relatively self-contained economic area. Individual household income and pay data are not reliable at the sub-regional level, meaning we cannot replicate the regional analysis discussed in the previous section. Instead, we use available data to assess segregation and polarisation and provide a measure of inequality.

- **Segregation** measures the extent to which certain groups are geographically concentrated within wards in the city-region. It has been noted that segregation according to race and ethnicity in the UK is becoming less prevalent, while segregation on the basis of wealth and income is increasing (NEP/LSE 2010). We have measured the segregation of three types of benefit claimants, tracking change over time.
- **Polarisation** measures the extent to which average household income varies at the ward level. This enables us to build a picture of how inequality translates into geographic separation, as effects of inequality are filtered through the housing market. For this analysis, we use experimental statistics on household income at the ward level released by the ONS.

These measures also enable us to consider and map how inequality is expressed spatially within Northern city-regions.

4.1: Segregation of benefit claimants

This analysis assesses the degree to which key groups of benefit claimants are clustered in certain areas of the Northern city-regions, giving a measure of the geographic separation of some of the most disadvantaged people in society.

The measurement of residential segregation is based on the principles of the index of dissimilarity, which has been widely used for measuring spatial segregation particularly in urban studies (Massey and Denton 1988). This approach was conceived in North American studies which measured the extent to which neighbourhoods were racially segregated. In our example, the rate of different types of benefit claimants is compared between wards. For example, if every ward had an equal unemployment rate, then the segregation index would be zero. In real life, zero segregation is not attainable and so it is merely a theoretical concept against which the uneven distribution of benefit claimants is compared. The index measures the percentage of the unemployed population that would have to relocate in order for the unemployment rate to be equal from ward to ward, that is, for the index to be zero.

The index has been calculated for the following:

- Job Seekers Allowance (Figure 4.1)
- Incapacity Benefit and Employment and Support Allowance (Figure 4.2) and
- Lone Parent Income Support (Figure 4.3)

Table 4.1 (over) shows the index of segregation for 2008, while Figures 4.1–4.3 show the change to levels of segregation between 2000 and 2008.

Table 4.1
Index of segregation of key benefit groups between wards, May 2008 (%)

	Lone parents	JSA	IB/ESA
Hull and Humber Ports	36	31	22
Central Lancashire	35	29	21
Tees Valley	35	26	21
Leeds	30	25	19
Liverpool	29	24	18
Tyne and Wear	27	22	17
Manchester	27	21	17
Sheffield	26	21	17

Comparison across city-regions shows that Sheffield is the least segregated city region, followed by Manchester and Tyne and Wear. Tees Valley, Hull and Humber Ports and Central Lancashire show consistently high levels of segregation across all three groups. Leeds and Liverpool city-regions have medium levels of segregation on all three counts compared to the other Northern city-regions.

Overall, lone parents claiming income support are the most segregated group. For this group, in May 2008 between 26 and 36 per cent of claimants would have had to move for there to be an even distribution across the city-region.

Some city-regions also experienced sharp increases in the segregation of JSA and IB/ESA claimants. Most notably:

- Tees Valley shows a steep rise in the segregation of IB/ESA claimants. In 2000, the index of segregation was 17 per cent, rising to 22 per cent in 2008.
- Tees Valley and Hull and Humber Ports both experienced a sharp rise in segregation of JSA claimants. In Hull and Humber Ports, the index of segregation was 26 per cent in 2000, rising to 31 per cent in 2008. In Tees Valley, it rose from 22 per cent to 26 per cent over the same period. However, it should be noted that these city-regions are both small in terms of geography and population.

What this analysis clearly shows is that, while the level of segregation varies between benefit claimant groups and city-regions, the overall trajectory is towards greater segregation of benefit claimants. Rising inequality in the Northern city-regions has coincided with greater separation of some socioeconomic groups. This has taken place against a backdrop of economic growth, rising employment rates and falling unemployment.

Figure 4.1
Index of segregation for Job Seekers Allowance claimants, 2000–08

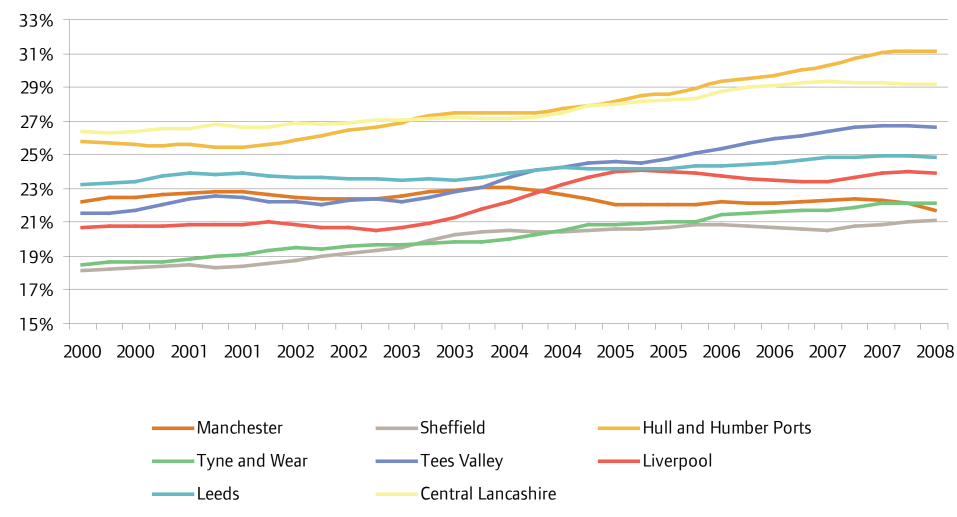


Figure 4.2
Index of segregation for Incapacity Benefit / Employment Support Allowance claimants, 2000–08

