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A Tale of Two Cities

Neighbourhood segregation by income in two urban case studies

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April 2008

Institute for Public Policy Research

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Contents

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This paper was first published in April 2008.

Acknowledgements

This project would not have been possible without the generous support of English Partnerships, Housing Corporation, Places for People, and Shelter. Thanks in particular to Adrian Moran (Housing Corporation), Steve Carr (English Partnerships), Caroline Davey (Shelter), Mark Thomas (Shelter), Richard Bayley (Places for People), and Steve Turner (Places for People) for their guidance and input.

Thanks to the ippr colleagues who have contributed to this paper: Howard Reed and Kayte Lawton for their assistance with data analysis; John Cannings for assistance with the mapping; William Dorling for carrying out the stakeholder interviews; and Dalia Ben-Galim and Kate Stanley for their comments on the paper.

Thanks also to Danny Dorling, Rebecca Tunstall and Max Nathan for their comments on early drafts of this paper, and all those who participated in the stakeholder interviews in Barking and Dagenham, and Sunderland.

Executive summary

It is now well understood that people living in deprived areas have poorer access to goods and services, frequently experience lower quality goods and services, and often have to pay more for these goods and services than those in better off areas. There is also evidence that living in an area of concentrated deprivation tends to exacerbate residents' problems, compromising health, educational outcomes and employment.

The same evidence suggests that mixed communities offer the potential to increase equality between areas and promote a collective sense of citizenship, and have the potential to improve conditions in absolute terms.

This phenomenon of division into rich and poor communities, at the neighbourhood and regional levels, can be described as income segregation, and represents a substantial social injustice. In the past, public policy has tended to focus on reducing social and economic disparities between regions and neighbourhoods. In recent years, there has been an increased focus on seeking to create more mixed communities, in new housing developments and in large social housing estates. But while there has been progress in addressing disparities at local authority level, some measures at the neighbourhood level are widening.

At a time when policy for reducing social and economic disparities is at a crossroads (following the Sub-national Review of Economic Development and Regeneration), and housing policy is increasingly focused on the goal of creating mixed communities, it is appropriate to examine some of the underlying causes of income segregation, its relationship to spatial disparities, and possible solutions.

Different national, regional and local processes can lead to income segregation at the neighbourhood level. Policy and economic drivers interact with the processes of income segregation at different spatial scales. This research focuses on the processes at the local level. In particular, it explores the relationship between a neighbourhood's income profile, and the housing market.

Results from the case studies

Detailed quantitative analysis has been carried out, and interviews conducted with housing and regeneration stakeholders in two case study areas: the northeastern city of Sunderland, and the London borough of Barking and Dagenham.

The key findings that emerge are that:

- Areas where house prices are higher are home to people with higher incomes, better educational outcomes and lower levels of unemployment.
- Even though the absolute income inequality between neighbourhoods in the case study areas is not wide, the linkage between incomes and house prices is strong, as is the resultant pattern of segregation.
- Stakeholders in the case study areas identified the key drivers of income segregation in their areas as linked to patterns of social housing investment and the housing choices made by socially and economically mobile households.

Overall this analysis suggests that house prices, income and other socio-economic indicators are closely spatially related.

A key theme from the interviews with stakeholders in the two case study areas is the extent to which patterns of income segregation reflect not just the economic history of the area, but also the distribution of social housing in the area, even when some of this has passed into individual ownership through policies like the Right to Buy. For example, in deprived areas, as residents' circumstances improved, they tended to move out, potentially concentrating deprivation further. The current focus on social housing provision in areas that are already deprived may further reinforce this inequality. In terms of the future, the stakeholders did not perceive that the current policy framework would be able to tackle this issue.

Recommendations

In order to support greater spatial equity and avoid increased segregation in the future, this report recommends:

- Investment in new social housing (targeted to people on low incomes) should not be directed towards deprived areas or those areas that already have a high proportion of social housing.
- The resources designated for local renewal (that have not been allocated to the Working Neighbourhoods Fund) in the 2007 Comprehensive Spending Review should be directed to improving infrastructure and public services in deprived areas. On the grounds of spatial equity, there remains a strong case for seeking to distribute some of the benefits that are capitalised into wealthier areas' higher house prices.

These area-based interventions would create the potential to improve the amenity value – for example by increasing provision of public services – in deprived areas and challenge spatial inequalities.

1. Introduction

Social and economic disparities between areas have long been a concern for those interested in social justice. In 1875, Engels recognised that, while total parity between places will always be an impossibility, there is a case for intervening to moderate excessive disparities:

> 'Between one country and another, one province and another, and even one locality and another there will always exist a certain inequality in the conditions of life, which it will be possible to reduce to a minimum but never entirely remove.' (Engels 1875)

In 1901, Seebohm Rowntree made the first comprehensive assessment of the spatial dimension of inequality, providing a detailed analysis of concentrated deprivation in the City of York (Rowntree 1901).

Tackling spatial disparities has also been a priority for the current Government. In 2001, it launched a National Strategy for Neighbourhood Renewal (NSNR). At its heart was the goal that, within 10-20 years, no one should be disadvantaged by where they live (Social Exclusion Unit 2001b). However, the Treasury's 2007 Review of Sub-national Economic Development and Regeneration reported that, while there has been some progress in addressing disparities at the local authority level, on some measures the gap between deprived areas and the rest of the country is widening, particularly at the neighbourhood level[1] (HM Treasury 2007b). And the future direction of this agenda is now in some doubt following the decision to replace the Neighbourhood Renewal Fund set up to deliver the NSNR.

Policy remains focused on tackling inequalities between regions. Since 2002, the Government has had a target to reduce the disparity in the rate of economic growth between English regions (HM Treasury 2002). While a renewed focus on regional economic policy is welcome, this target has been criticised because in dealing only with closing the gap between the rates of growth in different regions, the target can be met while allowing economic disparities to remain in absolute terms (Adams *et al* 2003). Recent trends in regional economic performance confirm that the absolute gap in economic performance between regions has indeed grown over the last 10 years (Johnson *et al* 2007).

This paper explores how these processes, related to income segregation, play out at the neighbourhood level, and are shaped by sub-regional, regional and national processes. Patterns of spatial segregation are detailed in two case study areas, with discussion on what is driving differences in these areas.

In each of the case study areas, detailed quantitative analysis has been carried out, and interviews conducted with housing and regeneration stakeholders. Comparable data on incomes and house prices on a small spatial scale is limited. As a result, the data analysis was restricted to a small number of indicators.

The two case study areas, Sunderland, and Barking and Dagenham, have some similarities in that they are both deprived areas that have undergone economic restructuring. With one in the South and the other in the North, they provide a picture of what may be occurring in other areas undergoing 'recovery'. However, they are illustrative case studies and do not necessarily reflect the position everywhere.

Why spatial equity matters

There is a strong case for policy to focus on reducing social and economic spatial disparities. Firstly, this is on grounds of economic efficiency. Raising the economic performance of poorer regions will be essential to meeting the Government's aspiration for an 80 per cent employment rate, and for

1. Neighbourhoods are at a spatial scale below that of a local authority – typically an electoral ward or a Super Output Area (a geographical unit of analysis that overcomes the boundary change and varying population size problems associated with electoral wards). Neighbourhoods, as defined by their residents, do not necessarily match those used for electoral or administrative purposes.

increasing the productivity of the UK as a whole. Significant spatial imbalances also create problems of congestion in faster growing regions, which experience higher land costs with subsequent impacts on housing costs. Under such a scenario, those on lower incomes lose out, wherever they are. If they live in a high-cost, fast-growing area, they struggle to pay for the housing they need; if they live in a poorer region, they face a very high affordability barrier to moving to areas with better economic opportunities.

Secondly, there is a case for territorial justice. Spacial equity matters as a place of residence can also affect outcomes in health and educational attainment. Deprived neighbourhoods do not enjoy the same level of access to goods and services as better off areas. A recent HM Treasury initiative to ensure that residents of poor neighbourhoods have access to free cash machines is a good example of where the state has had to step in to address a spatial inequality in access to services (HM Treasury 2007a).

In addition, even where poorer households have access to the same services, they may be of a lesser quality or more expensive to use. There is anecdotal evidence that the poor have to pay more for services than better off households do, and that, in some cases, the reason for this is that the cost of those services in poorer areas is higher (Save the Children and Family Welfare Association 2007). Evidence from the US has more systematically recorded the additional financial costs incurred from living in a poor neighbourhood (Fellowes 2006).

Thirdly, it is argued that living in a poor neighbourhood in itself has a negative impact on life chances. There is a large body of evidence (which underpinned the NSNR) that shows that people living in poorer neighbourhoods experience significantly worse education, health, employment and housing, and are more likely to suffer from crime and a poor local environment (see, for example, Social Exclusion Unit 2001a).

However, the relationship between places and poor outcomes is not necessarily causal. Separating out any 'neighbourhood effect' (broadly relating to space) from the compositional effect (broadly relating to households and individuals) of concentrated deprivation is very challenging. And the evidence for neighbourhood effects is not necessarily strong (for a review, see Gibbons *et al* 2005). This has led some to argue that the whole mixed communities policy approach is misguided (for example, see Cheshire 2007).

However, this critique assumes that a neighbourhood effect is the only rationale for intervention, whereas a wider spatial equity approach may be desirable for other reasons. A policy of encouraging more mixed communities can be justified on the basis of avoiding any increase in the number of areas suffering from seemingly persistent and concentrated deprivation in future.

Furthermore, mixed communities are a worthy policy objective in their own right. This concept is not new. It was a feature of the visionary approaches to housing and urban planning developed by Joseph Rowntree, Ebenezer Howard and George Cadbury. And in the debate about how to best meet the nation's housing needs after the end of the Second World War, then Housing Minister Aneurin Bevan emphasised the importance of a diverse mix of households living side by side in new council housing (cited in Berube 2005). His argument was that, if members of society from a diverse range of social groups or backgrounds were not present in a community, it had the potential to undermine a collective sense of citizenship or social solidarity.

Recently, policy to reduce disparities between places has had a strong focus on creating mixed communities. This is partly a response to concerns about the slow rate of progress in addressing concentrated deprivation through area-based interventions (like the Neighbourhood Renewal Fund), and also with a view to reducing the potential for concentrated deprivation to arise in the future.

