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### **Is Britain Pulling Apart? Area Disparities in Employment, Education and Crime**

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# Is Britain Pulling Apart? Area Disparities in Employment, Education and Crime

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## **Abstract**

This paper explores the changing extent of concentrated worklessness and deprivation in Britain's communities over the last twenty years and seeks to identify what shapes patterns of relative affluence and deprivation. The paper goes on to explore the evidence that there are lasting consequences from concentrated deprivation for the residents, including children. The paper addresses issues of employment, educational outcomes and crime victimisation. Looking at the available evidence from the UK and abroad, the evidence suggests that concentrated deprivation has little effect on employment opportunities, (e.g. moving people to more affluent neighbourhoods would make little difference), has modest effects on children's educational outcomes and propensity to get involved in deviant behaviours but substantial effects on crime victimisation. The paper then concludes on what policy agendas could be developed to address concentrated deprivation and above all its consequences on residents' outcomes.

**Keywords:** neighbourhoods, employment, education, crime

**JEL Classification:** R23; J61; I21

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## 1. Introduction

Geographic disparities in economic and social outcomes, from the broad regional to the community level, have been a concern to those seeking social justice for centuries. The heavy geographic imbalance associated with the early 1980s recession and subsequent recovery only heightened these concerns ahead of the Commission on Social Justice's report. In essence the concerns have two components. The first is a simple sense of territorial equity, namely that people should not be disadvantaged by where they live. The second, deeper, concern is that spatial imbalances can have substantial economic and social costs. The key costs are:

- The economic costs from congestion in areas of intense economic activity.
- The costs resulting from the need for economic tools, such as higher interest rates, to be required to ease inflationary pressures generated in boom areas while other areas are characterised by excess non-employment. (Clearly a single, national interest rate can not take account of such regional differences).
- The costs arising from the effect of concentrated deprivation on employment, crime, education and other outcomes for residents.

This last grouping is usually called 'neighbourhood effects'. These are highly localised community level concerns, whereas the first two groups above impact at a regional, city-regions or local labour market area levels. There is no single agreed definition of 'neighbourhoods', but often micro areas such as wards have been used as a proxy.<sup>1</sup>

This chapter focuses on policy issues around spatial imbalances in outcomes both at the regional or city level and the neighbourhood or community level. At the more aggregate level we consider only employment or its absence while at neighbourhood level we explore three

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<sup>1</sup> There are more than 10 thousand wards in the UK, and these vary markedly in size: from populations of less than 1 thousand to over 30 thousand. For the 2001 Census of Population, the finest level of spatial disaggregation is the output area, with an average working age population of around 335. Local labour market areas also vary considerably in size: the minimum working population size of a Travel-to-Work Area (TTWA) is 3.5 thousand, while in metropolitan areas TTWAs can have working populations of over 500 thousand and well over a million in the case of London. For further details of UK 'geographies' see <http://www.statistics.gov.uk/geography/>

issues: employment, crime and education. To make the exercise tractable we have to leave other interesting topics such as incomes, productivity and health to one side.

The chapter opens by assessing recent trends in the geography of economic activity and asks why persistent differences in employment exist at sub-national levels. In particular we seek to assess why migration of people to jobs - or jobs to people - does not even out broad level disparities. Secondly, and at the more micro 'community' level, we assess the evidence of how disparities in levels of deprivation develop through the sorting of certain population groups into certain areas and whether this concentrated deprivation does in itself affect the economic and social outcomes of their residents. Here we focus on whether or not there are substantive 'neighbourhood effects' in employment, crime and education. The final section of the chapter makes policy recommendations based on these findings.

## **2. Changes in employment at the regional and city level**

Population changes within England and Wales in the 1990s were marked by a number of trends. At the regional level a population drift to the South and East of England continued; while at a sub-regional level the picture was one of counter-urbanisation, with city decline, movement toward small town and more rural settings, and greater commuting to work. This offers a *prima facie* case for regional imbalances creating and reinforcing congestion costs. While population growth has been more marked in the South and East, the recent recovery in employment rates has been less clearly focused. Unemployment rates have converged markedly across regions in the last decade, but this in part reflects increasing differences in *inactivity* across regions, with levels of disability showing a particular skew. Hence overall employment (and non-employment rates) form a better guide to regional labour market performance. Table 1 shows that the regional employment situation through the 1990s has been far more balanced than for a very long time (see Jackman and Savori (1999) for a historical perspective). While all regions show increases of over 2.5 per cent, the pattern of the best and worst performers bears little relation to any North-South divide. London, the North East and East Midlands have performed the least well and Wales, Scotland, the West

Midlands and the South West the best.<sup>2</sup> Yet the bigger picture is one of a widespread improvement in the employment situation overall, but no reversal of the regional imbalances which were so obvious in the early 1990s. While the situation is far better than at the height of the 1980s boom, large cross-sectional regional imbalances remain intact.

**Table 1: Percentage of working age population in employment by region, 1993-2003**

	1993	1997	2003	Change 1993-2003
North East	65.4	66.8	68.1	2.7
London	67.5	70.3	70.3	2.8
East Midlands	72.9	75.3	75.9	3
Yorkshire & Humber	70.7	70.5	74.1	3.4
Eastern	74.4	75.9	78.7	4.3
South East	74.8	77.9	79.5	4.7
North West	68.4	69.9	73.4	5
South West	73.2	77.1	78.4	5.2
West Midlands	68.8	72.7	74	5.2
Scotland	69	70.3	74.3	5.3
Wales	65.6	68.2	72.6	7

Source: ONS (2004) Labour Force Survey

*Why are employment differences across regions so persistent?*

Standard labour economics suggests that regional imbalances in employment should be eroded, either by the migration of people to jobs or, attracted by lower labour costs, the movement of jobs to depressed regions. This process of adjustment is either not happening at all, or is glacial in pace in the UK. This stands in marked contrast to the situation in the

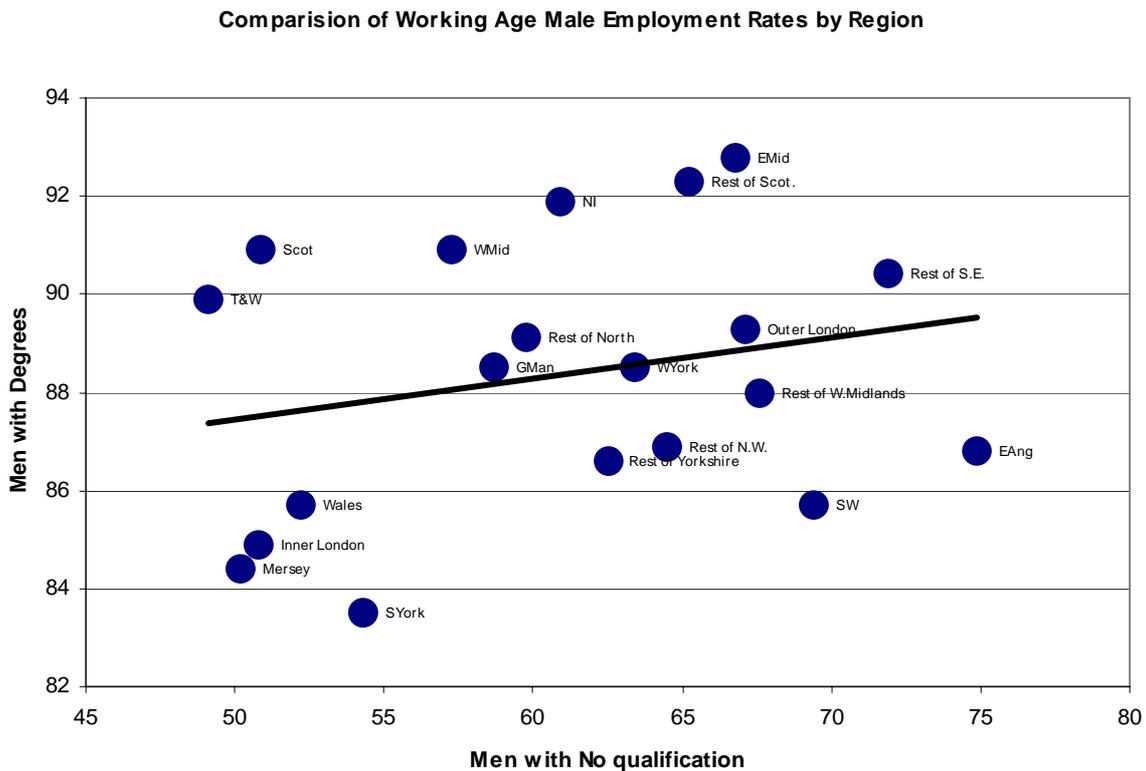
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<sup>2</sup> A regression of the regional change in employment against the initial level has almost no predictive power (an r-squared of just 0.003) and the coefficient on the initial level is an insignificant 0.0209. This suggests no convergence or divergence in employment rates over this period.