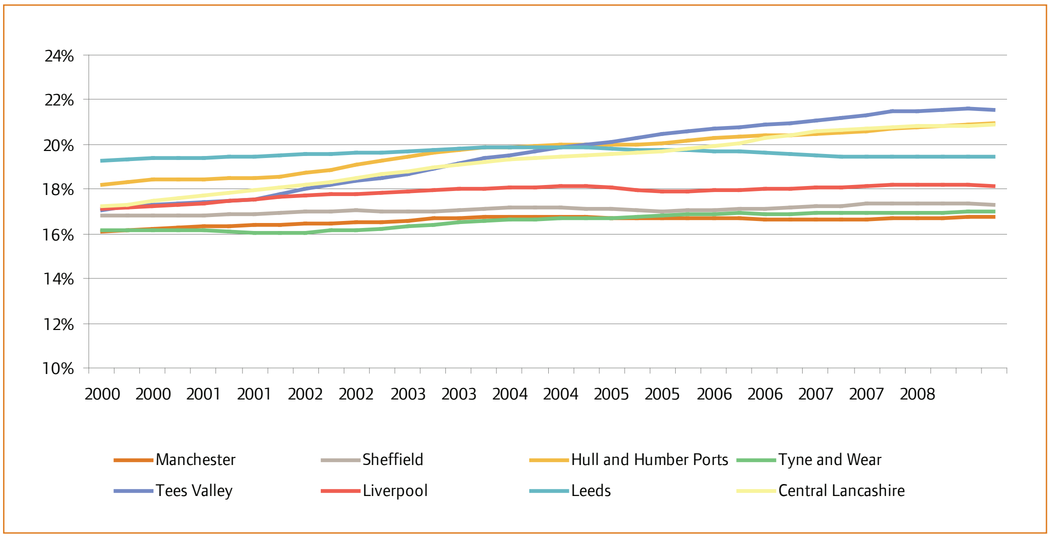
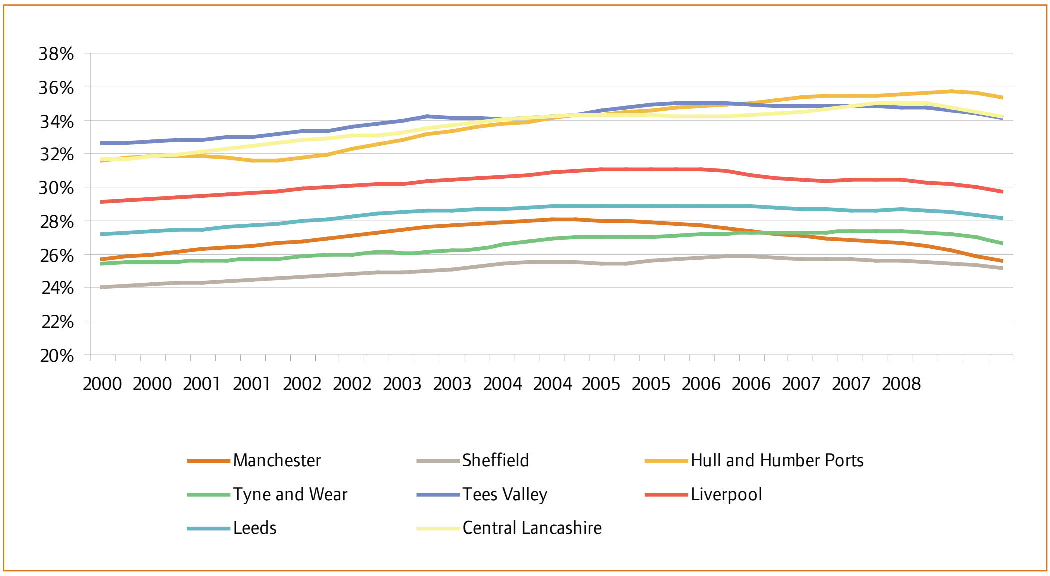


Figure 4.3
Index of segregation for Lone Parent Income Support claimants, 2000–08



Source: ippr calculations based on NOMIS and ONS data

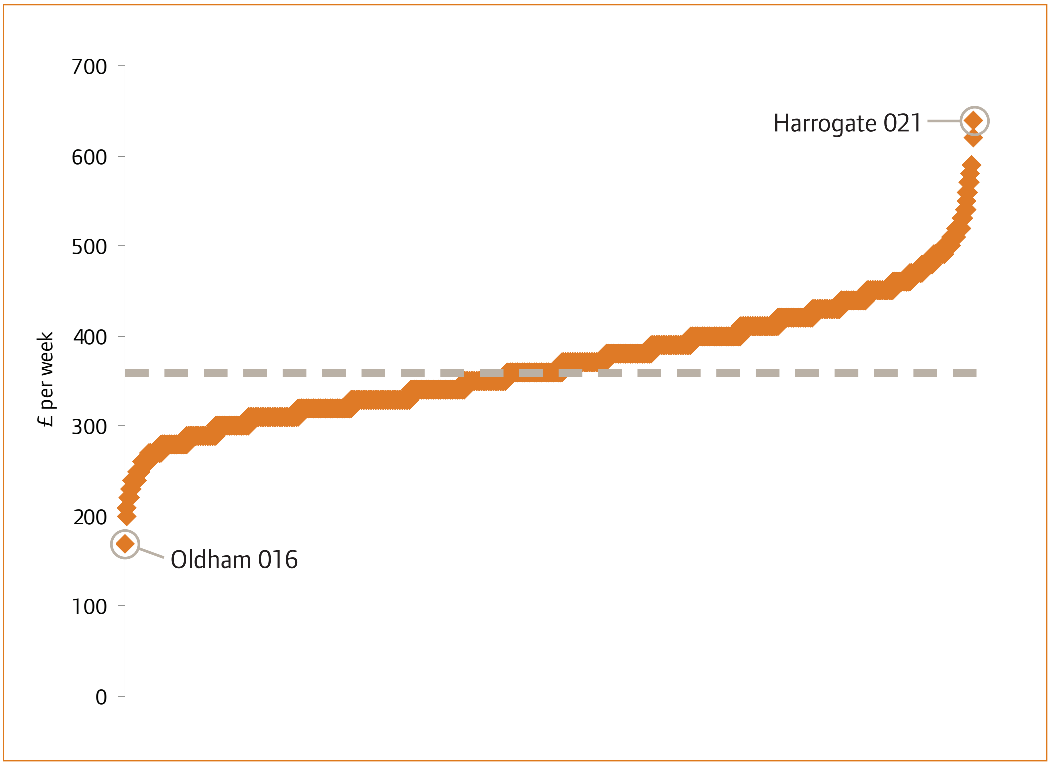
4.2: Polarisation

Our second measure of city-regional inequality is polarisation. Polarisation depicts the differences in average levels of household income between the neighbourhoods within a city-region.

The reason for focusing on the neighbourhood scale is that a great degree of variation in terms of weekly income occurs at the sub-local authority level[7] within the Northern city-regions. In Figure 4.4 (over), the median income is £360 per week in the North, marked with a dotted line; the highest and the lowest average income found in neighbourhoods in Harrogate and Oldham respectively.