While mixed communities may be a contested concept, there is, nonetheless, a significant degree of consensus behind this approach, and it is now a feature of policy for housing, planning and regeneration. Achieving mixed communities is a key objective of land use planning policies for housing, which state that a variety of housing suitable for a range of different household types is a key characteristic of a mixed community (Department for Communities and Local Government 2006).

The Government is also looking at the potential for increasing mix in the regeneration of large mono-tenure housing estates. Three large housing estates were identified in 2005 as pilot areas for radical interventions that involved remodelling estates through demolition and replacement with a mix of tenures (Office of the Deputy Prime Minister 2005). A further 10 areas have been identified as part of a second round of funding.

At a time when policy for reducing social and economic disparities is at a crossroads, following the Sub-national Review of Economic Development and Regeneration (HM Treasury 2007b), and housing policy is increasingly focused on the goal of creating mixed communities (Department for Communities and Local Government 2007), it is appropriate to examine some of the underlying causes of spatial disparities.

2. The drivers of spatial disparities and economic segregation: a conceptual framework

The pattern of regional economic disparities in England broadly reflects economic history, particularly the economic restructuring during the recession of the 1980s and the nature of the subsequent economic recovery. The North-South divide is proving persistent, and has continued to grow over the last decade (Johnson *et al* 2007). Within this broad regional picture, it appears that the concentration of poverty and wealth at a more localised level has ebbed and flowed, with less polarisation between rich and poor during the 1970s, followed by an extended period of retrenchment of the spatial divisions between rich and poor during the 1980s and 1990s (Dorling and Rees 2003, Dorling *et al* 2007).

It is important to consider the underlying drivers of these patterns if policy is to address disparities. The processes can be examined at both national and local scales. The national drivers of increasing income and wealth inequality, labour market polarisation, declining social mobility and housing market inequality create conditions where processes related to residential choices are likely to be a powerful cause of economic segregation.

At the local level, the interaction of the housing market, residential choices, the economy and labour market, public services, and the quality of the physical environment combine to create positive or negative cycles of neighbourhood value, which, over time, will tend to concentrate in poor or wealthy households (Meen *et al* 2005, Office of the Deputy Prime Minister and Prime Minister's Strategy Unit 2005).

Figures 2.1 and 2.2 on the following pages show how the drivers of segregation at different spatial scales operate. Here, we are particularly concerned with the 'neighbourhood economy'. Similar models have previously suggested circular processes producing deprivation and exclusion (see, for example, Brennan *et al* 2000, Office of the Deputy Prime Minister and Prime Minister's Strategy Unit 2005).

The models set out to capture how policy (Figure 2.1) and the economic drivers (Figure 2.2) influence patterns of spatial segregation. They also seek to capture how these processes interact with those operating at the spatial scales above and below them.

Concentrating in particular on the local and neighbourhood level processes, it is well documented that the interactions of local drivers of segregation are mutually reinforcing, and tend to produce either negative or positive feedback cycles in theoretical accounts of spatial segregation. For example, Schelling (1971) found that, even where people expressed a wish to live in a mixed neighbourhood, the aggregate effect of individual free choice was to create segregated communities.

Other work has indicated that mixed communities are 'stochastically unstable', such that any shock to a mixed community will tend to tip towards segregation. Modelling has suggested that switches between states of being mixed or segregated may exhibit 'tipping': where one factor reaches a particular threshold, an area may suddenly 'take off' or go into a spiral of decline (Meen and Meen 2003). However, we do not know enough about how these processes operate in practice to identify where the tipping points might be, or more generally how quickly they might act.

The local processes identified in Figure 2.2 suggest that the key factors that interact to produce residential segregation are: the income profile of local residents, the local housing market, the quality of the local physical environment (sometimes referred to as a place's 'liveability') and the quality of local public and private services. Clearly, these local drivers, particularly incomes and the housing market, will be heavily influenced by regional and national economic ebbs and flows in the labour and housing markets.

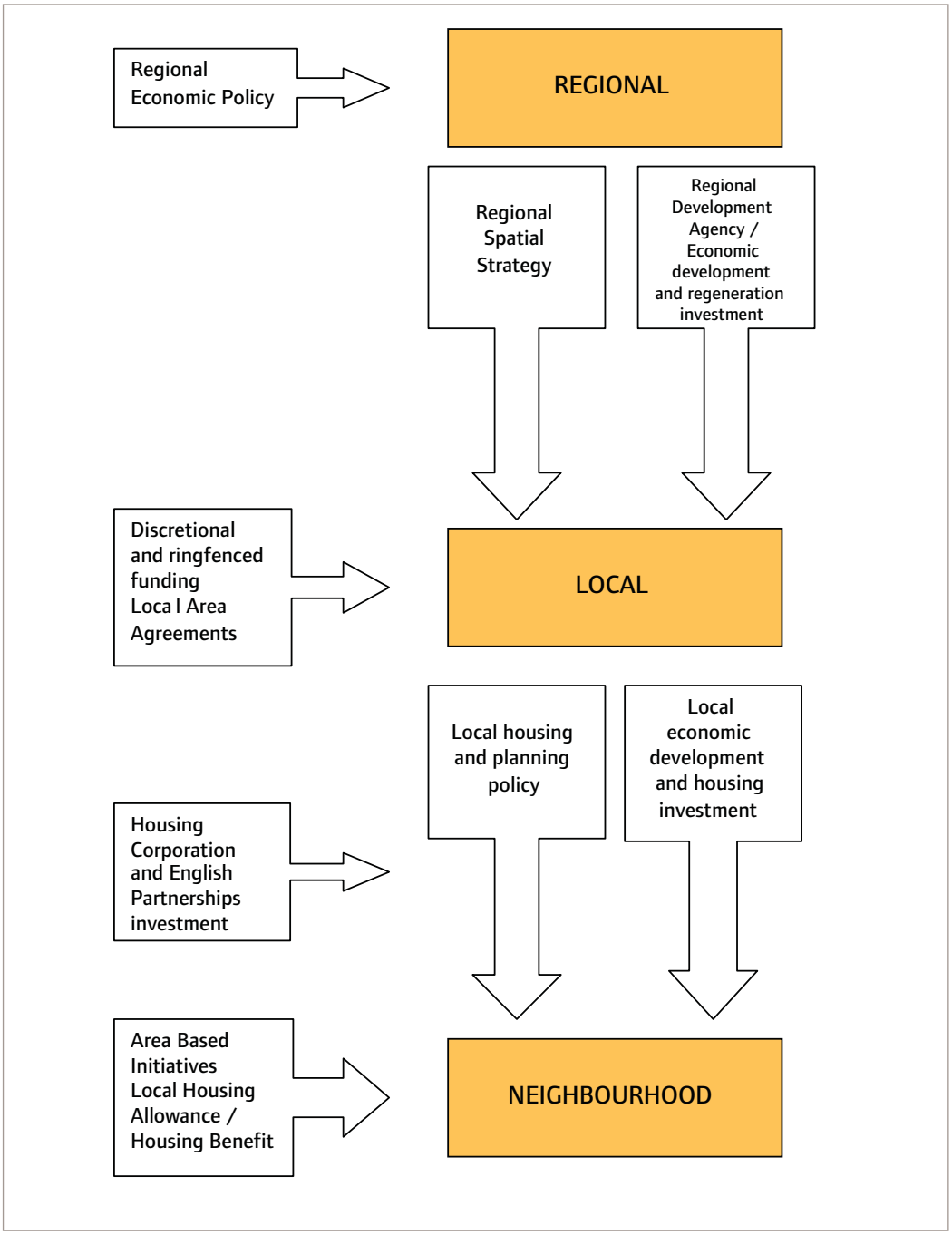


Figure 2.1 Model to depict policy interaction with processes of income segregation

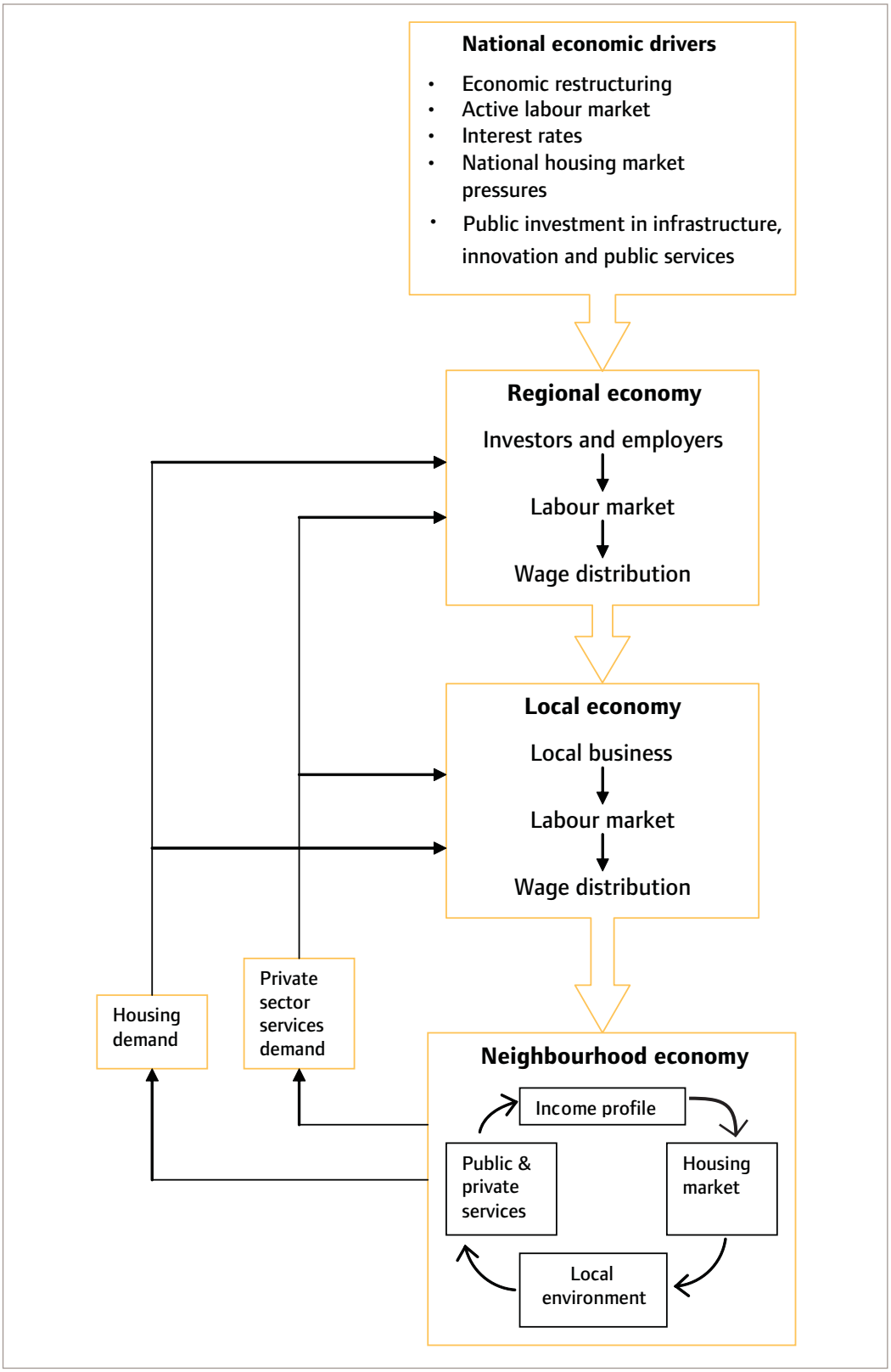


Figure 2.2 Model to depict economic interactions with processes of income segregation

There is a strong body of evidence about the interaction of house prices with other factors at the local level. The majority of research evidence on local factors affecting house prices is based on 'hedonic' analysis of house prices, which can show the value of specific local characteristics that are capitalised into house prices.