United States, where state differences in unemployment are fairly short lived (Blanchard and Katz 1992).

One should, however, note that the question needs defining carefully. Regional differences in employment are almost non-existent for *graduate* labour and extremely marked for those with no formal education qualifications. Figure 1 shows this picture for the regions, with the major metropolitan areas split out to show the major cities in detail. While employment rates for men with no formal qualifications differ by more than 25 points, from the depressed areas to the affluent East Anglia and South East, for graduates the maximum difference is just 8 points (Gregg *et al* 2004). What is more, there is barely any relationship between employment rates for the least and most qualified across regions. So the real question is: why are there such persistent differences in employment among low skilled labour, which are almost completely absent for educated labour?

**Figure 1: Comparison of working age male employment rates by region, spring 2003**



Source: ONS (2004) Labour Force Survey

Note: excludes full-time students

*Moving the low skilled to jobs?*

So how can we explain these patterns? One possible explanation could be patterns of residential mobility. Overall such mobility is quite high in the UK compared to other European countries and strongly pro-cyclical; that is, regional mobility occurs mainly in periods of strong growth and job creation (Gregg *et al* 2004). This research also highlights that that regional mobility is only marginally higher among the unemployed than the employed, but it is much higher (2-3 times) among the better educated than the least qualified. This evidence combines to suggest that people migrate across regions in response to job openings, rather than due to concentrated regional unemployment, and that the better educated are far more prone to move region in response to available job openings.

The same work also suggests that most job-related mobility is due to people securing a job and then moving, rather than speculative moves followed by attempts to secure employment (ibid). But this is harder for the lower-skilled. While national newspaper adverts or specialist

business magazines create easy opportunities for graduates to locate openings in other regions prior to moving, for the less-skilled this is less the case. For these groups most recruitment occurs via word-of-mouth, adverts in windows or local job centres. In short, an inability to secure knowledge of job opportunities outside their local area presents hurdles to migration by the less skilled.

At the same time, large differentials in regional housing costs and the high cost of housing as a share of income in the UK make speculative moves to boom areas very risky. Indeed, the high differentials in regional housing costs restrict moves to boom areas for the low-skilled even if a job is secured in advance. Graduates can trade down house size in moves, but there is little for the less skilled to trade down into (in the US trailer parks may serve this purpose).

An argument often made is that social housing may also restrict the mobility of the least educated. Social housing tenants receive a housing subsidy (the lower rent available to social renters relative to other tenure types) and it is very difficult to take this subsidy on moving to a new local authority. So it is argued that the potential loss of this subsidy discourages tenants from moving to areas with more job openings. However, this lower mobility among those in social housing is common to those in receipt of the subsidy and those, mainly offspring, who are not (ibid). This suggests other barriers to mobility (including non-economic factors such as family connections and cultural factors) are probably more important (Kitching 1990, Hollywood 2002).

#### *Moving low skilled jobs to low demand areas?*

If low skilled labour is close to being geographically fixed, then it is important to ask why low skilled jobs are not moving to low demand areas. In theory this would happen only if the wages are substantially lower and the potential jobs are producing goods and services that can be traded over a wider geographic area. Manufacturing jobs have traditionally met these criteria for the less skilled, but they have grown more and more scarce (see chapter 3). While there has been substantial growth in jobs in low wage occupations, such as the personal service occupations, and there are new job opportunities for the less skilled, most of these are in services directly related to consumption in the local area (Goos and Manning 2003)<sup>3</sup>. This

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<sup>3</sup> The expansion of call centres is an exception to this pattern, although these jobs have potential for outsourcing at a global scale.

means that many low skill jobs are servicing increased consumption of retail and leisure goods for more affluent consumers, and as a result are located in the same areas as the expanding managerial and professional opportunities.<sup>4</sup>

As a consequence there is little opportunity for the less skilled to migrate to boom areas and relatively few mobile low skilled jobs to migrate to depressed regions. Hence, taking account of both economic and non-economic factors, immobility of the less skilled is often the result of rational choice given the constraints that exist in Britain.

*When do employment rates for the low skilled recover?*

The argument above suggests that when an area experiences a downturn, many of the better educated (including new school leavers) migrate to areas offering job opportunities, while the less skilled do not. This can leave a residue of high worklessness concentrated on the less qualified in deprived areas. Equally, and more positively, it would suggest that if an area sees a marked upturn, a tightening labour market and inwards migration (or lower outwards migration) of the well educated will create opportunities for the less skilled (Gregg and Wadsworth 2003).

However, the picture is more complicated. In the early part of a recovery the intermediate education grouping (below degree level but not among the least educated third of the country) benefit most from the increased employment opportunities and the gap between the least skilled and the rest actually *widens*. This continues until employment rates among the intermediate group start to approach the levels observed for graduates and only then does job creation benefit the least skilled disproportionately, as shown in table 2 below.

**Table 2: Area economic performance and employment rates of less skilled**

High Employment Areas	Middle Employment Areas	Low Employment Areas
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<sup>4</sup> Looking to the other end of the labour market: because there is no excess of graduate labour even in depressed areas/regions there is no downward pressure on graduate wages.

		1993	2002	% point change	1993	2002	% point change	1993	2002	% point change
Area	Employment Rate	76.6	81.1	+3.5	70.9	73.5	+3.6	64.6	70.3	+5.7
<b>Men</b>										
	Low qualifications	73.9	79.5	+5.6	61.6	62.4	+0.8	52.8	51.6	-1.2
	Low qualifications 25-49	79.6	84.9	+4.7	69.8	70.6	+0.8	58.9	53.5	-5.4
	Low qualifications Social housing	57.6	65.0	+7.4	38.7	35.7	-3.0	32.2	25.3	-6.9
<b>Women</b>										
	Low qualifications	59.1	64.8	+5.7	52.4	50.8	-1.6	46.1	50.3	+4.2
	Low qualifications 25-49	61.8	64.5	+2.2	55.7	53.7	-2.0	47.8	50.2	+2.4
	Low qualifications Social housing	41.7	45.5	+3.8	32.0	29.1	-2.9	29.8	32.9	+3.1

Source: Gregg and Wadsworth (2003). Low qualifications comprise bottom 30 per cent of education qualifications in each year. Social housing includes both Council housing and housing associations.

Table 2 shows employment change between 1993 and 2002 for three groups of areas. The first group includes those where employment was already high in 1993 (the South East, excluding London and East Anglia); the second is an intermediate group (the North of England, excluding Tyne and Wear, North Yorkshire and Greater Manchester); and the third covers 'depressed' areas where employment was very low in 1993 (Tyne and Wear, Merseyside and Strathclyde). Employment growth was strong across all these areas and, in this time period, was actually strongest in those which were most depressed in 1993. What is crucial though is what happened to employment amongst the 30 per cent of the population with the lowest qualifications. In depressed and intermediate areas employment rates in this group fell, or saw very little change – except for the case of women in depressed areas. In contrast, in areas where the labour market was already tight in 1993 employment growth was very strong among the less qualified, even outperforming the average. This means that the employment gap between the less skilled and the rest closed in these tight labour markets. A little further investigation suggests this occurred when employment in the area reaches

around 75 per cent. The government has recently stated an aim to reach an 80 per cent employment rate nationally (DWP 2005), however a rate close to this will be needed *in every region* for the low skilled start to disproportionately get employment.

### **3. Neighbourhood Deprivation**

#### **What shapes the geography of neighbourhood deprivation?**

Regional differences in employment rates are marked. Yet there is often more variation between local areas within a region than between regions themselves. What is the evidence that this neighbourhood level of geographic concentration of deprivation is changing? Do such concentrations make any difference to the key outcomes for the residents? In this section we consider employment but also broaden our focus to education and crime.

While differences in these outcomes do clearly vary by people's residential area, robust evidence of causal relationships between community and individuals is difficult enough to identify, in even the simplest of cases. McCulloch (2001) suggests that 'neighbourhood' does have a statistical association with poverty, unemployment and other characteristics associated with social exclusion, albeit there are equally or more important influences at individual and household levels. The problem is that group and individual characteristics are intertwined, even without causal influences. The selection mechanisms just described mean that adults choose their neighbourhood and community (or have it chosen for them on the basis of criteria related to their circumstances) and children chose their friends, based on income, preferences, talents and personality; a child is placed in a class or school alongside children of similar characteristics and ability.

At the heart of the issue then is whether the observed differences in outcomes across areas reflect the influence of our neighbours and peers on our outcomes, and whether local public services accentuate or fail to diminish such patterns. So in what follows we assess the evidence that area sorting is strengthening or weakening over time and whether such sorting has any independent influence on employment, education or crime victimisation outcomes. We also discuss the likely routes that such influences are taking as this will influence any policy response.