7 Using the Middle Super Output Area (MSOA) as the geographic unit of analysis (minimum population 5000).

Figure 4.4
Distribution of average household income in the Northern city-regions at sub-local authority level (£ per week) 2007/08



Source: Income: Model-Based Estimates at MSOA Level, 2007/08, available from ONS Neighborhood Statistics

Standard deviation

To assess the degree of polarisation in the city-region, we measured the standard deviation of the household income at ward level[8] from the city-region mean. The standard deviation is a measure of the spread of data from the mean – the more homogenous a city-region is in terms of household income, the smaller the spread and the smaller the standard deviation. Conversely, the larger the figure, the more polarised the city-region is.

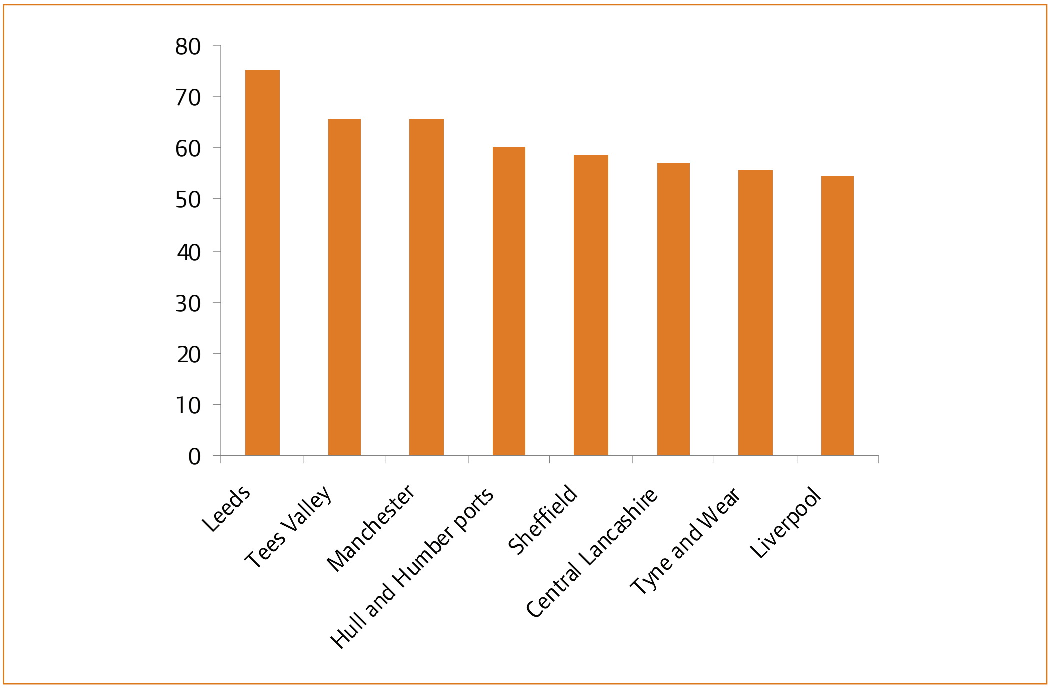
We use the standard deviation (SD) measure here rather than the 80:20 ratio (see Figure 3.6) because SD considers the overall distribution and, given that it is inequality between areas rather than people that is being measured and the experimental nature of the data used, it is more appropriate. The data used here depicts the average household income across an area, after housing costs and equivalised[9] for household size.

Figure 4.5 (over) shows the degree of polarisation across Northern City Region in 2007/08. Leeds city-region emerges as the most polarised – it has a mean household income of £382 per week (which is the highest) but a standard deviation of mean household income at the sub-local authority level of +/– £75, also the highest, indicating a large variation between neighbourhoods.

8 Technically, the data are provided at the Middle Super Output Area (MSOA) level, which is roughly equivalent to a ward.

9 Household incomes are adjusted to reflect the fact that, for example, to have the same standard of living a family of four requires more money than a family of one, but not four times as much.

Figure 4.5
Level of polarisation by city region (standard deviation from the mean, £ per week), 2007/08



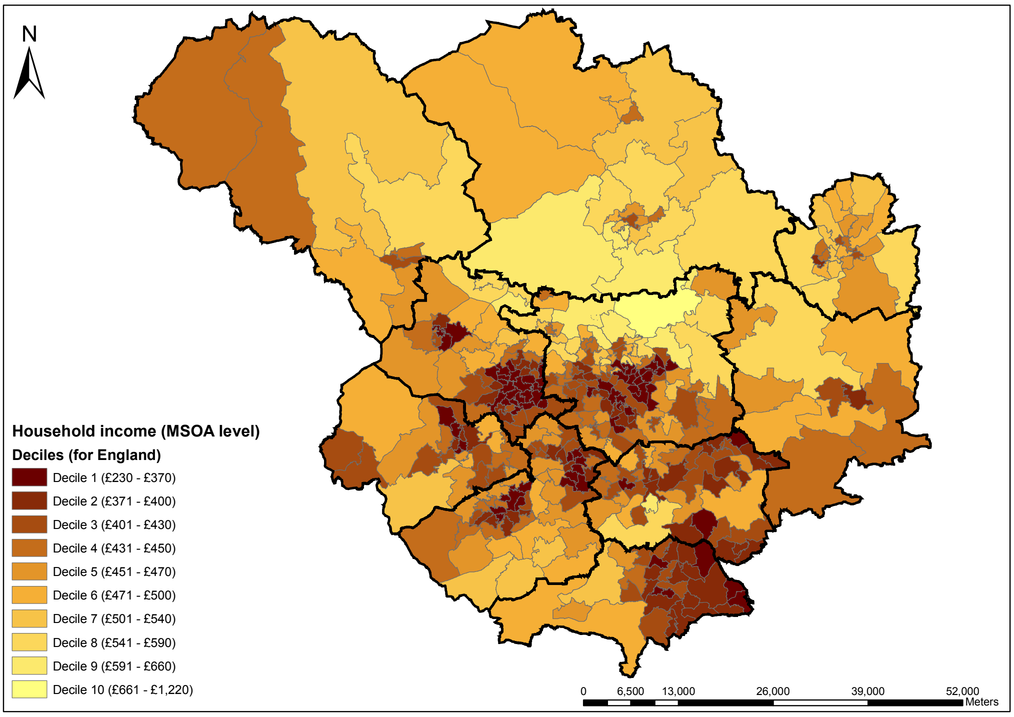
Source: ippr calculations based on ONS data