The strongest evidence from the UK relates to the quality of local school provision. The availability of local primary schools does not in general have any impact on house prices, but proximity to high-

performing primary schools does. For example, the premium for an average home in London or the South East near a high-performing, oversubscribed school as compared to a weak school has been shown to be £61,000 at 2004 prices (Gibbons and Machin 2006). This represents a 26 per cent difference from the mean property price. (The same research showed that the premium attached to homes close to a high-performing but undersubscribed school was substantially less at £12,000.)

There is also evidence for a wide range of other local neighbourhood values that are capitalised in house prices, including access to local parks, crime rates, proximity to open countryside and urban density (see Cheshire 2007 for a review).[2]

The quality of primary education in a given location is just one example of a service that may increase a place's amenity value. Clearly, primary education will be of particular value to families with young children, but the investment made by people who are seeking to benefit from that value will have a spillover effect into other aspects of the area's value, at the very least through the housing market, but potentially into other aspects of the local economy as well.

In other locations, other aspects of amenity value may be more important. For example, in recent years there has been a significant increase in the number of people choosing to live in city centres. For the young people that make up the majority of city centre dwellers, one of the characteristics they particularly value is access to social and cultural facilities (Nathan and Urwin 2006).

A place with a wide range of amenities can attract residents with higher incomes, and boost the local housing market. But where residents have local access to private sector services, increased spending in the local area can also boost the local economy. These factors are likely to operate in a way that is mutually reinforcing, ultimately producing a feedback cycle. An improvement in amenity value will raise the income profile, boosting the housing market and the local economy, which will further improve the local services offer and amenity value, and so on.

Equally, these processes could reinforce each other in a negative direction. A decline in amenity value would result in those with sufficient income to have choice in the housing market leaving and moving to an area with higher value, reducing the income profile of the area. A lower-income profile would reduce local spending, with a negative impact on the local economy. In the long run, this could also impact on local public services. It may be expected that, if unhindered, areas would tend towards having either a low- or high-income profile.

Focusing only on the process occurring at the local level gives a simplistic view. Other, potentially more powerful factors, particularly economic and demographic ones, operating at a higher level will also drive these processes. For example, labour markets do not operate at such a local level. The best unit for analysis of labour markets is usually considered to be 'travel to work areas', which typically span across a number of local districts, and approximate relatively self-contained areas, where people both live and work.

For example, in those areas that suffered from low housing demand at the end of the 1990s, it was a combination of national and regional economic and demographic trends, combined with low amenity value at the local level that created low-housing-demand neighbourhoods. That is why the model set out above looks at the interactions between different spatial scales, as well as the processes within them.

2. This analysis only looks at the impact on house prices. There is a case for further analysis to explore whether similar patterns for market rents and the level of demand for social housing can be shown.

3. Case studies: Sunderland, and Barking and Dagenham

The city of Sunderland and the London borough of Barking and Dagenham were chosen based on strong indicators of growth (in income) between 2004 and 2006. Additional reasons include:

- They have shown high levels of earnings growth relative to other areas in their regions.
- This growth is from a relatively low base of median earnings.
- One is in the North and one is in the South.
- They both have deprived neighbourhoods.[3]
- They have both received area-based funding.

These locations provide the opportunity to look in detail at dimensions of spatial segregation in areas that are relatively deprived, and to explore the impact that area-based regeneration interventions have had on outcomes in these areas.

The case study areas were selected using the Annual Survey of Hours and Earnings (ASHE) analysis of parliamentary constituencies. Data from ASHE can be used to analyse the distribution of earnings by place of residence, down to the level of parliamentary constituencies. For the following detailed analysis, small area level data – the units of which are subdivisions of local authority districts – has been used. Therefore, the local level analysis is focused on the districts in which these areas fall – Sunderland City Council and the London borough of Barking and Dagenham.

The analysis also draws on data generated from semi-structured telephone interviews with nine stakeholders from the local authority, housing associations and local regeneration bodies in both areas. Combined with the quantitative data, the interviews were purposely designed to consider trends over time, if and how local strategies were tackling income segregation, and spatial disparities, as well as the challenges faced by local delivery organisations.

Sunderland

Sunderland is a large city in the Tyne and Wear City-Region in the North East of England. Sunderland has a population of just over 280,000 people, which has been falling slowly over the last two decades. According to Census data, the majority of the population is white (98.1 per cent), with Bangladeshis the largest minority ethnic group (0.4 per cent) (Census 2001).

As well as the city itself, the local authority covers some of the surrounding area including the new town Washington, coalfield communities to the south of the city and the surrounding rural and suburban areas.

In common with other cities in the North and Midlands, the local economy of Sunderland shrunk significantly in the 1980s and 1990s as a result of the collapse of traditional manufacturing. Like some other northern cities, Sunderland has experienced something of a turnaround in the last decade. There is noticeable economic growth – a result of booms in both manufacturing and services.

Sunderland is relatively economically self-contained, with low levels of commuting in or out of the city, and is relatively independent of the other economic centres in the region.

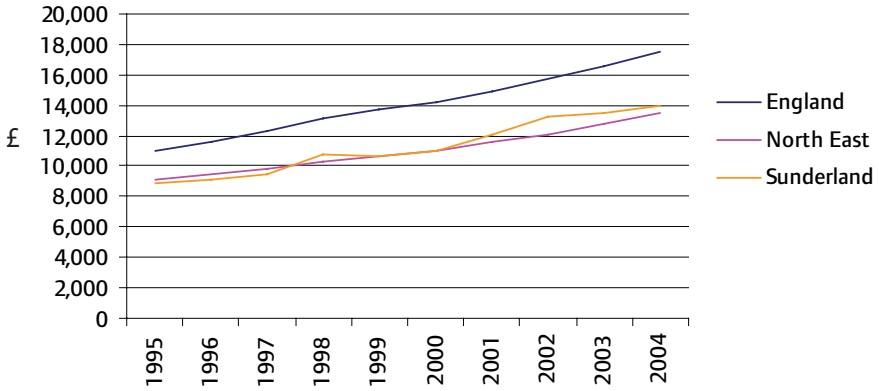
In Sunderland, in 2006, 73.4 per cent of people were economically active, below the average for the wider region (76.2 per cent) and Great Britain (78.5 per cent). The proportion of the population with NVQ level 2 qualifications and above was below the regional and national average, as were the levels of median earnings for full-time workers (figures generated from NOMIS[4]).

3. On the 2004 Index of Deprivation, Sunderland was ranked as the 22nd most deprived district in England, with Barking and Dagenham ranked as the 42nd most deprived (Office of the Deputy Prime Minister 2004).
4. Where the reference NOMIS is given, data has been generated from information from Official Labour Market Statistics at https://www.nomisweb.co.uk/.

The jobs profile in Sunderland shows a higher proportion employed in manufacturing than the regional and national average. The major employers based in the city are in the automotive, aerospace, retail, transport, clothing manufacture and business services sectors. Sunderland's level of economic output per head is below the level for England as a whole, but, since the late 1990s, has increased slightly above the level of the North East (information generated from NOMIS).

Figure 3.1. Unadjusted gross value added (GVA) per head by area at current basic prices 1995 to 2004 (Sunderland)

Source: ONS 2005



HM Land Registry data showed that the average house price in Sunderland was £120,124 in 2007, compared with £130,978 for the North East region and £184,346 for England and Wales (information generated from HM Land Registry website[5]). Sunderland City Council transferred its housing stock to a local housing company in 2001, and 28 per cent of homes in Sunderland are owned by registered social landlords. The remaining 72 per cent are in private ownership (Housing Strategy Statistical Index 2005). Interviewed stakeholders reported that the city's economic and housing development strategies were effectively integrated with the equivalent strategies at the sub-regional and regional level.

The major changes taking place in Sunderland's housing market can be linked to the City Centre Urban Regeneration Company (URC), Sunderland arc, the New Deal for Communities (NDC) for Hendon and East End, and the demolition and replacement of a proportion of the former local authority housing stock by Gentoo, the local housing company formed out of the stock transfer of the City Council's homes.

Sunderland arc is mainly focused on economic development of the city centre and encouraging city centre living, and does not include social housing. Given the availability of social housing relatively close to the city centre, and the need to attract private capital to the development, providing social housing in the city centre was not a priority for the URC.

Through the stakeholder interviews, concerns were raised about the redevelopment of the city centre, and, in particular, about the impact of buy to let and 'buy to leave'.[6] Concerns were also expressed about any attempt to restrict investors in favour of occupiers could have a negative impact on developers' willingness to invest. This reflects wider challenges faced by Sunderland in attracting investment, and that any changes to the regulatory environment might reduce Sunderland's attractiveness compared to other locations.

The NDC and the replacement programme being undertaken by Gentoo have significant elements of mixed tenure in their approaches. In the NDC, attempts were being made to include market housing in the redevelopment of the area to help attract some higher-income residents. Gentoo has made a strong commitment to fully integrating social and market housing (sometimes called 'pepper-

5. http://www1.landregistry.gov.uk/houseprices/housepriceindex/report/
6. Where property investors buy up new homes, but do not let them out or occupy them, in anticipation of them appreciating in capital value over the short term, and being able to sell them on at a profit.

potting'). In some areas, housing associations and private developers have shied away from this approach on the grounds that it might depress the values of the market homes and can make the management arrangements more challenging. Gentoo has reported a positive experience to date.