There are (at least) two powerful selection mechanisms that create concentrations of deprivation at this community level. The first is the transmission of inequalities of work and wages, operating via house prices and rents, into patterns of housing and neighbourhood demand. People can be thought of as ‘consumers’ of their local environment, from the population mix to social problems experienced, and from the natural beauty to the quality of services. Where the local environment is good people pay a premium to live there (Gibbons and Machin 2003). By contrast, neighbourhoods with negative intrinsic characteristics tend to lose out in the process of residential sorting, and in turn concentrations of poverty can acquire further problems (Lupton and Power 2002). Wider income inequalities across the population tend to widen price differentials and are likely to make segregation more extreme (Cheshire *et al* 2003).

The second selection mechanism particularly applies to the more deprived communities. This is rationed access to social housing through local authorities’ allocation rules. Because of right-to-buy legislation and lower levels of new building, social housing has declined as a share of the housing stock for the past two decades. This trend has continued since 1997. As a result, rationing for new entrants to social housing has become ever more restrictive. These restrictions mean that only those with the most acute housing need - especially workless or low income families with children - get housed.

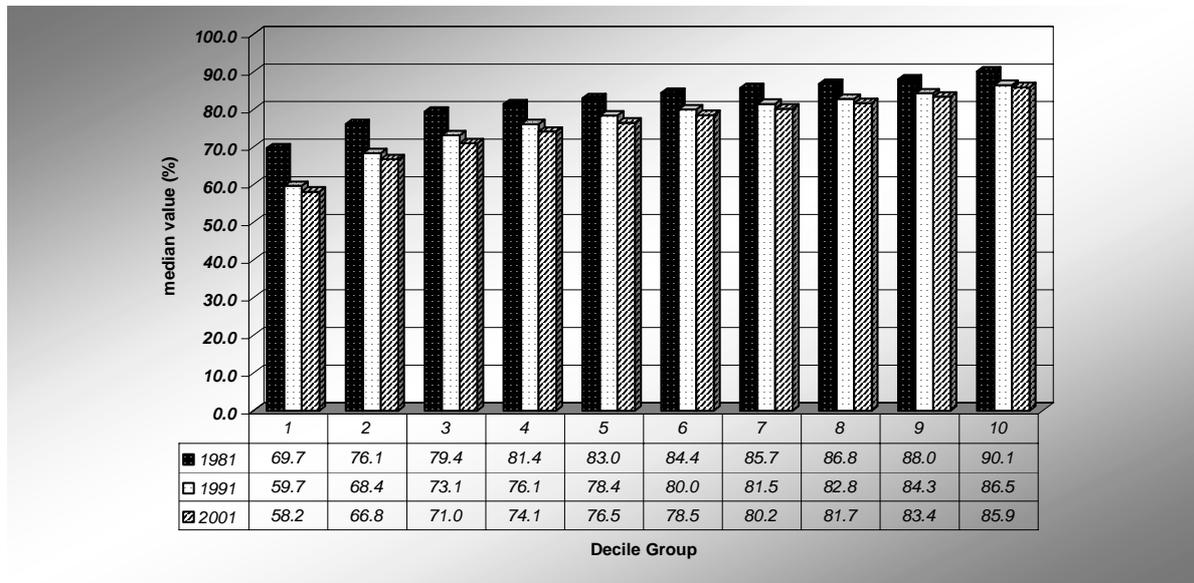
### **3.1 Neighbourhood employment**

Figure 2a summarises the changing extent of variation in employment rates for working age men at ward level. It uses Census data to rank, in ascending order, all the wards in Great Britain (i.e. England, Wales and Scotland) in terms of their employment rate and then records the median employment rate for each decile group in 1981, 1991 and 2001. So as an example, take the bar furthest to the left: this shows that the median employment rate for the lowest decile of wards in 1981 was slightly less than 70 per cent.

Employment rates for males of working age between 1981 and 1991 fell sharply, but this decline was concentrated in low employment wards. The first decile of wards saw employment rates drop by 10 per cent, whereas in the top decile group there was a decline of less than half this. The bottom two deciles experienced notably worse outcomes than the rest of the distribution. The overall decline in male employment has continued, albeit to a less

marked extent, between 1991 and 2001, with the decline being slightly more focused on the lower half of the distribution (though not especially focused on the bottom two deciles).

**Figure 2a: Employment rate by Ward decile group for males of working age, 1981, 1991 and 2001**

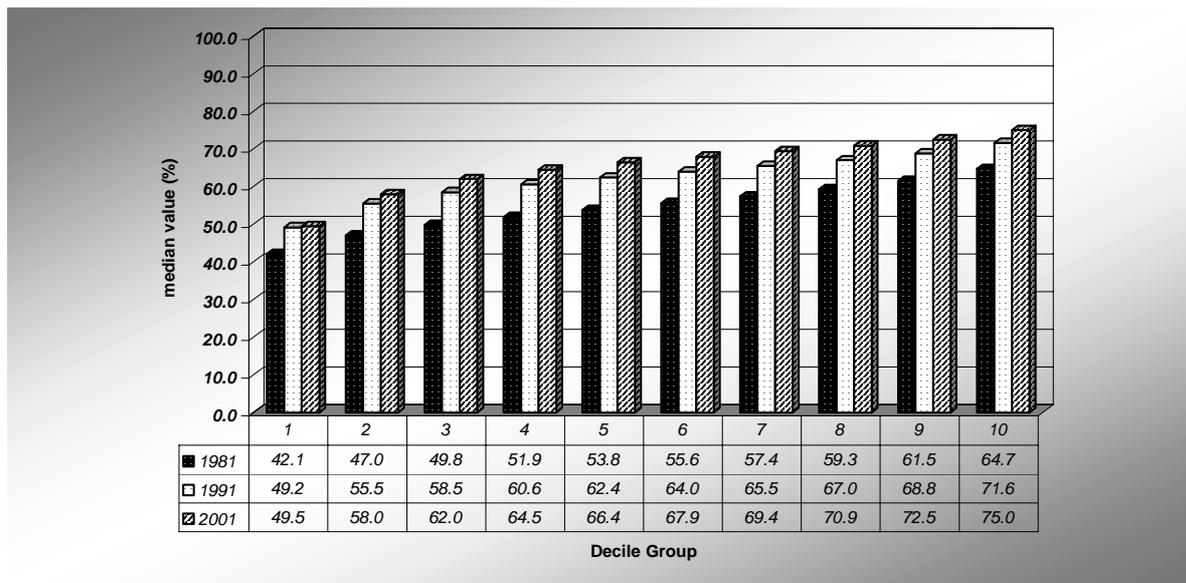


Note: There are around 10,000 wards, but they are not the same in the three Census years.

Figure 2b presents similar information, but for women of working age.<sup>5</sup> Contrary to the experience for men, women’s employment rates increased between 1981 and 1991, and then again between 1991 and 2001. As with men, the change was more marked between 1981 and 1991 than in the later period, but unlike with men, the gain in employment was pretty even with only a slight hump around the third and fourth deciles. Looking to the lower deciles, the increase in the female employment rate between 1991 and 2001 was smaller in the first decile than everywhere else.

**Figure 2b: Employment rate by Ward decile group for females of working age, 1981, 1991 and 2001**

<sup>5</sup> It is not necessarily the same wards that have low male and female employment rates. However, the correlation between male and female employment rates at ward level has increased from 0.75 in 1991 to 0.87 in 2001.



A comparison of the two charts shows that employment rates for males and females have converged; there has been a gradual decline in employment rates for men over time and an increase in employment rates for women from each census year to the next. But for both sexes there is a marked step between the worst performing 10 per cent of wards and the next tenth. Over time the size of this gap between the very worst and the rest has increased markedly. This suggests that, at least in terms of employment, the worst 10 per cent of wards may be deserving of special attention.

The most deprived ten per cent of wards form a key government target population under the National Strategy for Neighbourhood Renewal and hence we have a lot of information about them.<sup>6</sup> They house nearly 15 per cent of the population (or around 8 million people), have a disproportionate number of children, are predominantly urban, have high housing densities and a high incidence of social housing. As figure 3 shows, they are clustered in Liverpool, Manchester, the North East, former mining areas and Inner London.

Figure 3: Distribution of deprived wards

<sup>6</sup> These wards are identified using the index of multiple deprivation (IMD), which covers domains such as income, housing and health as well as employment.

[insert map from end of chapter]

Source: ODPM (2003) Indices of Multiple Deprivation

### *Neighbourhood employment effects?*

A key social justice question is whether this concentration of deprivation has an impact on the employment chances of residents. As many residents of deprived areas have very 'localised' outlooks and often lack the confidence and means to travel far from their 'home' area (Green *et al* 2005) and most low skilled jobs come by word of mouth or adverts in windows (Gregg and Wadsworth 1996), being in an area with low employment rates may damage a person's chances of finding employment as informal information networks for gaining intelligence about employment openings are restricted. It is also possible that employers exercise postcode discrimination, choosing not to hire from certain areas. However, evidence on such neighbourhood effects is difficult to identify. This is because of the selection issues described above: the people in the worst areas are not there by chance and hence whatever has led them to reside in these communities may also drive their poor employment outcomes.