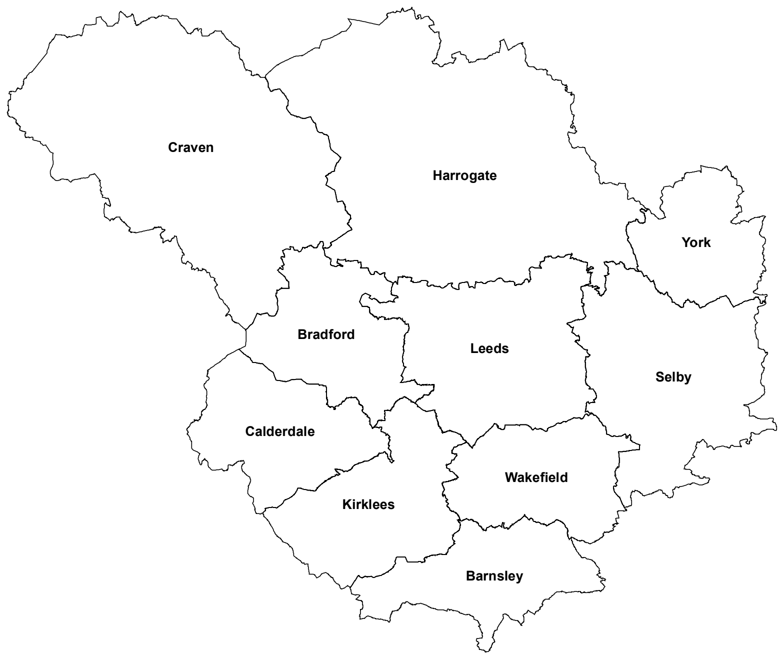
In the previous section, Tees Valley, Hull and Humber Ports and Central Lancashire emerged as consistently the most segregated city-regions in terms of benefit claimants. Tees Valley stands out here as the second highest in terms of income polarisation, second only to Leeds. While Sheffield, Manchester and Tyne and Wear showed the lowest level of benefit segregation, only Tyne and Wear stands out here as retaining its position among the least unequal in terms of income polarisation, although Sheffield is not too far behind.

We also mapped average ward income data to look at the geographic spread of inequality. Maps 4.1 and 4.2 (over) below show average household income (equivalised for household size) at the sub-local authority level in the Leeds and Liverpool city-regions. We have selected these two because Liverpool is the least polarised city-region while Leeds is the most polarised, using the SD measure.

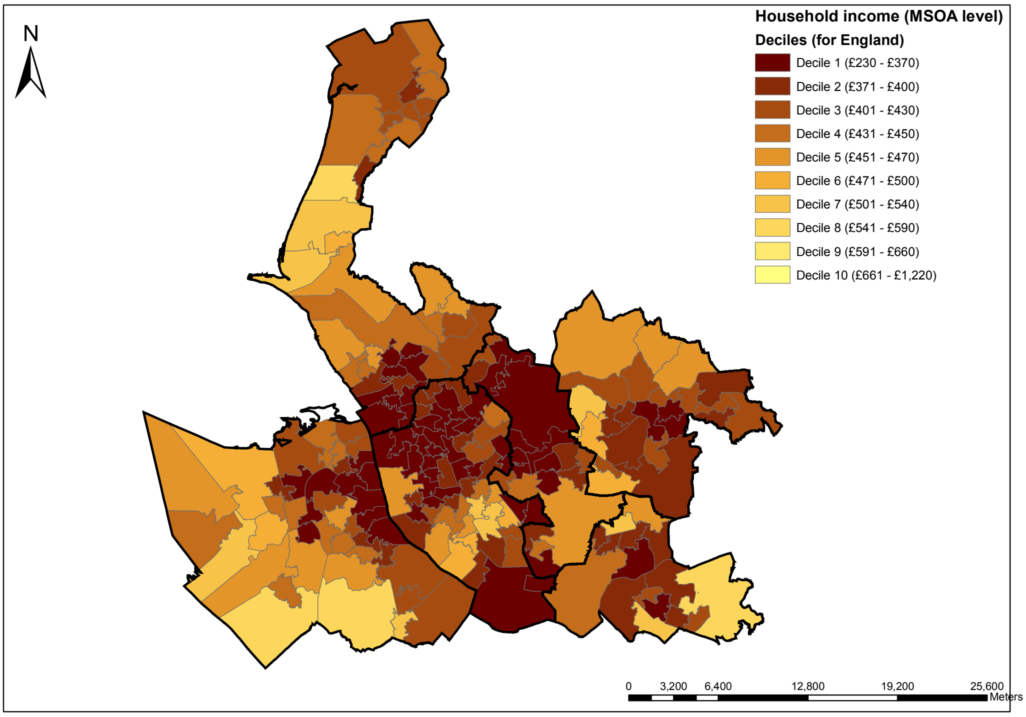
The differences in colour intensity of the map are evident. Leeds demonstrates a fairly typical pattern of low average income households concentrated in inner urban areas, while average incomes are much higher in its large rural hinterland. Liverpool also has some high-earning areas on the edge of the city-region, but these are far outnumbered by the low-income areas.

Map 4.1
Variation in average household income in Leeds city-region





Map 4.2
Variation in average household income in the Liverpool City-region



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To offer a more complete analysis it would be helpful to repeat the analyses of Section 3 (using individual pay and household income data) at the city-regional level. This would enable us to draw conclusions as to whether the most unequal city-regions are also the most polarised and segregated. Unfortunately, the data is insufficiently reliable at the sub-regional level to allow this.

We can however apply the analysis in this section to the regional level. Figure 4.6 (over) shows the average household income (after housing costs and equivalised for household size) and the level of polarisation for the Northern regions and the South East of England (offered as a point of comparison). Interestingly, the level of polarisation appears to increase as average household income increases.

Figure 4.6
Average household income and standard deviation by region

Source: ippr calculations and Annual Survey of Hours and Earnings

It is also noteworthy that the Tees Valley city-region shows consistently high levels of polarisation and segregation, whereas the North East as a region has the lowest level of polarisation. This underlines the importance of spatial scale when understanding the complex dynamics of inequality. Furthermore, considering the results for Yorkshire and Humber – which is one of the more equal regions in terms of pay and income inequalities, but also the most polarised of the Northern regions – highlights the need to examine spatial patterns of inequality alongside more traditional statistical measures.

4.3: Towards an explanation for variations in segregation and polarisation

The indices of segregation and polarisation measure different things. The segregation index reveals the concentration of key benefit claimants in particular areas, while the polarisation measure shows the geographic concentration of different income groups. Both measures will however be affected by the same drivers, most notably the labour market and the housing market.