In the private sector housing market, there was a view among the stakeholders that much of the stock was not consistent with people's aspirations, and that this was contributing to the tendency for economically mobile people to move out of the area. It was felt that the private sector housing offer needed to be improved to address this, and attract higher-income and higher-skilled residents to the City. It was also recognised that the local services offer would need to improve for this strategy to be successful.

Significant efforts, which were sector specific (for example, call centres and construction), had been made to enable economically excluded people to access employment opportunities. It was felt by some stakeholders that these had had some success in ensuring that residents from deprived areas had been able to access opportunities arising from economic growth in Sunderland.

Barking and Dagenham

Barking and Dagenham is an outer London borough on the eastern edge of the city and falls within the Thames Gateway. Barking and Dagenham has a population of 165,700, which has been steadily increasing since 1991. The majority of the population is white (85.2 per cent), with the largest ethnic minority groups being Black African (4.4 per cent), Indian (2.3 per cent) and Black Caribbean (2.1 per cent) (Census 2001).

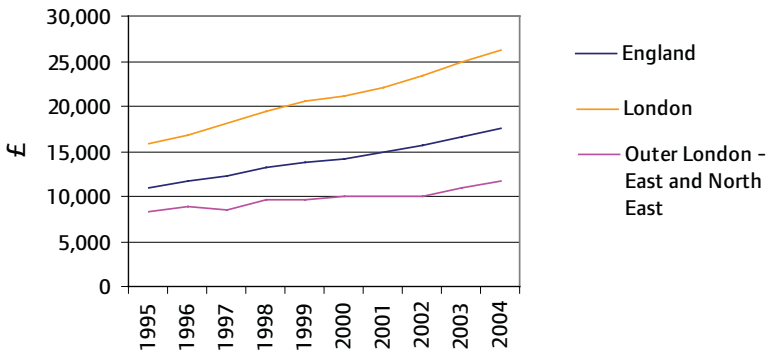
Barking shares a similar economic history with Sunderland, of declining manufacturing, but it has not enjoyed the same success in attracting new employment to the area. Ford remains a major local employer, although it employs fewer people than in the past. However, unlike Sunderland, Barking is part of a much wider regional economy, with good access to employment opportunities outside of the borough.

In 2006, 72.3 per cent of people were economically active in Barking and Dagenham, which was below the average for London (75 per cent) and Great Britain (78.5 per cent). The proportion of the population with NVQ level 2 qualifications (43.1 per cent) was significantly below that for London (60.9 per cent) and Great Britain (63.8 per cent). The average earnings for full-time workers were below the London average but above the national average (figures generated from NOMIS).

The jobs profile in Barking and Dagenham shows a much higher proportion employed in manufacturing (18 per cent) than the profile for London as a whole (only five per cent). The services sector includes a much smaller proportion of finance, IT and other business services (13 per cent) than is the case across London (32.7 per cent). Major employers in the area include Ford, Sanofi Aventis, Hi-Grade, Dairy Crest and Welbeck. The level of economic output per head in Barking and Dagenham is below the average for England, much lower than that for London and is at a similar level and trend as Sunderland (figures generated from NOMIS).

Figure 3.2. Unadjusted gross value added (GVA) per head by area at current basic prices 1995 to 2004 (Outer London – East and North East)

Source: ONS 2005



Note: this data is not available at the level of individual London boroughs. The sub-region 'Outer London – East and North East' includes Barking and Dagenham.

Barking and Dagenham has a growing population, partly because people are attracted to its combination of low house prices relative to the rest of London, and good transport connections compared to other outer London boroughs. The borough has also had a strong, and successful, focus on improving education (from a very low base), which may have helped to attract new residents.

In the west of the borough, particularly, there has been inward migration of people from inner East London. These are economically mobile households, and are more ethnically diverse than the existing residents. This has led to some tensions between ethnic communities as competition for housing and other public services in the borough has become more intense, and as house prices and the population have increased. This was capitalised on by the British National Party at the last local government elections, on the back of a campaign focused on concerns and perceptions about housing supply.

The average house price in Barking and Dagenham (in 2007) was £247,947, below average for London (£351,039), but well above the average for England and Wales (£184,346) (generated from HM Land Registry website). Barking and Dagenham has a high proportion of local authority housing (29 per cent), a small registered social landlord sector (four per cent), with the majority of homes in the private sector (67 per cent) (Housing Strategy Statistical Index 2005).

The most deprived areas of the borough (Figures 3.11-3.14), which include high proportions of social housing, are undergoing a process of estate renewal. This includes some demolition and rebuild, which will include a mix of tenures. Stakeholders involved in this research expressed concern about the practicality of 'pepper-potting' social and market housing in mixed tenure developments. There has been some investment in improving the skills of residents in deprived areas, including by local housing associations, although it was not felt by participating stakeholders that this had yet paid any dividends in reducing worklessness in these areas.

The Barking Riverside area in the south of the borough is the site of a major 10,000 home development, which is part of the Government's plans for increasing housing supply in the Thames Gateway. The development will include a mix of tenures, and the council is concerned to ensure that the new development is integrated with existing communities, and that existing residents should benefit from new housing and associated public services and infrastructure.

The next section is based on descriptive quantitative analysis of data, mapping and regression analysis for a number of different indicators in each of the case study areas. (See Appendix 1 for methodology).

The small area analysis that has been undertaken for the case study areas has focused on a small number of indicators:

- Average income
- Median terraced house price
- Educational attainment
- The number of Job Seeker's Allowance (JSA) claimants.[7]

Ideally, a wider range of social and economic indicators would have been included. However, choice was limited by the data that was available at consistent small area spatial scales and points in time. We have found that the widest range of available data that included house prices and income was at the Middle layer Super Output Area (MSOA) level.[8]

7. See Appendix 2 for details of the variables used.
8. See Appendix 2 for a definition of MSOAs. The introduction of SOAs will mean that in future there will be a wider range of indicators at this scale, and eventually the possibility of doing analysis with time series, which was not possible in this study.

Relating back to the model presented in Figure 2.1, this combination of variables provides an indicator for not only house prices and incomes, but also amenity value through the education data, and deprivation through the JSA claimant count data.

Graphs for the distribution of income and house prices are presented in Figures 3.3-3.6. In Barking, the distribution of house prices is concentrated at the lower end of the scale, while the distribution of income is concentrated around £400-449 per week. For Sunderland, the graphs suggest a wider spread of incomes and house prices, although this is still somewhat skewed towards the lower end of the range.

Figures 3.3-3.6 suggest a greater degree of polarisation in Sunderland than is the case in Barking and Dagenham. To an extent, this might be expected because the local authority boundary of Sunderland covers a greater range of place types including the city itself, Washington, the coalfield communities in the south of the district, and the rural and suburban areas inland. A wider variety of place types would imply a greater range of amenity values capitalised into house prices, which in turn would result in greater income segregation.

This analysis provides an initial statistical picture of the spatial distribution of factors, but, in order to fully understand their spatial pattern of distribution, additional analysis is beneficial. The following maps (Figures 3.7-3.14) plot the data for house prices, incomes, educational attainment and JSA claimant counts by the MSOAs in Sunderland, and Barking and Dagenham.

Figure 3.3. Average house prices in MSOAs in Sunderland

Figure 3.4. Average incomes in MSOAs in Sunderland

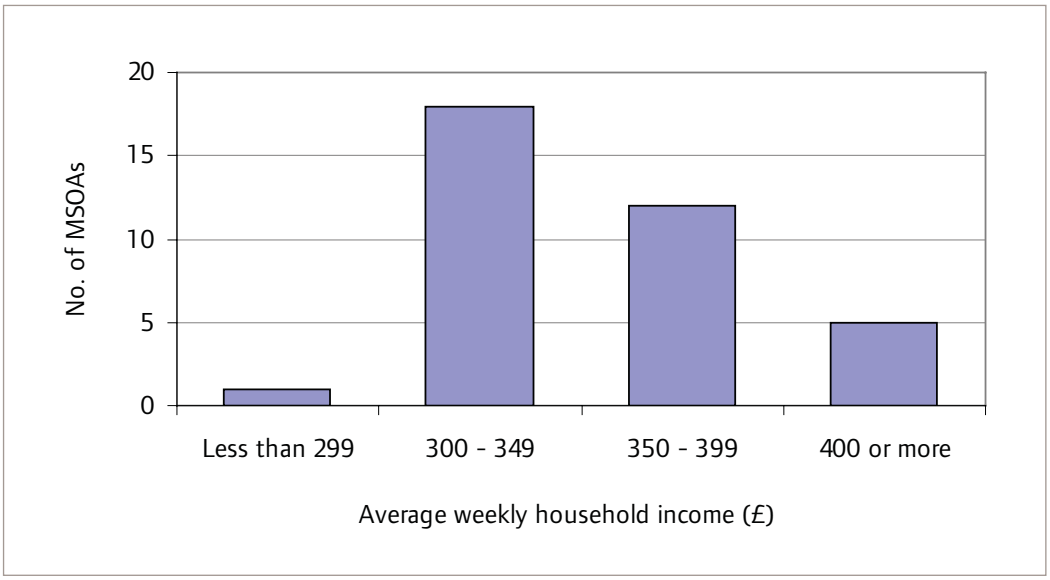
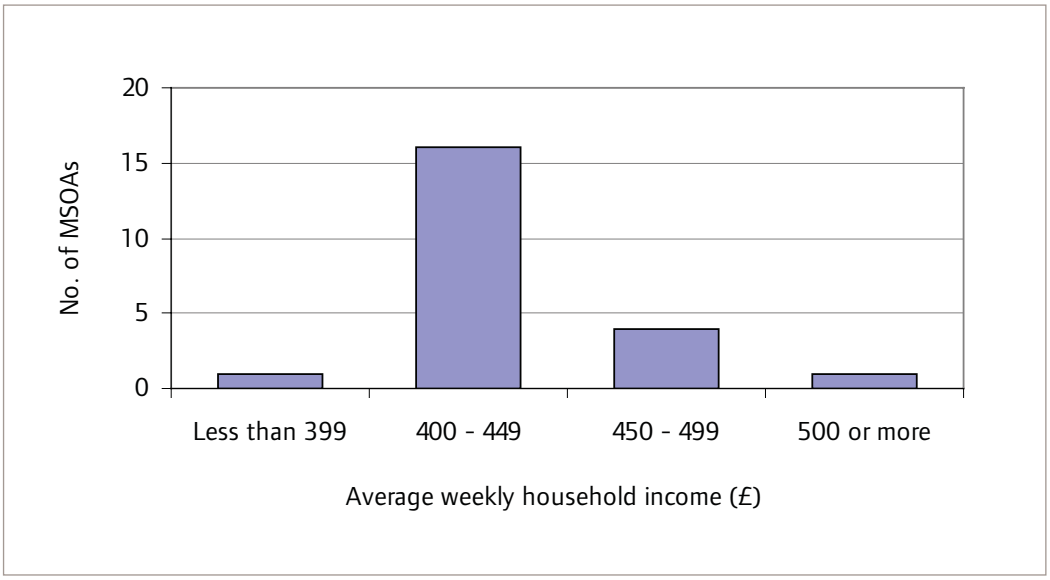