The best evidence comes from US experimental studies; especially the recent Moving to Opportunity Program carried out in a number of major US cities (Orr *et al* 2003). This randomised experiment moved families from acutely deprived neighbourhoods into better neighbourhoods. The families received help finding accommodation and were given financial support to pay for the higher housing costs. The findings across all the studies are that there are no substantive impacts on welfare rolls, employment or earnings (*ibid*, Goering 2003). These results strongly suggest that the low employment problems of those in the most deprived wards would broadly be the same if they lived in somewhat better wards in the same city area.

This is reasonably intuitive as most deprived wards in cities are close to the central business district where work is plentiful but largely filled by people commuting in from sub-urban areas. For more geographically isolated deprived wards in old mining areas or city fringes this will not hold so strongly. It suggests the major focus on raising employment among people in deprived city areas should be about helping the individual. Of course though, as

individuals secure employment they may well leave these deprived areas if the areas are very unattractive to live in. Individuals' situations may be therefore be improved without necessarily leading to an improvement in the concentration of deprivation. We will return to this crucial point later.

### *3.2 Neighbourhood and Education.*

We now turn to area disparities in terms of the human capital that gives individuals the skills and capabilities, which in turn affect individual earnings, employability, health and other correlates of happy and successful lives. As is standard, we consider educational attainment as our measure of human capital, since we know that educational attainments are good predictors of individual adult outcomes. Looking at education shifts the issue of neighbourhood effects firmly to look at children, for whom the potential influence of neighbourhood services (schools) and peer groups seems intuitively stronger than for adults.

#### *Three key themes*

Three key issues arise when thinking about the geographical concentration of educational attainment. We shall consider these issues in turn, assessing the evidence-base for neighbourhood-related policy in the UK. The issues are:

- First, the educational composition of the population is a building block of area advantage and disadvantage, and increasingly seen as a key factor in economic development at the regional level. So it is important to know how much places differ in terms of the educational characteristics. We also want to know how this is changing: are places becoming increasingly disparate, with the uneducated concentrated in some places and the educated in others, or are our communities becoming more educationally mixed? Accepted wisdom seems to be that places have become increasingly segregated along socioeconomic lines; this is one of the justifications for area-based policy initiatives.
- Second, environmental factors in the neighbourhood, or social interactions amongst peers and within the community, may well be influential in the formation of children's knowledge, understanding and the attainment of educational goals. Again, this is often taken for granted, and neighbourhood-based policy is to some extent predicated on the assumption that tackling problems at the neighbourhood-community level is an effective

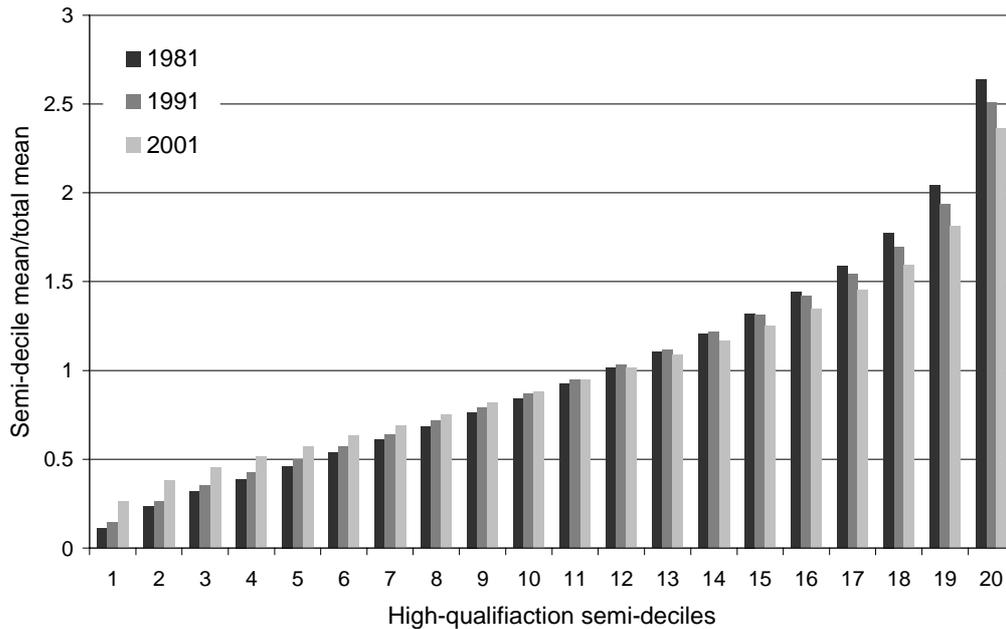
way of tackling individual disadvantage. We review the evidence on such ‘neighbourhood effects’, drawing on UK data, but also recent experimental evidence from the US.

- Lastly, geographical factors are linked to education because of the nature of school admissions in the state sector. In general, school choice is tantamount to residential choice, because admission is restricted to those who live close by. The implications of this for house prices are well known, through anecdote and through media coverage. There is also an emerging body of harder evidence that these patterns of demand for neighbourhood schools are important in the housing market. We argue that this is where the constraints of geographical space might play their most important role in the process of education, by rationing access to good schooling to those who can afford it.

#### *Patterns and Changes in Britain*

There is no question that neighbourhoods differ markedly in terms of the mix of educational qualifications held by their residents. This will be news to nobody, but what is remarkable is the magnitude of these differences. Figure 4 shows the latest snapshot of how highly qualified people are distributed across different areas. It uses similar techniques to the employment graphs in Figure 2. In this case, the chart ranks Census wards in terms of the proportions of working-age highly qualified men and women in 1981, 1991 and 2001. The mean proportion of ‘highly qualified’ men in Census wards in each Census year, for each 5 per cent of the distribution (semi-decile) is presented.

Figure 4: Distribution of the highly qualified at Census ward level, men 1981-2001



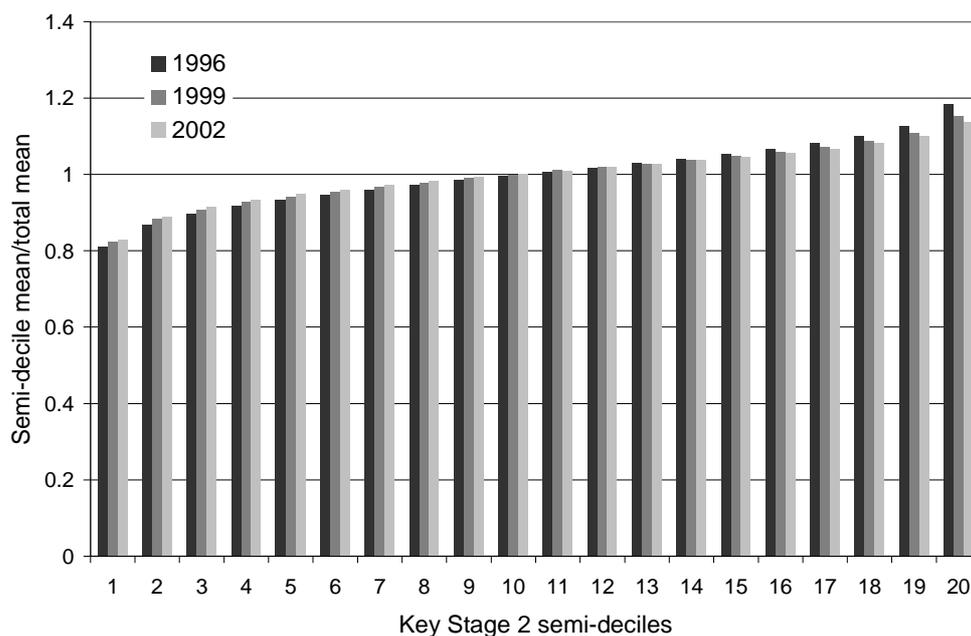
The chart shows that there are very wide disparities between the wards with the most educated and the least educated populations. It is commonly thought that this kind of segregation has increased over the past decades, with places becoming increasingly polarised along income, demographic and human capital lines. Such changes have been documented in the US (Jargowsky 1996, Kremer 1997), but there is no strong evidence for this in the UK (Hills 1995, Social Exclusion Unit 2000). Local Authorities with higher proportions of higher-educated residents in 1991 gained more educated residents over the 1990s than areas with few educated residents initially (Dorling and Thomas 2004), but these changes can be explained by general educational upgrading throughout the country. As Figure 4 shows, the changes in the *relative* status of neighbourhoods is somewhat different. In 1981 the proportion of qualified male residents in the top 5 per cent wards was 24 times higher than the proportion in the bottom 5 per cent wards. In 1991 this figure fell to 18. In 2001 the ratio fell to just 9.<sup>7</sup> Though we do not present the data, the story for women is very similar. This reduction in inequality may be due to changes in ward definitions, changes in the classification of qualifications, or because no further segregation is feasible at the top end once all residents are qualified. But the majority of the reduction must reflect a genuine

<sup>7</sup> The coefficient of variation (standard deviation/mean) falls from 0.64 to 0.60 to 0.51 over these years.

decrease in the extent to which neighbourhoods are segregated along educational lines. Wards seem to have become more educationally mixed over the past two decades.