The buoyant labour-market conditions that form a backdrop to this analysis, with rising employment rates and falling unemployment rates, are likely to have spatial implications. Under such conditions, those who are able are more likely to move into employment and consequently move out of disadvantaged areas. This process of residential sorting results in those furthest from the labour market being left behind. The work by Robson et al (2009) has shown how some of the most deprived neighbourhoods can become isolated from the wider housing market. These neighbourhoods are associated with 'a degree of entrapment of poor households who are unable to break out of living in deprived areas' (ibid: 5).

Residential sorting also extends beyond those on low incomes. More generally, it refers to the process by which those on the highest incomes have the greatest choice about where they are able to live, while others are priced out of certain areas.

It is much more difficult to explain city-regional differences in segregation and polarisation, but these may be the result of a number of differences between the city-regions, many focused on housing market factors:

- **Boundaries:** Our analysis has been carried out at ward level, the smallest geographic scale possible, but wards are relatively large and made up of numerous neighbourhoods, some of which may be more prosperous than others. This effect may be stronger in some city-regions than others. Ideally, analysis of polarisation and segregation would be carried out at the neighbourhood level.
- **Clustering of social housing:** Social housing is increasingly 'residualised', being home only to those on the lowest incomes, the most vulnerable and those in receipt of benefits. City-regions with a more dispersed geographic distribution of social housing will be less segregated, and possibly less polarised too. The reverse is likely to be true where social housing is clustered together.

- **Availability of social housing:** Social housing is an increasingly rationed commodity. Where demand for social housing is particularly high, tenancies are more likely to go to those most in need, and the choices available to residents are fewer. The result is likely to be greater segregation of those with the highest need.
- **Affordability:** In city-regions where housing affordability is less of a concern, residents will have greater choice over where to live. Where it is more of a problem, residents on moderate incomes may be priced out of more desirable areas, resulting in increased polarisation. For example, the North of Leeds is one of the least affordable areas in the North, with average prices equivalent to more than 10 times the average income in 2008 (JRF Housing and Neighbourhood Monitor), and this is also the most polarised city-region.

4.4: Chapter summary

- Levels of segregation between benefit claimants and the wider popularion at ward level vary between the city-regions. However, the overall trajectory was upwards over the period studied.
- Income polarisation also varies across all city-regions, showing similar but not identical patterns between city-regions to those of benefit segregation.
- Sheffield is the least segregated city-region, followed by Manchester and Tyne and Wear. While Manchester shows higher levels of income polarisation, Sheffield and Tyne and Wear have a lower level of spatial inequality overall.
- Tees Valley, Hull and Humber Ports and Central Lancashire show consistently high levels of segregation, with Tees Valley also displaying high levels of income polarisation, second only to Leeds.
- While occupational structure and other employment issues (as set out in Section 3) may account for some variations, the most likely explanation for differences in spatially pronounced inequality between city-regions is the process of 'residential sorting', the impact of the wider housing market.

5. Polarisation and social outcomes

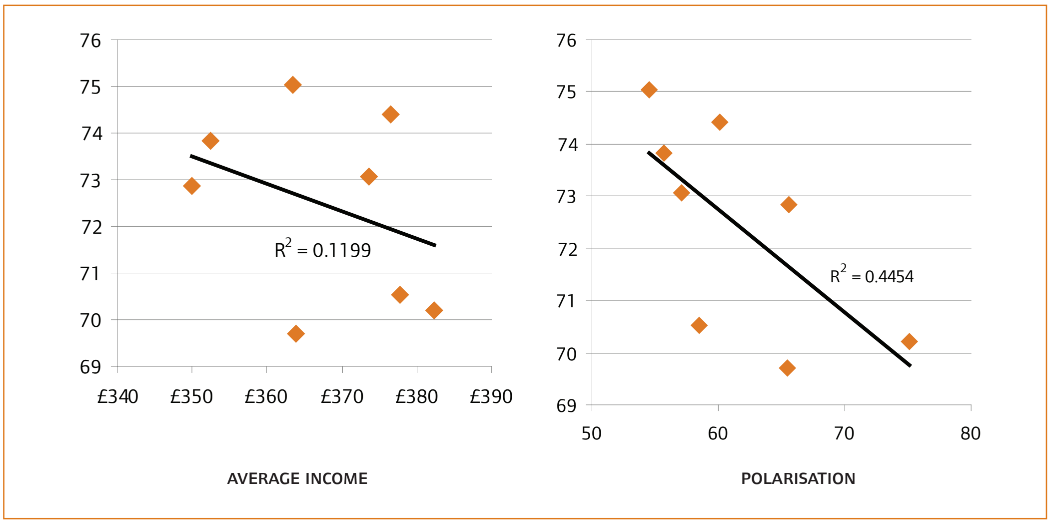
Research on the impact of economic inequality is generally done at the national level. However, we wanted to test to see whether there were any significant relationships between inequality and social outcomes at the city-regional level.

We use a measure of polarisation– the standard deviation from the mean household income within city-regions (see Figure 4.5) – and mean household income to assess whether either metric correlates with a range of social outcomes including educational attainment, premature mortality, teenage pregnancy, business start-ups, cohesion, sense of belonging and incidence of crime. While we found no relationship between polarisation and many of these outcomes at city-regional level, we present here the results for those outcomes where a strong visual relationship was identified.

The trendlines and r-squared figures presented below represent correlations using the Pearson[10] correlation measure (squared). However, as there are only eight data points (one for each city-region), the results have limited use for confirming the strength of the relationship, even when the r-squared value seems to suggest that a relationship exists.

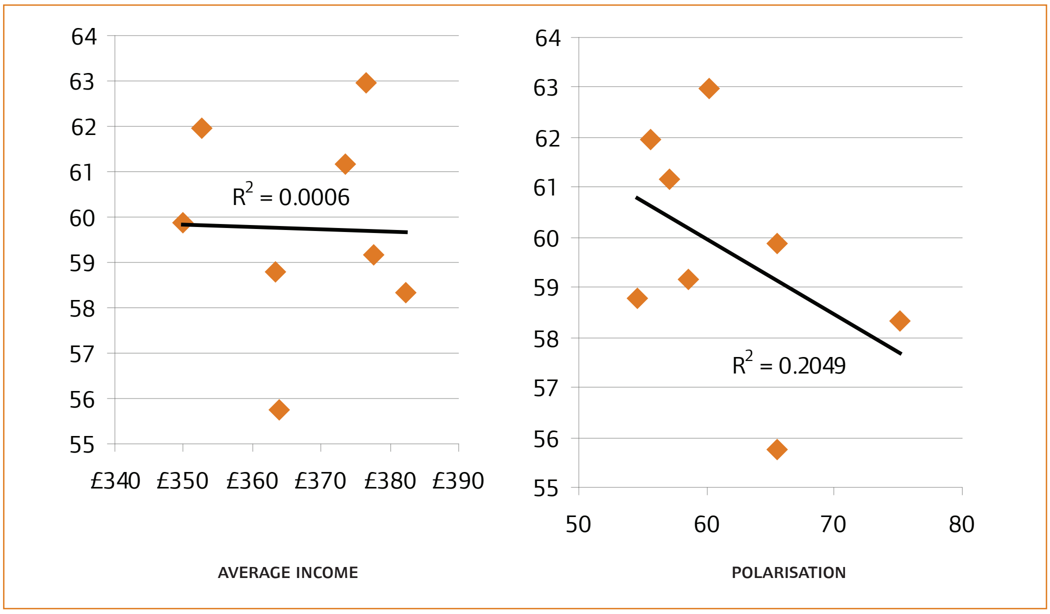
The scatterplots below do, however, give a visual indication of the social outcomes in more or less polarised places. We find a correlation between polarisation and cohesion (the proportion of people who believe people from different backgrounds get on well together in their local area) and sense of belonging, as Figures 5.1 and 5.2 show. However, it is notable that the same outcomes did not appear to have any relationship when correlated against the mean household income.