Figure 3.5. Average house prices in MSOAs in Barking and Dagenham

Figure 3.6. Average incomes in MSOAs in Barking and Dagenham



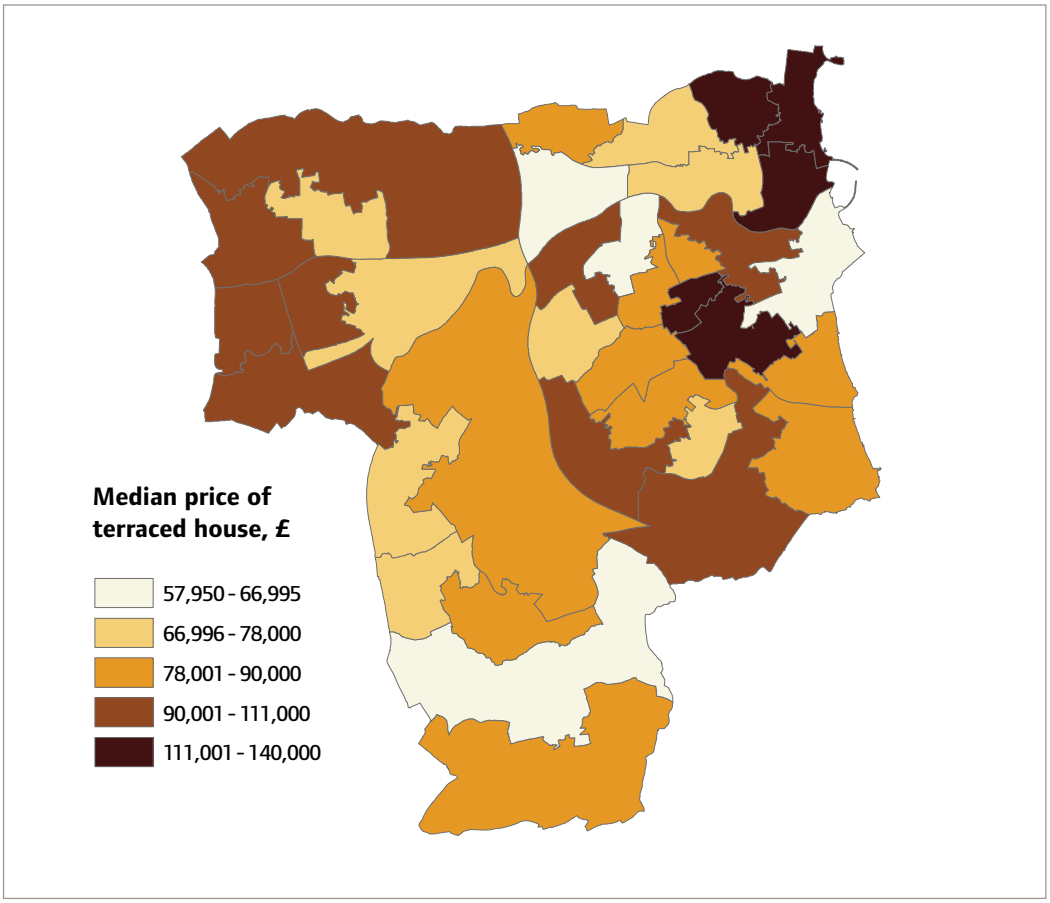


Figure 3.7. Sunderland median terraced house price by Middle layer Super Output Area (MSOA), 2005

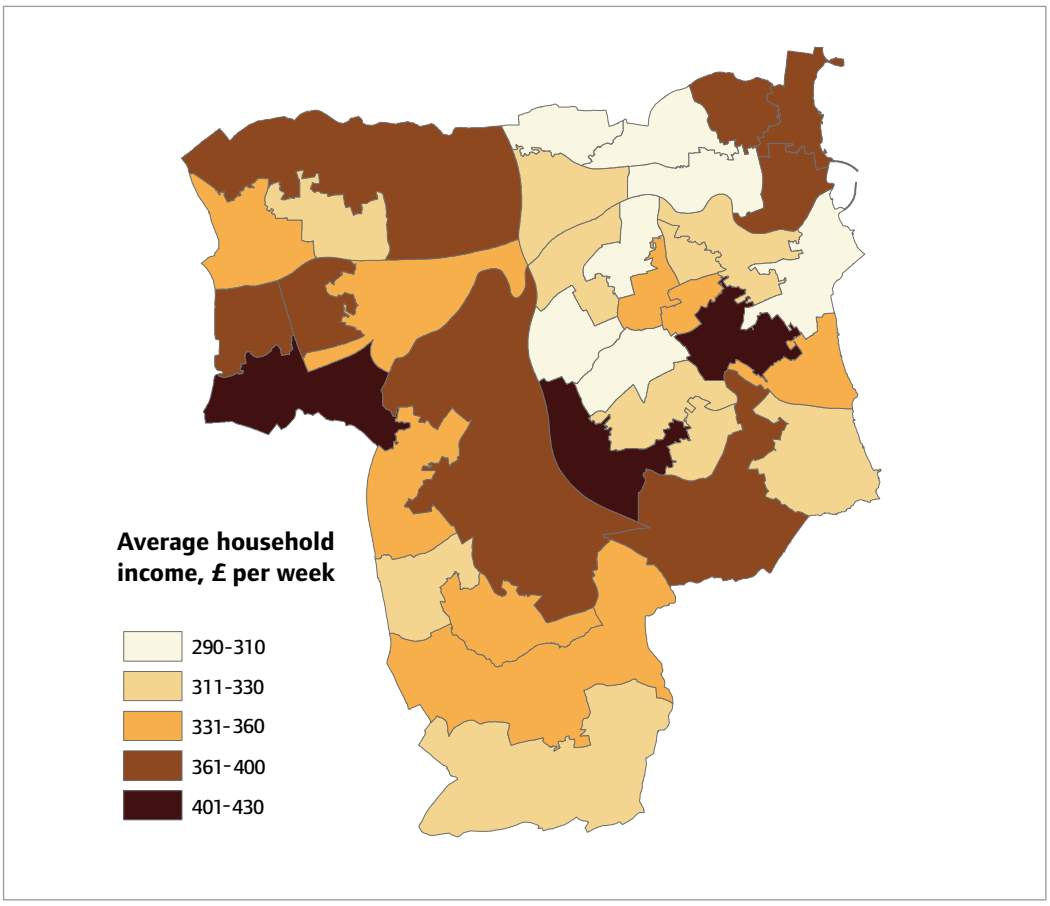


Figure 3.8. Sunderland average household income equivalised before housing costs by Middle layer Super Output Area (MSOA), 2005

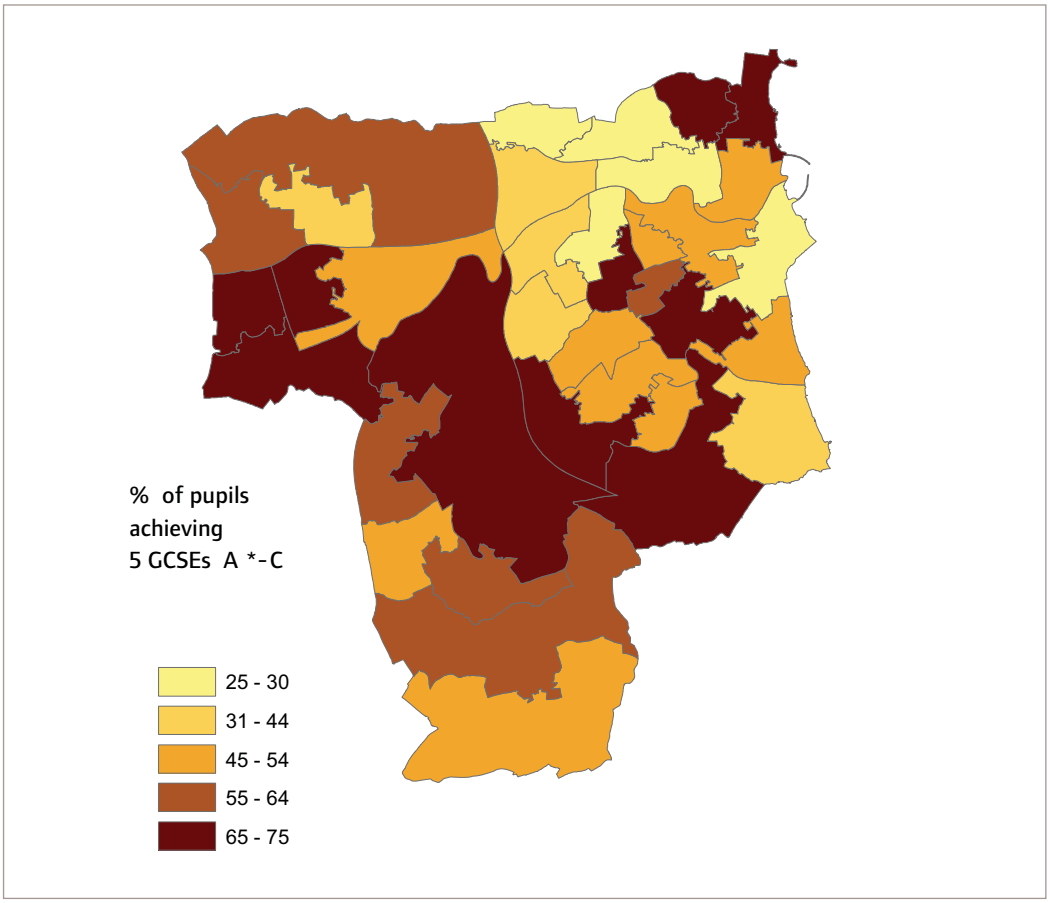


Figure 3.9. Sunderland % of pupils achieving 5 GCSEs A*-C by Middle layer Super Output Area (MSOA) 2005