Perhaps area differences in child, rather than adult, educational attainment might be more telling. Children are considered the most vulnerable to neighbourhood and community influences, so intuitively there could be stronger patterns in the distribution of their achievements. Figure 5 summarises the achievements of 11 year old boys at Key Stage 2 (tests taken at the age of 10-11). It charts the distribution of school-average point scores for tests in 1996, 1999 and 2002. Again, though the data is not shown, the picture for girls is almost identical. Since primary schools serve quite localised communities, we can visualise the geographical distribution through these school-level patterns.

Figure 5: Distribution of school-average Key Stage 2 point scores, Boys, 1996-2002



Again we see marked inequality, but again the general trend (albeit at a slow pace) is towards slightly greater equality: primary schools seem to have become somewhat less ‘segregated’ in terms of the attainments of children at the ages of 10 – 11. Part of this may be due to the fact

that there is an upper limit to how high the best schools can go. Yet, only 0.2% of schools had reached this upper limit by 2002.

Government policy over this period has been towards greater choice for parents. This policy has been argued to increase inter-school segregation. But admissions policies which tie school intake to the specific disadvantages of a school's geographic location can be more conducive to high levels of segregation than policies which allow schools to admit from a wider geographical area. We explore this more later.

### *Does Neighbourhood Matter Anyway?*

Our description of the patterns and changes in the educational attainment by area suggests that the disparities are wide, but narrowing slightly. Still, we should be concerned if these differences in place and community context have an important role to play in shaping children's life opportunities and outcomes. Indeed, it is partly this thinking that motivates area-related regeneration schemes and school improvement schemes such as Excellence in Cities (Machin *et al* 2004). The reasoning is that it is more effective to tackle educational disadvantages at the area level, because improvements in the group as a whole have knock-on effects to the individual. Given this, it is worth reviewing what evidence we have on these processes.

There are many ways in which we could imagine that people, especially children, are influenced by their neighbourhood or community. These fall into two broad categories: mechanisms related to the social interaction between children and their friends, class-mates or neighbours; or alternatively mechanisms related to actual physical location, like accessibility of schools or environmental quality. Most interest, at least as far as schooling is concerned, has been in the first category. Empirical studies with evidence for these sorts of 'neighbourhood' and 'peer-group' effects, on education and other outcomes, have appeared thick and fast in the US since the early 1990s. In most cases the objective is simply to measure if *any* causal relationship exists between some neighbourhood or school class-mates' characteristics and child achievements. Yet studies using traditional statistical techniques struggle to disentangle the influence of group characteristics from the child's own attributes and those of her family. Taken as a whole, this older evidence from the US is suggestive of

some neighbourhood or school peer-group influences, but is certainly not conclusive (Jencks and Mayer 1990, Brooks-Gunn *et al* 1997, Ellen and Turner 1997, Sampson *et al* 2002). The same could be said of neighbourhood studies for the UK that takes a similar approach (Garner and Raudenbush 1991, Gibbons 2001, Joshi and McCulloch 2001). Children from more educated or less deprived neighbourhoods in Britain seem to do better at school and gain higher qualifications, even taking into account observable differences family background. But it is hard to be sure that this is not just because families living in rich neighbourhoods differ from similar families living in poor neighbourhoods in ways that are hard to observe.

Because of these problems, recent research in the US has tried to find situations where the group in which an individual finds herself is unrelated to her own characteristics, or where neighbourhood or school change happens because of some policy intervention. Some of these ‘quasi-natural’ and policy experiments have proved useful, such as bussing of black pupils to out-of-town schools (Angrist and Lang 2002), random assignment of pupils to schools (Cullen *et al* 2003), allocation of college freshmen to dormitories (Sacerdote 2000), the destruction of housing projects (Jacobs 2004), and the Moving to Opportunity (MTO) programme already described.

The overall story these studies tell is, however, one of weak or non-existent neighbourhood effects on children’s attainments. For example, the opportunity to move to a better neighbourhood under the MTO programme produced little or no improvement in reading and maths test scores (Sanbonmatsu *et al* 2004). Perhaps this is because not all those given the opportunity actually moved and because some of the children that moved did not change school. Perhaps it is the *school* or *class-room* peer-group that really matters.

#### *How about school peer-group?*

Other well-executed research from the US that looks specifically at school peer-groups does find some effects, but the results are mixed. For example, boys and girls in Texas seem to do slightly better in classes with more girls (Hoxby 2000) and peer’s achievements seem to matter too (Hanushek *et al* 2003, Lefgren 2004). However, pupils who won lotteries to attend better, sought after high schools in Chicago gained no advantage in terms of test-scores and

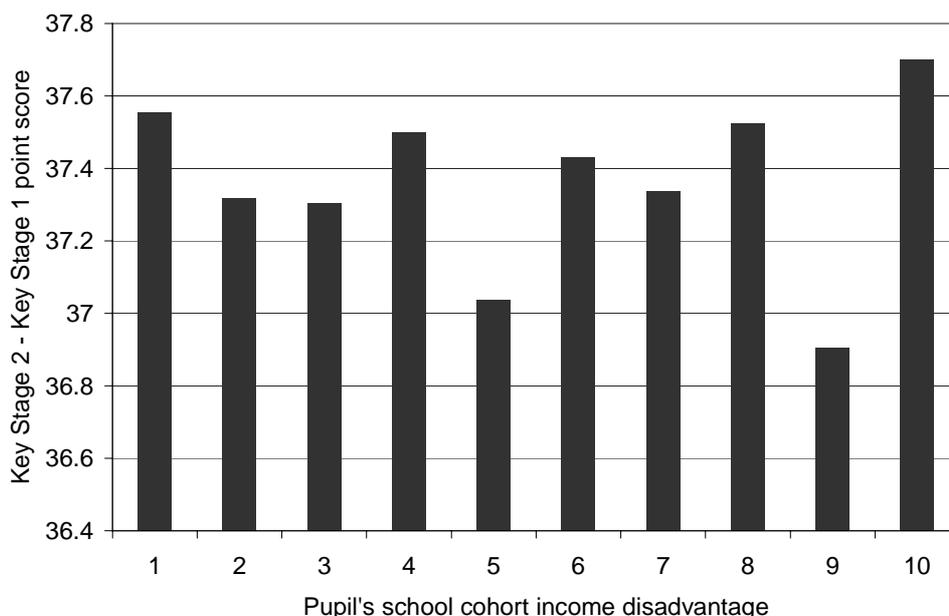
other traditional educational outcomes (Cullen *et al* 2003). Even here, the overriding message is that there is probably an impact on education attainment from peer-groups, but this is of fairly modest importance relative to aspects of the family background.

How does this evidence square with the common belief that peer-group and class-room composition makes a big difference to our children's success at school? It is well known, for example, that the average pupil attainment in a school declines rapidly as the proportion of pupils from disadvantaged backgrounds increases (typically measured by free-school meal eligibility). This is undeniable, but is largely due to each child's own family background: children from poorer family backgrounds have, on average, lower attainments. But these children begin with lower attainments and end up with lower attainments, and there is only fragile evidence that school 'context' – that is the characteristics of the pupils with which a child shares the class or school – really matters much for that child's progress. An extensive 'school effectiveness' literature in Britain (and elsewhere) is scattered with examples that seem to show school-based 'contextual' effects, especially related to free-school meal entitlement. But most take little account of the fact that children educated amongst low-income peers will also tend to be from low-income families (even if they are personally ineligible for free meals). This happens because the housing market sorts individuals geographically according to incomes, and because schools draw their intake from geographically defined neighbourhoods.

A simple story about peer effects on primary-school pupil attainments in England can be told by looking at progress through Key Stage 2 in the National Curriculum, using the 2002 Pupil Level Annual Census carried out by the DfES. On average, pupils in Community schools who were ineligible for free-school meals scored 45.4 points in the tests at the end of Key Stage 1, when they were age 6/7 (total points in reading, writing and maths). These pupils increased their overall scores by an average 38.0 points between age 6/7 and age 10/11 at Key Stage 2. Pupils who were eligible for free school meals – the more income-disadvantaged – achieved 38.4 points in their age 6/7 tests and a 36.9 point increase by age 10/11. Clearly background makes a big difference to baseline achievements – 7.4 points at the end of Key Stage 1 – and a small (but significant) difference to progress through primary school.