Figure 5.1
Cohesion – percentage who believe people from different backgrounds get on well together in their local area (y-axis)



10 The Technical Annex to this report provides a full account of these correlations, including the p-values, as well as the results of an alternative test using Spearman's correlation.

Figure 5.2
Belonging – percentage who feel that they belong to their neighbourhood (y-axis)



These results need to be carefully interpreted, given the caveats already noted. Nonetheless, the fact that there is a complete absence of data points in the top-right quadrant of Figures 5.1 and 5.2 suggests none of the more polarised city-regions reported high levels of social cohesion or belonging. Both graphs (to different degrees) also have a clustering of data points in the top-left quadrant, suggesting that a lower level of polarisation coincides with higher social cohesion and belonging.

The fact that we detect a relationship when social outcomes are correlated against polarisation but not when they are correlated against average income suggests it is the gap between rich and poor that matters for these outcomes.

None of the other social outcomes we tested against polarisation produced a statistically significant correlation, with the exception of burglary rates, which is depicted in Figure 5.3 below. Here we found a similar strength of relationship as between polarisation and cohesion, but there is one outlier which appears to be skewing the results, which gives us less confidence in this finding.

Figure 5.3
Burglaries per 1000 population (y-axis)

The lack of correlation between polarisation and the other social outcomes could be due to a number of reasons, not least the availability of robust and comparable data at the sub-regional level, particularly where data is drawn from surveys. However, in some policy areas, such as health inequalities, research has shown that inequalities at the national level have a more important effect on social outcomes than any more-local manifestation of those inequalities. This finding may hold true for other policy areas too. It may also be the case that investment and policy interventions in poorer areas locally could affect the results. For example, schools in low-income neighbourhoods have seen considerable improvements to attainment due to targeted policies and funding.

Nonetheless, the correlations found between polarisation and social cohesion and between polarisation and belonging at the sub-regional level are interesting. These indicate that the social fabric of our society would appear to be weaker where polarisation is greater which, ultimately, could have implications for a range of wider issues, including for example business confidence to invest in an area.

Chapter summary

- Rather than just looking at average incomes, it is important to look also at the gap between the rich and the poor and how this plays out geographically, as this can reveal patterns in social outcomes which would otherwise go undetected.
- The correlations between polarisation and cohesion, belonging and – more tentatively – burglary rates are indicative only, and not conclusive, due to the small sample size (eight city-regions). However, they point towards a possible relationship between polarisation and social outcomes that is worthy of further investigation.
- The social fabric of communities would appear to be weaker where polarisation is greater.

6. Conclusions and recommendations

In the period prior to the 2008 recession, the North of England continued to lag in economic terms compared with the rest of the country, despite experiencing sustained GVA growth, rising employment and falling unemployment. During that time, our analysis shows that in terms of income inequality and pay inequality it was *fairer up North* when compared to the Greater South East. But that fairness is being eroded. Over the pre-recession period of economic growth, the North became more unequal, both in terms of the growing gap between the top and bottom groups of earners and in terms of increased geographic segregation of the most disadvantaged in society.

Certainly, looking back over the period of economic growth prior to the recession, the proceeds of growth were not shared evenly within regions or city-regions. Some people benefitted very little, while those on low pay did not benefit nearly as much as those on high pay across the North – and this is similar to the UK trend. Looking nationally, variations in levels of economic inequality are determined more by the distribution of high-income households and high earners. Some of this difference results from variations in the occupational structure of the labour market in different areas – in the North, a smaller proportion of the workforce is employed in higher-paying occupations and more in lower-paying occupations.

As the Northern labour market has been changing and becoming more polarised, inequality has increased. The challenge for policymakers is how to grow the economy while addressing the negative trend of increasing inequality in order to tackle the inherent unfairness of the historic North–South divide in economic performance, as well as the growing distance between the top and bottom of the income distribution. Economic growth is rightly a key ambition in the North of England, but we should aspire to achieve it without further increasing the yawning economic inequalities already opening up. And if there is to be greater reliance on private sector-led growth in the future, there is a risk that the trends in inequality we identify here will continue unabated unless there is an adequate policy response.

The answer perhaps lies in the development of a concept of 'good growth'. Good growth would balance economic objectives with social and environmental objectives, and secure wide participation in the labour market. In this sense, the Coalition government is right to be giving serious consideration to how we can meaningfully measure 'wellbeing'. Rather than pursuing economic growth at any cost, with performance assessed only by traditional econometric variables such as GVA and employment rates (important though they are), the social and environmental impacts of growth must be factored in. But we must not simply get better at measuring wellbeing – we must also operationalise it as a policy objective. This is a job not only for national government but for local authorities and LEPs too.

This research may also lend some support to the view that income inequality has negative implications for all members of society. Our analysis indicates that city-regions with higher levels of spatial polarisation of income groups are also likely to have lower levels of social cohesion and belonging overall. It seems weakened social fabric and greater inequality go hand-in-hand.

Other ippr north research has found that strong social fabric is an asset to deprived neighbourhoods and has a key role to play in neighbourhood improvement (ippr north 2010). Stemming or reducing polarisation may therefore have a part to play in aiding improvement in some of the North's most deprived neighbourhoods. But the trend in recent years has been opposite to this, with segregation increasing across the North. People with greater socioeconomic needs are increasingly clustered together, trapping some of the most disadvantaged individuals and families in some of the most deprived areas. This is an alarming message for the 'new progressive' agenda of the Coalition government, which emphasises personal social mobility.