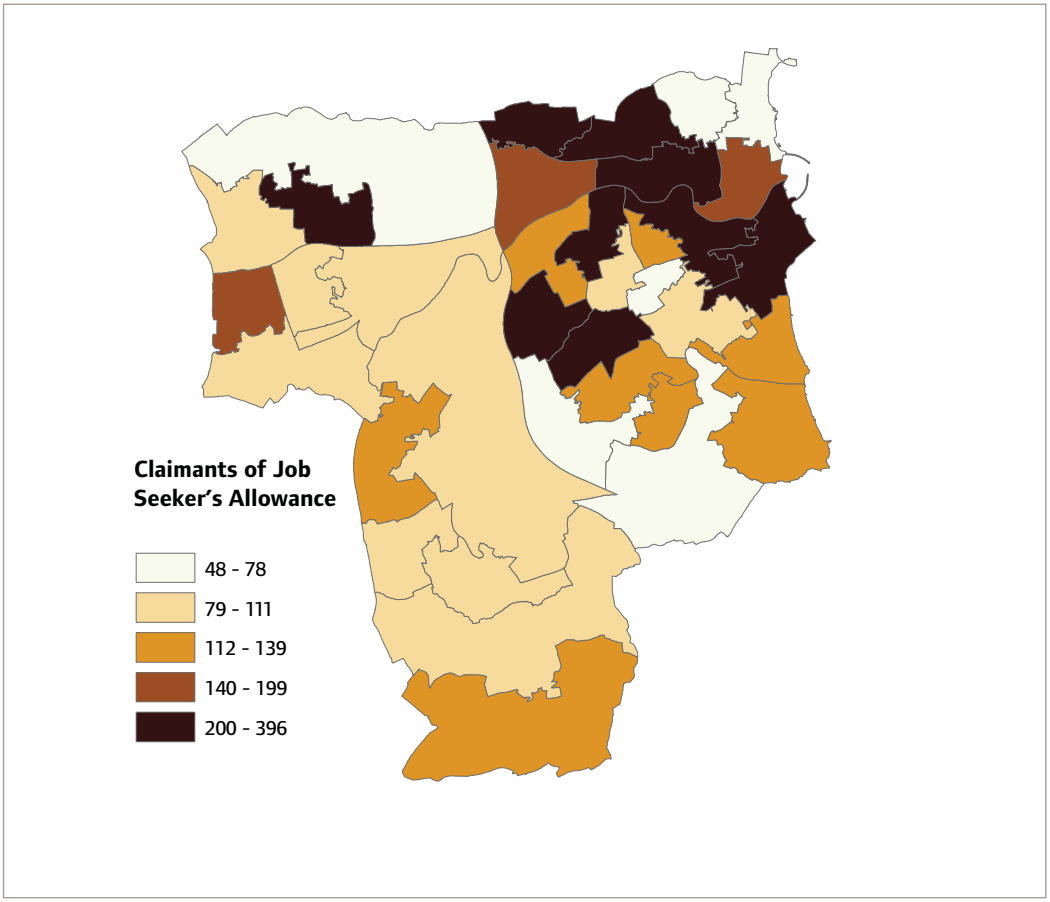


Figure 3.10. Sunderland JSA claimant count by Middle layer Super Output Area (MSOA)

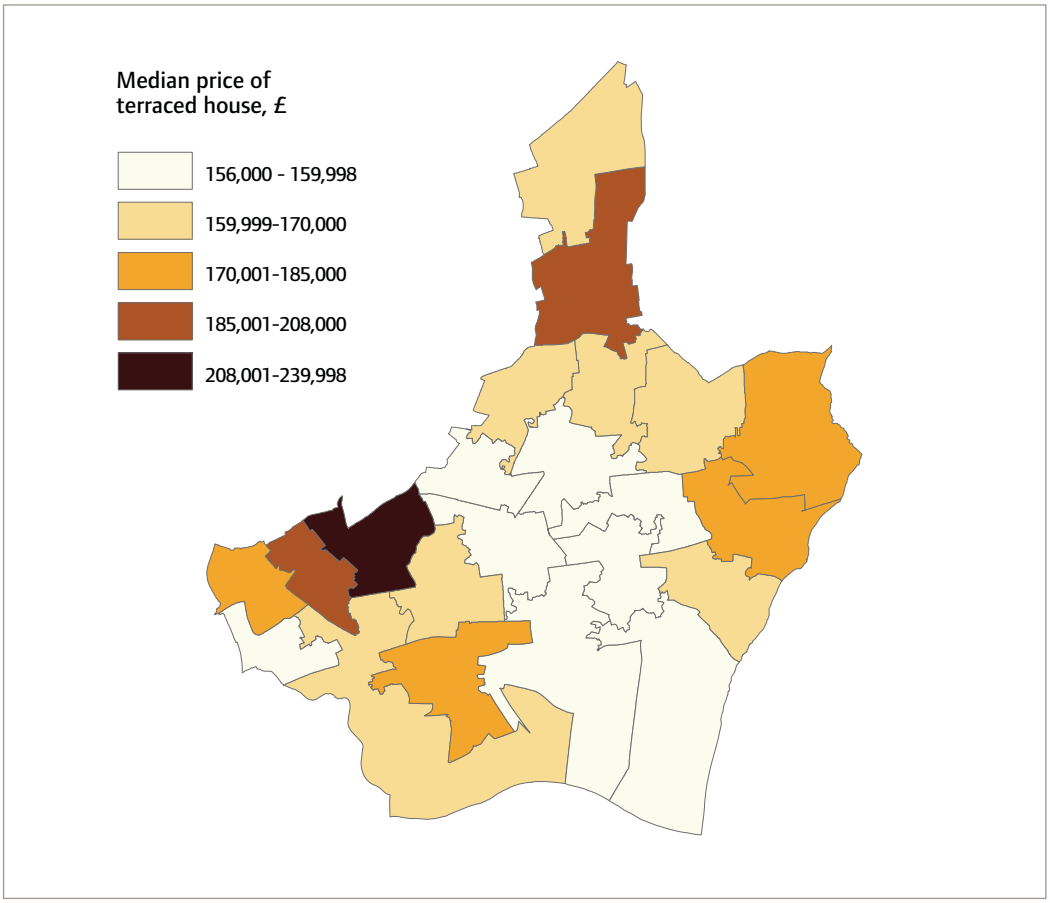


Figure 3.11. Barking and Dagenham median terraced house price by Middle layer Super Output Area (MSOA), 2005

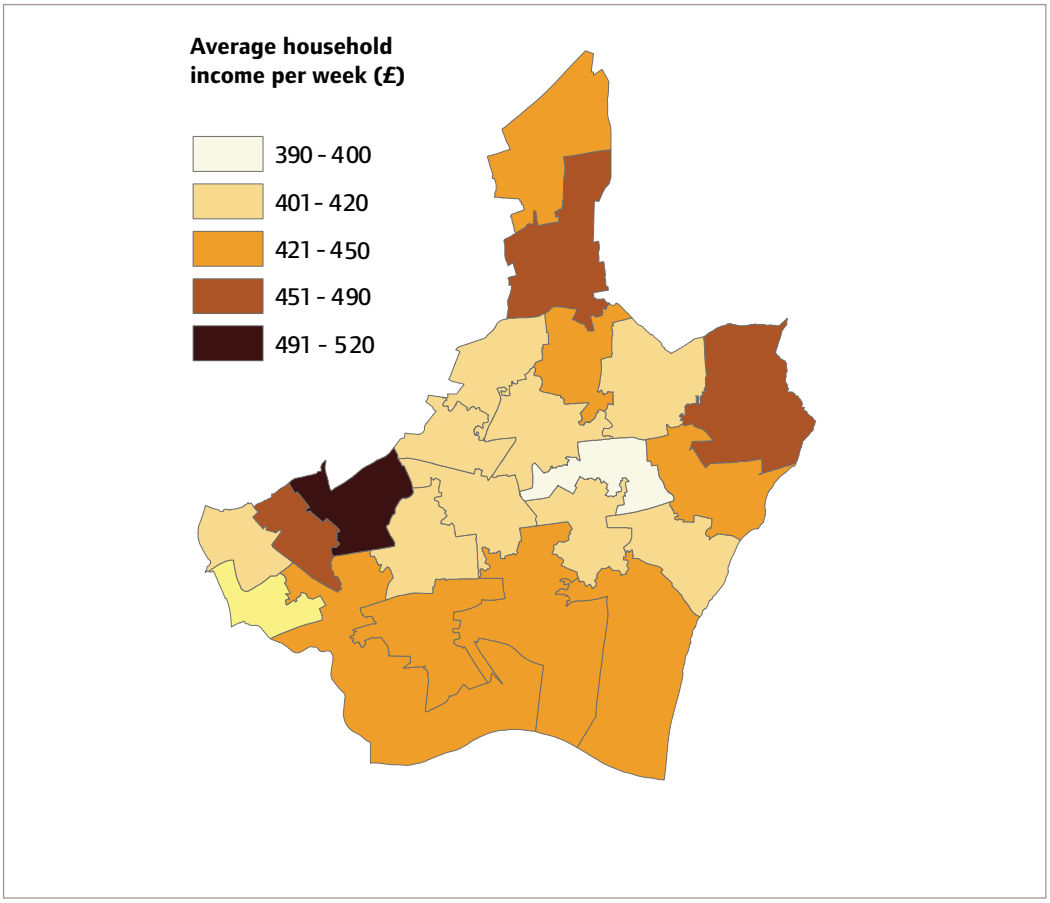


Figure 3.12. Barking and Dagenham average household income equivalised before housing costs by Middle layer Super Output Area (MSOA), 2005