However, as Figure 6 shows, the *mix* of free-school meal entitlement in a child’s cohort makes very little difference to the academic progress of poor children through Key Stage 2. The figure charts the mean Key Stage 1 to Key Stage 2 increase in point score for income-disadvantaged children, as school cohort income disadvantage increases. On the left, Column 1 represents the mean point increase for the ten percent of pupils with the lowest proportion of their school cohort eligible for free-school meals. On the right, Column 10 represents the mean point increase for the ten percent of pupils with the highest proportion of their cohort eligible for free school meals. There is no obvious systematic trend in achievement as pupil cohort composition changes (and statistical analysis would confirm that there is no significant trend). Poor pupils in a wealthier classroom context progress no better than poor pupils in poor classes through Key Stage 2. Evidence elsewhere indicates that school average free-school meal entitlement may have more relevance to progress before Key Stage 1, but even here the effects are relatively weak (Strand 2000).

Figure 6: Peer-group income disadvantage and progress through Key Stage 2, free-school meal eligible children, age 10/11 in Community schools in 2002



Source: DfES (2004)

None of what has been said should be taken to imply that peer groups and neighbourhoods never matter. Some aspects of peer and neighbourhood groups will matter sometimes for some groups of the population, and some studies find quite general effects for Britain (Gibbons 2001, Robertson and Symons 2003). Recent international evidence on peer groups is also supportive of small school-related peer effects (OECD 2003, Fertig 2003). But any reading of the literature would surely concur that if neighbourhood and peer-group effects exist, their role in the development of traditional educational outcomes is relatively minor in comparison with personal family background factors and individual attributes.

For instance, if neighbourhood-of-origin is an important influence on educational attainments, we would expect to see strong correlations between the education of adults raised in the same neighbourhood (wherever they are later on in life). But in 1991, the correlation between years spent in education for adults who were teenagers in the same ward in the 1970s was only 0.16, and as low as 0.07 once family background differences are taken into account (Gibbons 2001). This result suggests that neighbourhood factors account only a very modest proportion of the inequality that exists in educational attainment.

### *Access and Opportunity*

Taken as a whole then, this body of evidence indicates a possible role for the attributes and behaviours of neighbours and peers in fostering or hindering personal educational development. But the role seems to be a minor one. A recent survey of the effects of spatial disadvantage draws similar conclusion about a much wider range of outcomes (Buck and Gordon 2004).

Should we conclude that geography is largely irrelevant for education? This would certainly be too hasty. Schools differ in many ways, and some schools are clearly more desirable and popular than others. At least part of the reason for a school's popularity must be the effectiveness of the education it offers. Yet schooling choices are still heavily restricted by where a family lives and the most 'effective' schools are not available to everyone. Yes,

preferences take precedence in non-selective schools. But as soon as applications exceed the number of places available, it is how close a family lives that counts. Numerous US studies and a handful for England have shown that this type of admissions policy leads to higher house prices nearer better, more popular schools, particularly at primary-school level (Gibbons and Machin, 2003, Cheshire and Sheppard, 2004). It is not hard to see that this reduces opportunities for poorer families to access more effective schools. One study for England showed that the annual housing price premium for the highest performing primary schools could be as high as the fees for a private preparatory school education (Gibbons and Machin, 2003). Anyone concerned about equity in education provision should be concerned about the continuing, strong importance of geography in the school admissions systems (see chapter 13). Systems of school admissions based more on parental choice or ability (selective LEAs) than on residence result in lower neighbourhood segregation (Burgess *et al* 2004). However, it doesn't follow that parental choice results in lower school segregation. Burgess *et al* (2004) compare segregation at a neighbourhood and school level. They show that there is a strong positive correlation between the feasibility of school choice and the extent of school segregation, controlling for residential segregation. They find this for segregation along the lines of both ability and income.

### *3.3 Neighbourhoods and Crime*

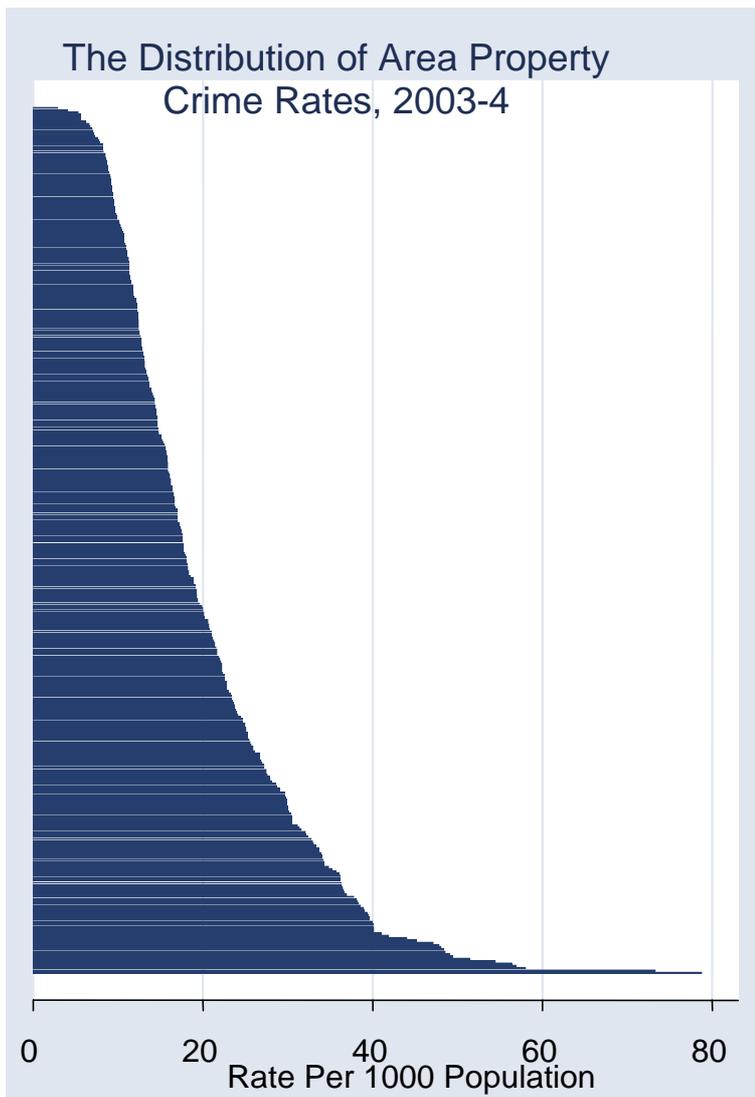
Crime and fear of crime is highly concentrated into particular areas, often featuring hot spots in highly localised places (see chapter 2). Figure 7 shows the distribution of property crime rates (defined as numbers of burglaries or thefts per 1000 population across 376 areas of England and Wales in 2003-4.<sup>8</sup> The chart shows that the range across areas is wide, going from 2.9 crimes per 1000 people a year up to a huge 78.8 crimes per 1000 people, with the average being 24.6 per 1000 people. It is also the case that particular areas remain high or low crime areas over long periods of time (see Hansen and Machin (2003) for an analysis of crime persistence over time in the 43 police force areas of England and Wales). So, for

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<sup>8</sup> The 376 areas used in the figure are known as Crime and Disorder Reduction Partnerships (CDRPs). There are 376 CDRPs to cover nearly every local authority area in England and Wales. Each one produces an audit and strategy for its local area, including recorded crime numbers.

people who have concerns about area disparities, it is important to establish which areas have high crime rates, and which factors are important in determining this.

Figure 6: The Distribution of Property Crimes by Crime and Disorder Reduction Partnership (expressed as rate per 1000 population)



Source: Home Office.

Standard economic models of crime postulate that the crime participation decision of individuals is formed by weighing up the expected costs and benefits of committing a crime relative to engaging in legal work, taking into account the probability of being caught and the sanction associated with being caught (Becker 1968). In this framework, individuals are

predicted to commit a crime if the expected benefits outweigh the expected costs. As such there will be individual variations in the propensity to engage in crime, which will be influenced by the willingness to take risks and empathy toward the victim (especially for personal crime). Researchers have used area-level data to try and test the predictions of the economic model, namely that crime should be higher in places where earnings from crime are higher, where earnings from the legal labour market are lower and where sanctions and deterrence are less tough.

Area modelling of crime is relatively new in the UK, despite there being a huge literature on the development of macroeconomic models of crime. However, the work that exists is useful in shedding light on which areas are more likely to be characterised by higher crime rates. Machin and Meghir (2004) focus on the relationship between crime and the low wage labour market in the 43 police force areas of England and Wales. This research looked at cross-area changes in crime and changes in the 25<sup>th</sup> percentile of the area wage distribution between 1975 and 1996 (the 25<sup>th</sup> percentile wage is the wage of a person one-quarter from the bottom of the area wage distribution and can thus be viewed as an index of relatively low pay). The research reports a strong, negative correlation between the types of crime they examine (theft and handling, burglary, vehicle crime and total property crime) and low wages, even after controlling for other variables including demographic change and measures of deterrence. Hansen and Machin (2002) approach the link between crime and the low wage labour market in a different way, asking what happened to crime rates in areas where more people were beneficiaries of wage increases due to the introduction of the National Minimum Wage in April 1999, as compared to areas where fewer people received a wage boost. Their findings show that crime rates fell by more in relative terms in areas with more people who benefited from the minimum wage. Importantly this research compares what happened before the national minimum wage was introduced and shows that the relationship between crime and the low wage labour market that existed in the period surrounding minimum wage introduction was not present before.