For example, the government is introducing reforms to social housing in order to ease the mobility of tenants. However, these changes must be accompanied by support for people to overcome barriers to re-entering the labour market and, in some cases, to broaden their travel horizons. Otherwise the effect may be to further concentrate disadvantage in some areas (ibid).

Many of the major policy levers that are relevant to addressing inequality are held at the national level, most notably the tax and benefits system and decisions about the minimum wage. Nonetheless, given the focus of this research on the city-regional level, our recommendations also focus on what can be done at the city-regional or local level.

1. **Local Enterprise Partnerships should prioritise 'good growth' for their area**

   LEPs are the key policy mechanism for driving sub-national economic growth, and most LEPs have highlighted GVA growth and employment as top priorities. These are worthy goals, but they should be complemented by social and environmental objectives to recognise that the economy and its impacts cannot be dealt with in separation.

   LEPs in the North of England have the opportunity to show clear leadership and local distinctiveness in relation to economic development. While there will always be constraints within a globally competitive labour market, the benefits of high levels of social wellbeing as well as achieving narrower economic improvements need to be better understood and emphasised as a key part of local economic development. This research has clearly demonstrated that what is being measured in the first place influences the findings, which will have implications for the policy conclusions drawn.

   With regard to inequality, there are a number of actions LEPs should undertake if they want to promote greater equality.

   - Build capacity to monitor changing levels of inequality and segregation in the city-region. This should specifically include the spatial aspects of inequality, for example levels of polarisation and segregation.
   - Work together to develop a 'good growth' model that can be used to predict the likely impact of economic changes on inequality (and other economic, social and environmental objectives).
   - Boost wages among the lowest paid by calculating the Living Wage (the minimum hourly wage necessary to meet essential needs) for their area and promoting its uptake. LEPs can learn from the Greater London Authority, which annually calculates a living wage for London and promotes its uptake through its supply chain and among other employers in London (GLA Economics 2010). Some local authorities in the North, such as Preston, are already committed to a Living Wage for their employees, but there is scope for wider uptake within the public and private sectors and across other areas of the North.

2. **LEPs should develop sector strategies, prioritising sectors those that lag in productivity and are also large employers**

   There is often a temptation in economic development to focus on growing new businesses – however, LEPs should also prioritise improvement within the existing local stock of businesses. LEPs should identify which sectors are lagging in terms of productivity and work with them to boost productivity and therefore private sector-led economic growth. Where LEPs want to combat inequality, they should prioritise sectors that both lag in terms of productivity and are large employers, such as the personal services sector, as boosting productivity in these sectors should have a knock-on effect on wage levels. This will be most beneficial in combating inequality where a sector has a large number of low-paid workers. Economic growth and tackling inequality can go hand-in-hand.

3. **Voluntary pay ratios could act as a check on pay inequality**

   Recently there has been considerable focus on the public sector as employers, and Will Hutton has indicated that his review of fair pay in the public sector will recommend a ceiling on the ratio between the lowest and highest paid in an organisation. Twenty has been mooted as a possible maximum ratio.

   Given its slightly higher proportion of public sector workers, the introduction of a pay ratio may have some small impact in the North, although few managers are currently likely to earn over 20 times more than the lowest paid person in their organisation. The vast majority of the Northern workforce is employed in the private sector, meaning pay ratios here may be more important.

   LEPs should introduce a voluntary scheme and encourage employers to sign up. This would cement a commitment to pay ratios as a check on future pay inequality.

Because earnings at the top of the labour market are generally lower in the Northern regions, introducing such a scheme now is sensible and more practical. It would involve relatively little pain and would be more viable while pay gaps remain narrower than later when pay inequality increases.

4. **Continue to focus on improving incomes for the most disadvantaged in society**

   Improving incomes among the most disadvantaged has a key part to play in reducing inequality. Moving from welfare into work remains for many the surest route out of disadvantage. The operation of the government's new Work Programme will therefore be critical to achieving this aim. Local authorities already deliver a range of services that are vital in promoting employment; they also have a unique understanding of contextual issues. Working through LEPs, local authorities should be responsible for co-commissioning the Work Programme with the prime providers to ensure it is tailored to suit local needs and labour market conditions (for more, see ippr north 2010, McNeil 2010). In particular, securing wide participation in the labour market with a focus on the skills and employability of young people is increasingly critical at the present time.

5. **Local authorities should have greater financial powers to enable them to shape their areas**

   The availability of housing and the distribution of different tenures influence spatial patterns of inequality. Local authorities, through their place-shaping role, should be able to tackle issues such affordable housing or physical regeneration in order to address issues of segregation and polarisation in their area. To deliver on this aspiration they require the capacity to do so, including greater financial powers which would enable them to raise funds – for example through property or income taxes, greater borrowing powers or bonds – to finance major priorities. The forthcoming review of local government finance must result in a package of stronger financial powers, with the balance between locally raised and centrally provided funding for local government nearer 50/50 to ensure a result that is more substantial than mere lipstick localism (see Cox 2010).

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Technical Annex

Figures 3.4–3.6: Pay inequality

Data source is the Annual Survey of Hours and Earnings (ASHE) published by the ONS and based on a 1% sample of all employee jobs in the UK.

Earnings have been adjusted for inflation on the basis of the HMT RPI deflator. The 95% confidence intervals for the estimates of the relevant percentiles are within the range 0.5%–3%.

There is a break in the data in 2004 due to the increased coverage of ASHE from 2004 onwards. The figures in the main report consider the period 1998–2006 as a whole; the split analysis is provided in Figures TA1, TA2 and TA3 below. Inequality appears to have increased more in the period after 2004 in all areas apart from the North East, where the bottom 20% earners have increased their earnings by nearly as much as the top 20% in 2004–06.

Figure TA1: Change, 1998–2004

Figure TA2: Change, 2004–06

Figure TA3: Pay inequality ratio, 1998–2006

Figures 3.7 and 3.8: Change in occupational share

Source is the Annual Population Survey obtained from NOMIS based on the Labour Force Survey, with a sample size of 170,000 households.

For Figure 3.8, the results of a 95% confidence interval hypothesis test (where H0 = no change in employment share) of the combined Northern regions are shown below.

Table TA1
Significance test results, Figure 3.8

Occupation	Change 2004–08	Significant at 5% level?
managers and senior officials	0.92%	Yes
professional	0.52%	Yes
associate professional and technical	0.55%	Yes
administrative and secretarial	–0.73%	Yes
skilled trades	–0.45%	Yes
personal service	0.39%	Yes
sales and customer service	–0.34%	No
process, plant and machine operatives	–0.36%	Yes
elementary occupations	–0.61%	Yes

Figures 4.1–4.3: Segregation

Source is the benefit claimant data on NOMIS derived from DWP administrative data.