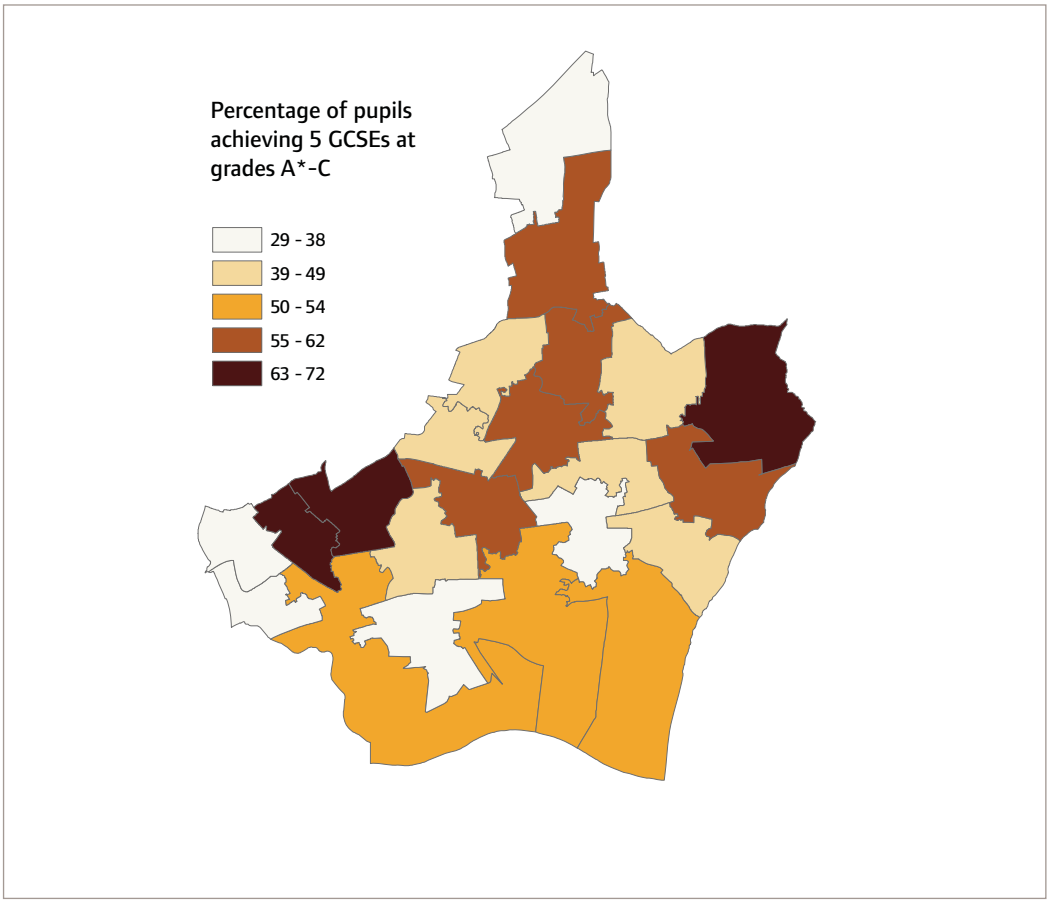


Figure 3.13. Barking and Dagenham % of pupils achieving 5 GCSEs A*-C by Middle layer Super Output Area (MSOA), 2005

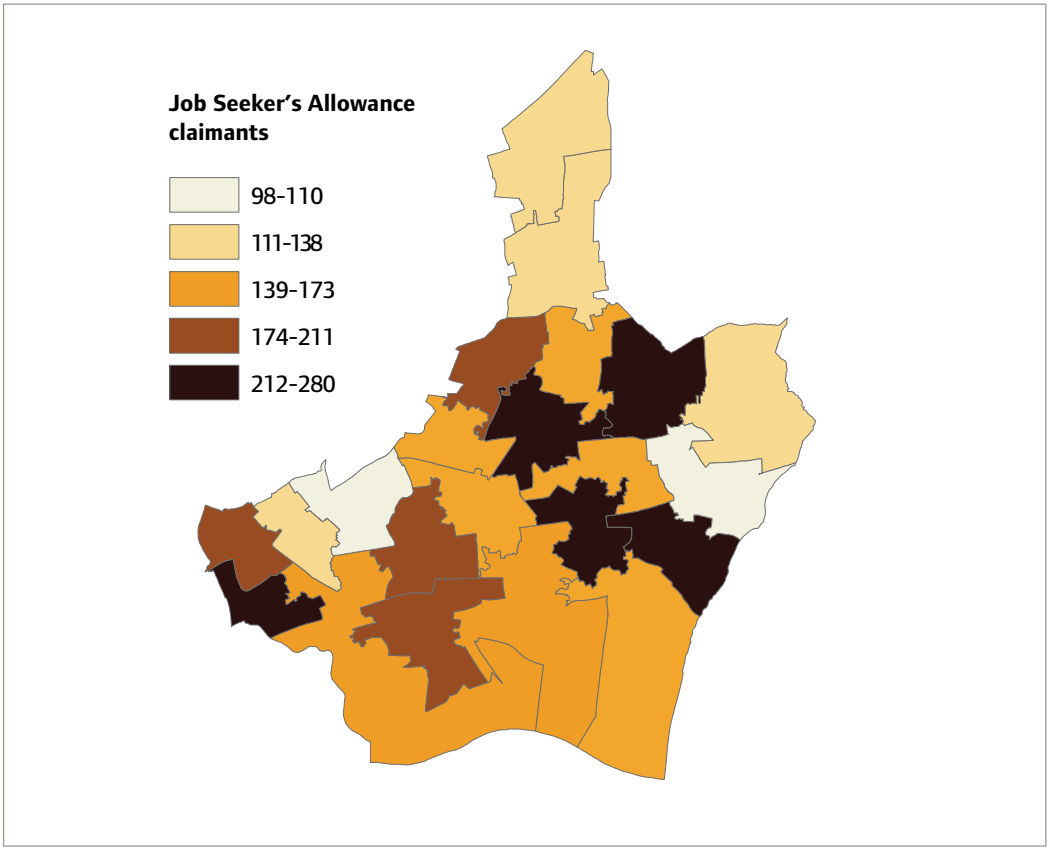


Figure 3.14. Barking and Dagenham JSA claimant count by Middle layer Super Output Area (MSOA), 2005

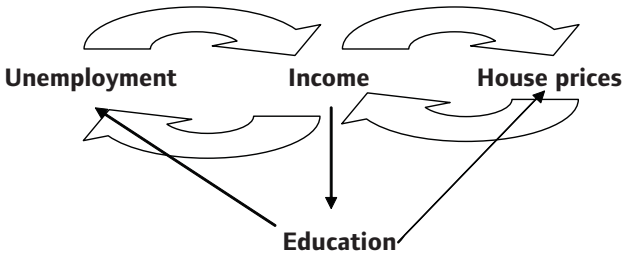
The pattern in the maps for both Sunderland and Barking and Dagenham indicates that spatially there is a strong positive relationship between house prices, incomes and educational attainment, and a negative relationship with the number of JSA claimants.

In Sunderland, there are pockets of high house prices in the north of the city (north east corner of map), to the south of the city and in the west (the area around and to the south of Washington). Low house prices are focused in the east and west ends of the city and to the south, some of which are neighbouring areas to the high house price areas. The distribution of incomes and educational attainment broadly follow this pattern, with the JSA claimant count pattern being the inverse.

In Barking and Dagenham, there are pockets of high house prices in the west and north of the borough. There is a cluster of areas in the centre of the borough with low prices. The spatial pattern of incomes and educational attainment closely matches that of house prices, with an inverse relationship with the JSA claimant count.

The closeness in the pattern of distribution of these indicators would indicate that they are likely to be correlated. The fact that indicators of income and unemployment are linked is not very surprising, but the fact that the relationship is so strong as to follow such similar spatial patterns across all four indicators is striking. Figure 3.15 illustrates the positive feedback relationship between incomes and house prices.

Figure 3.15. Relationship between incomes, house prices, education and unemployment



In applying this model to an area in an upward spiral, higher house prices would mean that only those with higher incomes could move into the neighbourhood, which in turn is likely to push prices up further. Unemployment in the area would fall. Given the link between income and educational attainment, education outcomes would improve, further fuelling house price inflation and reducing unemployment.

To explore the strength and significance of these relationships, more sophisticated statistical techniques have been applied to a wider number of areas. Local authority districts – from different English regions – were selected[9] to provide a wider analytical basis for analysis. The additional areas were: the Wirral, Rotherham, Nottingham, South Norfolk, Rother, and Poole.[10]

Correlations between house prices, incomes, educational attainment and JSA claimant count by MSOA for nine districts confirms the patterns illustrated in the case studies[11]: that areas with higher house prices have tended to have higher incomes and educational attainment and lower JSA claimant counts, and vice versa.

Correlations between these variables at a small area scale substantiates the significance of the relationships that were illustrated by the case study area maps. However, in order for these results to inform additional understanding of the impact that these variables have on each other, further

9. These areas were identified from the analysis of the ASHE data as having a high rate of increase in median earnings compared to other areas in their respective regions.
10. Combining the data from these additional areas with the two case study areas provided a total of 248 observations at MSOA level.
11. See Appendix 3, Table 1 for the correlation statistics.

analysis was required.[12] The results show that the relationship between income and house prices is the only one that is significant when you control for the other factors. This is consistent with our hypothesis that house prices are more closely related to income than other factors. Although causality is difficult to determine because of the lack of availability of wider socio-economic indicators at a similar spatial scale, the results are consistent with the model for income segregation set out earlier.

The stakeholder interviews revealed mixed views about the extent to which income segregation was an issue in each area. Some stakeholders said that it was not an issue, or at least not as much of an issue as in other areas. Others did recognise the problem, and also the link between segregation and differences in life chances and public and retail services quality.

In spite of this mixed picture, there was a strong focus in both areas on both tackling concentrated deprivation and in ensuring that new housing development and the redevelopment of social housing was delivered on a mixed tenure basis. Many stakeholders expressed support for the rationale for creating more mixed communities and its relevance to the challenges they faced locally, rather than it simply being a response to national policy.

A further common theme related to the challenge of economically mobile households. Some stakeholders reported that, in addressing problems in deprived areas, they found that, when residents' circumstances improved, they tended to move out of that area. Other stakeholders stated that this was a wider problem for these areas as a whole, as households become better off they moved out of the area altogether, reflecting their relatively weak economic position compared to other parts of their region.