The finding that low wages matter for crime is now widely accepted by researchers. In contrast, the huge amount of research looking at connections between crime and unemployment conclude that evidence of an association is fragile at best (see Freeman 1999).

Other evidence based upon area analysis of crime rates is supportive of the notion that economic incentives matter for crime. For example, Feinstein and Sabates (2004) find that the financial incentive to stay on full-time education at the age of 16 under the Educational Maintenance Allowance programme reduced both theft and burglary by male youths in pilot areas compared to similar areas not operating the programme.

Thus there are significant spatial variations in crime rates, and crime is concentrated in certain areas with high levels of persistence through time. This reveals the presence of important place and neighbourhood influences on criminal activity. It is also evident that the spatial incidence of property crime is linked to the economic opportunities available in particular places.

These findings based on data for England and Wales are in line with findings from the US. For example, the Moving to Opportunity programme confirms that moving to different, more affluent neighbourhoods leads to reductions in the chances of being a victim of crime for adults (Duncan *et al* 2004). Girls (though not boys) of families who moved to a better neighbourhood also reported lower witnessing of criminal activity. Likewise there were differences in reported engagement in risky behaviour, with girls reporting improvements but boys, if anything, going the other way. Furthermore, girls experienced far fewer arrests for violent offences but boys showed higher arrest rates for property crimes. So there is a mixed picture on adolescent behaviour and criminal activity, but clear differences in adult victimisation and areas with high crime rates reflect poor economic opportunities, mostly in terms of wages rather than unemployment.

#### **4. Discussion and Policy**

How should these findings be translated into policy? It is clear that regional inequalities and neighbourhood effects represent a substantial social injustice. At a regional or city/Travel To Work Area level there are large and highly persistent differences in employment levels focused heavily on the least educated. The evidence presented above suggests these differences will not be dissipated through mobility of the low skilled to areas of job creation or of low skilled jobs to deprived areas. Most economic migration is undertaken by people securing a job in a new area and then moving to that location. Graduates are highly mobile in

this way with a well functioning national labour market and area variations in employment are rapidly evened out. Low skilled labour is less mobile because information on opportunities is hard to access and the high cost of housing in growth areas prohibits such moves. Social housing subsidies, which are not transferable across areas, are probably a minor additional restriction rather a major factor in this low mobility. Low skilled jobs are not flowing to low wage areas because most of growth areas of low skilled employment are locally servicing consumption and leisure activities of the affluent. Once the employment rate in an area rises above 75 per cent, however, the low skilled start to benefit disproportionately from further jobs growth. This suggests that the government stated ambition to secure an 80 per cent employment rate will be needed to be nearly achieved in every region to reabsorb the lowest skilled.

So the solutions to employment differentials at the city/regional level probably lie less in trying to move low skill jobs to deprived regions through relocation grants and so on, but in seeking the high value added economic activity usually associated with well educated labour. The spending power of these people will generate jobs for others. It is notable that strategies of urban regeneration aimed at making cities vibrant and attractive places to live have produced some clear success in this way. The government can support this agenda by encouraging university based research activity and central government functions to move out of London and the South East. Supporting migration by the less skilled through national vacancies data in job centres and making social housing subsidies mobile would provide some additional support to reducing regional employment differentials by encouraging some (even short range) mobility – this is discussed more below.

At the community level there are sometimes huge degrees of spatial segregation along the lines of employment, education and crime. These patterns are also highly persistent across time. While the picture for employment segregation is of some further widening at ward level, spatial inequalities in education are diminishing for adults. These conflicting trends reflect the sharp increase in the employment differences across education groups which have been sufficient to offset the minor lessening of the extent of educational segregation at ward level. Spatial differences in educational attainment amongst children are also slightly narrowing over time.

This spatial segregation is partly due to the more affluent seeking to purchase desirable neighbourhoods with low crime rates and high quality public services, raising house prices in these areas. Restricted entry in social housing to those in the most desperate circumstances also drives concentration of the poorest into certain neighbourhoods. There is no evidence that this special segregation has any effects on employment. That is, it seems that moving a person to a more affluent neighbourhood in the same broader area would have little on impact on their employment prospects.

For education the available evidence is that peer group effects - who children attend school with - make only a modest difference to attainment, certainly when compared to the importance of the child's family. But families will pay substantially over the odds for higher school quality. Access to good schools is one of a number of ways that the affluent use their financial clout to advantage their offspring and this in part drives spatial segregation.

Being a victim of crime is strongly related to where you live and crime is concentrated heavily in certain areas. There is also some modest evidence that peer group in the neighbourhood influences the propensity to engage in crime or risky behaviour (including teenage pregnancy) for girls. There is clear evidence, however, that criminal activity is related to wage opportunities in the area.

This is important for policymakers because it suggests that at the community level employment issues are about helping *individuals* into work, as there is no evidence for neighbourhood employment effects. Indeed improving economic opportunities for the less skilled in an area may not reduce spatial inequalities in employment if the gainers use their improved incomes to move out of the deprived areas. In contrast for crime and risky behaviour there is evidence of modest neighbourhood/peer group effects for children and substantial spatial aspects to being a victim of crime.

While most educational disadvantage does not seem to come from the peer group, delivering resources to the child still may be best done through the school when it is more cost effective to do so or when the intervention requires group delivery; school resources and high quality teachers do not operate on just the individual child. Targeting resources on poor communities is therefore advantageous both as a cost effective way of reaching disadvantaged children and because of the spill over effects of concentrated deprivation. The Excellence in Cities

programme has had modest effects in raising attainment in deprived areas, but is cost effective given the relatively low level of resources injected (Machin, McNally and Meghir, 2004). Likewise the Street Crime Initiative, which puts greater policing resources in the most deprived areas seems to have had a significant impact in reducing robberies (Machin and Marie 2005). Furthermore, the very act of improving the schools and reducing crime (and similar neighbourhood regeneration issues) will make these areas more attractive to live, lessening incentives for people to leave if their personal circumstances improve. This addresses the very heart of the problem. Hence schools and crime reduction initiatives can be important elements of area regeneration.

This suggests large amounts of extra funding for schools and policing in deprived communities should be a key component of a social justice agenda. The maze of local funding currently makes this approach very difficult. The government has funding streams given to local authorities which take account of area deprivation. But the LEA does not have to transmit this to the schools serving poor children, and schools do not have to address the extra needs of deprived children (see chapter 13). Likewise police funding is to the local police authority, not the policing of the most deprived wards. To address these problems the main approach of the government has to set targets to reduce gaps between the most deprived areas and the national average under the National Strategy for Neighbourhood Renewal. National and local public services are then required to meet these targets and Local Strategic Partnerships are supposed to act as co-ordinating bodies to achieve these ends. In addition though there are two further approaches: the first is hypothecated resources given to agencies to deliver area-based improvements in services and outcomes; Excellence in Cities and an array of Action Zones or the Street Crime Initiative reflect this. The second additional approach is the New Deal for Communities, which also delivers resources to an area but differs in that local residents are engaged in choosing priorities and even aspects of delivery.

A more direct transmission of resources for deprived families and communities has obvious benefits for the delivery of the public services they receive. It would also be desirable if institutional blockages could be eased. For example, offering appropriate incentives to encourage good teachers to teach deprived children (who tend to engage in more disruptive behaviour) in disadvantaged schools serving deprived communities seems desirable. If these schools could pay more they would have a good chance to recruit and hold such teachers. Residence based schools admission policies generate neighbourhood segregation and create a

direct link between neighbourhood and school segregation. Selective education and parental choice based systems reduce neighbourhood segregation, but appear to raise school segregation given the lower level of neighbourhood segregation. Parental choice can only improve on residence selection where the best schools can not choose the pupil (as the school is oversubscribed another selection mechanism comes into play), as the school will choose the most able and least difficult pupils. Further a simple choice system is less than ideal where the power to exercise meaningful choice is constrained by income. Low income families can only choose local schools because they have less access to transport. None of these currently widely used systems is really effective at tackling educational segregation.

Yet policy can make a difference here: access to high quality public services and low crime neighbourhoods substantially influences patterns of spatial segregation. There is then the potential for improved public services (such as schools, policing and transport) in deprived areas helping to reduce the crowding of the poor into a minority of wards by making these areas more attractive. This is not an argument for gentrification, which is the almost complete replacement of poor populations by affluent ones in an area, but in favour creating more mixed populations in the areas currently in the most deprived 10 per cent of wards and of making inner cities areas more attractive places for people to live. In the case of schools, this could involve further weakening the link between where children live and the schools they attend, so that schools do not perpetuate geographical patterns of disadvantage and advantage. This requires choice backed by access and support (such as buses, informing and engaging with parents) and a blind selection mechanism for oversubscribed places. A form of clearing system of matching choices and available places as with higher education (but here without an attainment pre-requisite) seems a clear way forward and is under trial in London. If a deprived child comes with substantial extra resources, any residual discretion schools have may be biased to taking and supporting deprived children rather than the affluent. New funding mechanisms to deliver resources to the schools teaching deprived schools and policing of deprived areas are required with substantially higher rates of funding than the national average.