The measure used here is the index of dissimilarity. This is defined as:

$$= 0.5 * \Sigma \mid [(j_{vw}/J_w) - (k_{vw}/K_w)] \mid$$

Where:
j = the size of the claimant group in ward v within city-region w; J = the size of the claimant group in the city-region w
k = the size of the non-claimant group in ward v within city-region w; K = the size of the non-claimant group in the city-region w

Figure 4.5: Polarisation

Source for mean household income data is the 2007–08 model-based estimates provided by ONS neighbourhood statistics.

The SD measure is calculated by taking the city-region average household income and calculating the average deviation from this at the MSOA level. This measures the extent to which the mean household income varies between small areas within the city-region. So, for example, in a city-region where the most of the MSOAs have similar mean household incomes the SD measure will be low; where these are dissimilar the SD will be higher. Leeds has the highest SD measure due to the fact that it has some of the most affluent areas in the north as well as some of the poorest. It should be reinforced that this measure is an indicator of inequality *between areas* rather than *between people*.

Figure 5.1–5.3: Polarisation and social outcomes

The scatterplots are based on the SD measure of inequality and the following measures:

- NI1: percentage who agree 'this local area is a place where people from different backgrounds get on well together'
- NI2: percentage who say they 'very or fairly strongly believe they belong to immediate neighbourhood'
- Burglary rate: burglary rate per 1000 population

The source of this data is the CLG floor targets database, with the NI1 and NI2 measures deriving from the 2008 place survey with a minimum sample size of 1,100 per local authority. The crime indicator is based on recorded crime figures.

The data is available only at local authority district level, so to produce a city-region measure the population-weighted average of each measure across the local authorities in the city-region is calculated.

The scatterplots are intended as a visual rather than a statistical demonstration of the relationships. Due to the very small sample size (n=8) the usefulness of statistical measures of association is dubious. They are provided here for information, rather than as part of the analysis.

Table TA2
Pearson's correlation, Figures 5.1–5.3

	Correlation co-efficient, Pearson's r	p-value (two-tailed)	p-value (one-tailed)
NI1	0.4454	<0.1	<0.05
NI2	0.2049	>0.1	>0.1
Burglary rate	0.4782	<0.1	<0.05

Table TA3
Spearman's correlation, Figures 5.1–5.3

	Correlation co-efficient, Spearman's r	p-value (two-tailed)	p-value (one-tailed)
NI1	–0.714285714	<0.1	<0.05
NI2	–0.333333333	>0.1	>0.1
Burglary rate	0.571428571	>0.1	<0.1

Boundary changes: Note on pre-2009 local authority districts that formed part of Northumberland and Durham County Unity Authorities

The outcome measures were available for all local authorities apart from the constituent authorities of Northumberland and Durham County Unitary that missed the NI1 and NI2 measures due to the survey behind these measures being conducted after these authorities were subsumed in Northumberland and Durham County unitary authorities in 2009.

The approach taken was to assign the scores of Northumberland UA and Durham UA to the pre-2009 local authorities. This obviously introduces some uncertainty and potential bias into the Tyne and Wear measure, because at least some of the NI1 and NI2 measures will be influenced by areas in Northumberland and Durham that are not in the Tyne and Wear city-region. To give an indication of this influence, the pre-2009 Northumberland and Durham authorities carry a 35% weighting in the Tyne and Wear NI1 and NI2 scores, and 65% of Durham County and 85% of Northumberland is within the Tyne and Wear city-region. We therefore might expect the influence of this issue to be quite small as the weighting for Tyne and Wear for the pre-2009 authorities is low and the proportion of the Northumberland and Durham County UA NI1 and NI2 measures that are accounted for by the pre-2009 authorities within the Tyne and Wear city-region is high.

However, in order to be confident that our results in the scatterplots are not unduly influenced by our treatment of the Northumberland and Durham County pre-2009 authorities, the correlation analysis for NI1 was re-run in three ways: (a) by excluding Tyne and Wear from the analysis; (b) by including all Northumberland and Durham County pre-2009 authorities in the Tyne and Wear measure, and (c) by excluding the Northumberland and Durham County pre-2009 authorities from the Tyne and Wear measure.

Table TA4 below shows which local authority districts were included within Tyne and Wear's NI1 measure:

Table TA4
Inclusion of local authority districts

	UA	In report*	A	B	C
Chester-le-Street	Durham	✓	×	✓	×
Derwentside	Durham	✓	×	✓	×
Durham	Durham	✓	×	✓	×
Easington	Durham	✓	×	✓	×
Sedgefield	Durham	×	×	✓	×
Teesdale	Durham	×	×	✓	×
Wear Valley	Durham	×	×	✓	×
Alnwick	Northumberland	×	×	✓	×
Berwick-upon-Tweed	Northumberland	×	×	✓	×
Blyth Valley	Northumberland	✓	×	✓	×
Castle Morpeth	Northumberland	✓	×	✓	×
Tynedale	Northumberland	✓	×	✓	×
Wansbeck	Northumberland	✓	×	✓	×
Gateshead	N/A	✓	×	✓	✓
Newcastle-upon-Tyne	N/A	✓	×	✓	✓
North Tyneside	N/A	✓	×	✓	✓
South Tyneside	N/A	✓	×	✓	✓
Sunderland	N/A	✓	×	✓	✓

* ie in Tyne and Wear city-region

The results from the different models are given in Table TA5 below (caveats with regard to statistical indicators as per above).

Table TA5
Results according to inclusion model

	SD measure	NI1 measure	Gradient of line of best fit	Correlation coefficient r	p-value (two-tail)	p-value (one-tail)
In report	55.644	73.835	–0.199	0.667	0.071	0.035
A	N/A	N/A	–0.194	0.635	0.126	0.063
B	54.323	73.893	–0.195	0.671	0.068	0.034
C	51.021	72.847	–0.154	0.591	0.123	0.061

As can be seen, the results are broadly consistent regardless of how the Tyne and Wear region is entered into the analysis; in fact, the Tyne and Wear city-region in itself is not a particularly influential data-point. The biggest difference is when Northumberland and Durham County UA pre-2009 authorities are excluded altogether from the Tyne and Wear measure (model C) – this is to be expected, as this biases the Tyne and Wear city-region measure towards more urban areas within the city-region.