In terms of the future, beyond the specific mixed tenure interventions mentioned above, it was largely felt that the pattern of residential segregation in both case study areas had not changed a great deal, and was unlikely to do so in the future. In Sunderland, this was due to the impression that house prices were rising across the area as a whole, and that the tendency for upwardly mobile people to move out of the area would continue.

In Barking and Dagenham, although over time there had been a significant shift in the tenure balance away from local authority housing, driven by the Right to Buy, sales of former local authority homes had only a limited mixing effect. This is partly because sales to sitting tenants do not change the income profile of an area in the first instance; and because many former council homes sold under the Right to Buy were being let out to lower-income households unable to access social housing, or being used as temporary accommodation for homeless households.

The fact that the Olympics will be taking place nearby in Stratford was seen as both an opportunity and a threat. It was hoped that Barking and Dagenham might benefit from spillovers from the investment going into Stratford, but that there was also a risk that public investment in infrastructure could increasingly be sucked into the Olympics site at the expense of neighbouring areas. Aside from references to the wider Thames Gateway strategy, stakeholders reported less engagement with regional and sub-regional strategies for economic development or housing than was the case in Sunderland.

12. Regression analysis (Appendix 3, Table 2) was undertaken, which explored the extent to which incomes, education and unemployment (measured by JSA claimant count) were correlated with house prices, while controlling for other factors.

4. Conclusions

Overall, this analysis has shown that house prices, income and other socio-economic indicators are closely spatially related. The maps of the case study areas clearly demonstrate the extent to which areas with high house prices have higher-income residents with better educational outcomes for their children and lower levels of unemployment.

While these relationships have previously been observed, this study shows in detail how they play out into patterns of income segregation at the local level. The fact that the link between house prices and income is so strong, even in local districts with less extreme polarisation, is significant. Discussions with stakeholders have cast light on some of the drivers of these patterns of segregation, and have provided insights into how local strategies are likely to impact on them going forward.

One of the key findings from the interviews with stakeholders in the two case study areas is the extent to which patterns of income segregation reflect not just the economic history of the area, but also the distribution of social housing in the area, even when some of this has passed into individual ownership through policies like the Right to Buy.

While policy is focused on ensuring that within developments there is a mix of tenure, even in recent years the majority of new social housing is being developed in the most deprived areas of the country (Bramley *et al* 2007). Some of this will be as a result of the replacement of existing social housing in deprived areas as part of area-based regeneration programmes. However, there is a risk that, by continuing to focus social housing provision in areas that are already deprived, even if that development is occurring in a mixed tenure development, it may be reinforcing persistent and entrenched patterns of residential segregation.

In order to avoid making the mistakes of the past there is a strong case for, at the local level, targeting new social housing provision in the least deprived areas. This approach will result in higher development costs in some cases, because land prices will be higher. However, a trade-off needs to be made between higher development costs and better outcomes for residents of social housing by avoiding concentrating them in areas that are already more deprived.

A rebalancing of patterns of residential segregation should be achieved through a combination of planning policy guidance for local authorities, and through the criteria applied to assessing bids for social housing grant. Planning guidance should encourage local development plans to include an assessment of socio-economic segregation in the district. It should also seek to moderate this through encouraging the development of on-site social housing in private housing developments in the least deprived areas, and avoiding increasing the supply of social housing provision in deprived areas.

As well as encouraging mixed tenure development, the allocation of social housing grants should take into account whether or not the development will take place in an area that is relatively deprived, and only fund developments in deprived areas where they are part of a wider effort to regenerate.

In addition to the delivery of new social housing, existing spatial disparities can be addressed through area-based interventions. The UK has a strong tradition of adopting such policies, with a mixed record of success. These programmes have recently been reviewed as part of the recent Review of Sub-national Economic Development and Regeneration ('Sub-National Review' or SNR) (HM Treasury 2007b). The review concluded that there was a case for focusing these programmes on a smaller number of areas and more tightly to specific deprived neighbourhoods. It also suggested adopting outcome-based rewards into the funding regime.

Since the SNR, the 2007 Comprehensive Spending Review (CSR) has allocated £2 billion for neighbourhood and local renewal over the period 2008-2010. Subsequently, the Department for Work and Pensions, and Department for Communities and Local Government have announced that the Neighbourhood Renewal Fund (NRF) is being replaced by a new Working Neighbourhoods Fund.[13] In

13. Also replaces the Department of Work and Pensions' Deprived Areas Fund.

line with the recommendations of the SNR, it is focused on a smaller number of areas, and includes a reward element to the funding regime. The fund is also wholly focused on addressing concentrated worklessness, as opposed to having broader regeneration objectives.

There is a strong case for focusing on worklessness, however we cannot say on other key issues that it is a case of 'job done'. While it is true that the returns on NRF investment in terms of reduced worklessness have been particularly disappointing, it is also the case that other key social outcomes are also still lagging behind. Indicators for mortality, education at Key Stage 3 and housing are still not catching up with the national average fast enough, and in terms of educational attainment the gap is, in fact, widening (HM Treasury 2007b).

The SNR makes the argument that, in tackling the problems of deprived areas, 'it is necessary to have an integrated approach which tackles the problems of a weak economic base, poor housing and local environments, and poor public services together' (HM Treasury 2007b: 21). Tackling worklessness, while extremely important for the life chances of residents, will not by itself turn around the long-term prospects of deprived areas. In allocating the remaining resources for local and neighbourhood renewal from the CSR, it is important that investment continues to be made in improving amenity value of deprived areas, for example through investment to improve physical and social infrastructure and public services.

On the grounds of spatial equity, there remains a strong case for seeking to redistribute some of the benefits that are capitalised into wealthier areas' higher house prices. It is important that this is reflected in the Government's forthcoming Regeneration Framework, which will implement the principles set out in the SNR.

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Appendix 1: Methodology

In the analysis for this paper we have used small area statistics to analyse the pattern of incomes, house prices and other factors across the two case study areas. In looking at the extent to which there is significant spatial segregation, we have looked at absolute differences between small areas (in this case, Super Output Areas).

Studies of national trends in segregation have tended to use the index of dissimilarity as a measure of segregation. The index is a measure of the proportion of a given minority that would need to move across wards (or other small area spatial scale) in order to obtain a perfectly even distribution of that group across a wider area (often a local authority district). (See Dorling and Rees 2003 for an explanation of the index of dissimilarity.)

For this study, we have not used the index of dissimilarity, primarily because calculating the index requires that you have individual household-level observations with spatial information at the small area level. Often the data that is used for this analysis comes from the census, which is the best source of household level information that can be analysed at the small area level. However, the census does not record incomes, and so these studies have used proxies for income, such as employment status (for example, see Meen *et al* 2005).

Given our focus on incomes we wanted to look at income itself, rather than proxies. In the absence of household level data we have used data for household incomes for small areas produced from modelling, which combines census data with data from the Family Resources Survey 2004/5. This cannot be used to calculate the index of dissimilarity because the data is for average household income across the whole area.

Secondly, the index of dissimilarity is a good way to identify the extent to which a minority is concentrated in one ward as opposed to another within a given district. However, it does not tell you anything about the spatial pattern of that segregation. For example, the implications for policy of a chequer board pattern of segregation within a city, as opposed to a broad North-South split, would be very different. But the index of dissimilarity would not discriminate between these two scenarios. Given that we are looking at just two areas, as opposed to the whole country, the pattern of income distribution and other factors is a significant issue.

The approach that we have taken for our analysis is descriptive quantitative analysis of data, mapping and regression analysis for a number of different indicators.

Appendix 2: Data sources

Middle layer Super Output Areas

Super Output Areas (SOAs) are a new geographic hierarchy, designed to improve the reporting of small area statistics in England and Wales. Their first statistical application was for the Indices of Deprivation 2004. There are three layers of SOA: Lower, Middle and Upper. The Middle layer SOAs have a minimum population of 5,000 and a mean of 7,200. They are built up from groups of Lower layer SOAs, and constrained by the 2003 local authority boundaries used for 2001 Census outputs.

Income

For income model-based estimates of income for Middle layer Super Output Areas (MSOAs) were used. The estimates have been produced using a modelling methodology that enables survey data to be combined with Census and administrative data. The survey data used within the modelling process was obtained from the 2004/05 Family Resources Survey (FRS).[14]

Source: Office for National Statistics Neighbourhood Statistics Service (ONS NESS)[15]

House prices

The house price data was for changes of ownership by dwelling price for MSOAs, 2005. The median prices for terraced houses were used to avoid mix effects between areas. As the data is for the prices of property that have been sold in 2005, the average value could be skewed by the particular mix of property types coming to market in that period. Focusing solely on terraced house prices avoids the problem of mix effects, and gives a more consistent measure of housing values.

Source: ONS NESS

Education

Educational attainment was based on data for Key Stage 4, using the proportion of 15-year-old pupils achieving 5 or more A*-C grade GCSE/GNVQ results (referenced by location of pupil residence) for MSOAs.

Source: ONS NESS

Job Seeker's Allowance claimant count

JSA claimant counts for MSOAs at January 2005 were used as a measure of unemployment.

Source: NOMIS

14. The FRS collects information on the incomes and circumstances of private households in the UK. Information on the FRS is available from www.dwp.gov.uk/asd/frs/
15. Data generated from ONS, Neighbourhood Statistics website, www.neighbourhood.statistics.gov.uk/dissemination/

Appendix 3: Correlation and regression analysis data by Middle layer Super Output Area (MSOA) for nine English regions

Table 1: Correlation between house prices, incomes, educational attainment and Job Seeker's Allowance claimant count by Middle layer Super Output Area (MSOA) for nine districts

	Income	Educational attainment	JSA claimant count	House prices
Income	1.0000			
Education	0.6959	1.0000		
	(0.0000)			
JSA claimant counts	-0.6213	-0.6145	1.0000	
	(0.0000)	(0.0000)		
House prices	0.7318	0.4465	-0.4046	1.0000
	(0.0000)	(0.0000)	(0.0000)	

Table 2: Results for linear regression of house prices, income, educational attainment and JSA claimant count by Middle layer Super Output Area (MSOA) for nine districts

House prices	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
Income	644.0449	50.47831	12.76	0.000	544.6015	743.4884
Educational attainment	-238.5111	184.7563	-1.29	0.198	-602.4853	125.4632
JSA claimants	24.34111	30.00395	0.81	0.418	-34.7674	83.44962
_cons	-119708.2	19365.6	-6.18	0.000	-157858.8	-81557.46