Social housing reform can also play a role in creating more mixed communities (as well as enabling greater mobility as discussed above). Currently social housing subsidies are rationed to those who are in acute housing need (which is in turn strongly related to poverty and poor employment) and can only be secured through residence in social housing in one Local

Authority. An LEA has no duty to offer housing to those already housed in another LEA and so shifting tenure type or moving across LA boundaries normally results in loss of the subsidy - it is embedded in the bricks and mortar. As social housing units, with only some exceptions, are concentrated in certain communities, this exacerbates the concentration of deprivation. This issue has been recognised and most new build social housing is in smaller units often dotted around towns and cities. However, there is very little new build and this does not address these issues for the existing stock. A possible solution is to make the subsidy a long-term housing cost reduction for any family being assessed as having long-term need. It would then no longer be attached to one LEA and could be taken with the tenant when they move area or even into buying a house (although unlike right to buy not restricted to the current property). Housing Associations would be able to rent to anyone at full cost but those eligible to the subsidy would pay a lower rent. This would reduce the concentration of deprivation on social housing, creating more mixed communities while also supporting more mobility.

In summary, neighbourhood segregation is shaped by income inequalities translating into the better off securing more attractive neighbourhoods, which includes good schools and low crime levels. Social housing allocation mechanisms and school admissions policies also create greater patterns of segregation in Britain. Whether the degree of segregation is worsening depends on the measure used but there clearly is no substantive recent improvement. These neighbourhood disparities have wider social consequences for their residents, which are commonly called neighbourhood effects. These are large for crime, modest for child education and non-existent for adult employment except in geographically isolated areas. Addressing these neighbourhood effects through increased funding for schools, crime reduction and wider neighbourhood renewal will help create a virtuous circle as these are factors that make neighbourhoods attractive. Addressing the way that social housing allocation and schools admissions policies create segregation would be of further substantive benefit.

### References

- Angrist, J. and K. Lang, 2002, 'How Important are Classroom Peer Group Effects: Evidence from Boston's METCO Program', NBER Working Paper 9263
- Becker, G. (1968) Crime and Punishment: An Economic Approach, Journal of Political Economy, 76, 175-209.

- Blanchard, O. and Katz, L. (1992) Regional Evolutions, Brookings Papers on Economic Activity, Issue No. 1 1-75.
- Brock, W. A., And S. N. Durlauf, 2001, 'Discrete Choice With Social Interactions' Review Of Economic Studies, 68 (2), 235-260
- Buck, N. and I. Gordon, 2004, 'Does Spatial Concentration of Disadvantage Contribute to Social Exclusion?', in M. Boddy and M. Parkinson eds., 'City Matters', Bristol: Policy Press.
- Burgess, S., McConnell, B., Propper, C. and Wilson, D. (2004) *Sorting and choice in English secondary schools*. CMPO Discussion Paper 04/# .
- Cheshire, P. and S. Sheppard 2004, 'Capitalizing the Value of Free Schools: The Impact of Land Supply Constraints', Economic Journal Features, 114(499), F397-F424.
- Cullen, J.B., J.B. Jacob and S. Levitt, 2003, 'The Effects of School Choice on Student Outcomes: Evidence from Randomised Lotteries', NBER Working Paper 10113
- Department of Work and Pensions (DWP) (2005) *Five Year Strategy: opportunity and security throughout life* London: TSO
- Duncan, Greg, Elizabeth Clark-Kauffman and Emily Snell (2004) Residential Mobility Interventions as Treatments for the Sequelae of Neighbourhood Violence, mimeo Northwestern University
- Ellen, I. G., and M. A. Turner, 1997, 'Does Neighbourhood Matter? Assessing Recent Evidence', Housing Policy Debate, 8 (4), 833-866
- Fertig, Michael (2003), Educational Production, Endogenous Peer Group Formation and Class Composition – Evidence from the PISA 2000 Study, IZA Discussion Paper 714, Institute for Study of Labour, Bonn
- Feinstein, L. and Sabates, R. (2004) Crime and Education: Evaluating Externalities Using the Education Maintenance Allowance Programme, Wider Benefits of Learning Research Report, Institute of Education
- Freeman, R. (1999) The Economics of Crime, in Orley Ashenfelter and David Card (eds.) Handbook of Labor Economics, Elsevier Science: Amsterdam.
- Garner, C. L., and S. W. Raudenbush, 1991, 'Neighbourhood Effects on Educational Attainment', Sociology of Education, 64 (4), 251-262.
- Gibbons, S., 2001, 'Neighbourhood Effects on Educational Achievement', London School of Economics, Centre for Economics of Education Discussion Paper no. 18
- Gibbons, S. and S. Machin 2003, 'Valuing English Primary Schools', Journal of Urban Economics, 53 (2), 197-219.
- Goering, John (2003) The Impacts of New Neighbourhoods on Poor Families: Evaluating the policy implications of the moving to Opportunity Demonstration, FRBNY Economic Policy Review, June
- Goos, M. and Manning, A. (2003) McJobs and MacJobs: The Growing polarisation of jobs in the UK, in Dickens, R. Gregg, P. and Wadsworth, J. (eds.) The Labour Market Under New Labour ; The State of Working Britain, Palgrave, London.

- Gordon, I. (2003) Unemployment and spatial labour markets: strong adjustment and persistent concentration, in Martin, R. and Morrison, P.S. (eds.) Geographies of Labour Market Inequality, 55-82.
- Green, A.E., Shuttleworth, I. and Lavery, S. (2005) 'Young people, job search and labour markets: the example of Belfast', Urban Studies, 42 (2). (forthcoming February 2005).
- Gregg, P. Machin, S, and Manning, A. (2004) Mobility and Joblessness in Card, D. Blundell, R. and Freeman, R. (eds) Seeking A Premier League Economy, NBER, University of Chicago Press
- Gregg, P. and Wadsworth, J. (1996) How Effective are State Employment Agencies? Job Centre Use and Job Matching in Britain *Oxford Bulletin of Economics and Statistics* 58, 443-468.
- Gregg, P. and Wadsworth, J. (2003) Labour Market Prospects of the Low Skilled over the recovery, in Dickens, R. Gregg, P. and Wadsworth, J. (eds.) The Labour Market Under New Labour : The State of Working Britain, Palgrave, London.
- Hansen, K. and S. Machin (2002) 'Spatial Crime Patterns and the Introduction of the UK National Minimum Wage', Oxford Bulletin of Economics and Statistics, 64, 677-98
- Hansen, K. and S. Machin (2003) Modelling Crime at Police Force Area Level, in 'Modelling Crime and Offending, Recent Developments in England and Wales', Home Office Occasional Paper 80.
- Hanushek, Eric, A., John Kain, Jacob M. Markman, Steven G. Rivkin, (2003), Does Peer Ability Affect Student Achievement? *Journal of Applied Econometrics*, 18(5), 527-544
- Hills, J., 1995, Income and Wealth: Report of the JRF Inquiry Group, York: Joseph Rowntree Foundation
- Hollywood, E., 2002, 'Mining, Migration and Mobility: Towards an understanding of the relationship between migration and occupation in the context of the UK mining industry' International Journal of Population Geography, 8, 297-314
- Hoxby, C., 2000, Peer Effects in the Classroom: Learning from Gender and Race Variation, National Bureau of Economic Research Working Paper 7867
- Jackman, R. and Savori, S. (1999) Has Britain Solved the 'Regional Problem'?, in P. Gregg and Wadsworth, J. (eds) The State of Working Britain, Manchester, Manchester University Press .
- Jacob, B., 2004, 'Public Housing, Housing Voucher, and Student Achievement: Evidence from Public Housing Demolitions in Chicago', American Economic Review 94(1): 233-258
- Jargowsky, P.A, 1996, Take the Money and Run: Economic Segregation in U.S. Metropolitan Areas', American Sociological Review, 61(6) 984-998
- Jencks, C., And S. E. Mayer, 1990, 'The Social Consequences Of Growing Up In A Poor Neighbourhood', in L. E. Lynn, Jr., And M. G. H. Mcgeary eds., Inner-City Poverty In The United States, Washington DC: National Academy Press
- Kitching R., 1990, 'Migration Behaviour Among the Unemployed and Low-Skilled', in Johnson, J.H. and Salt, J. (eds.) Labour Migration, 172-190.
- Kling, J. R., and J. B. Liebman, 2004, 'Experimental Analysis of Neighbourhood Effects on Youth', Princeton University manuscript

- Leech, D. and Campos, E, 2001, Is Comprehensive Education Really Free, A Case Study of the Effects of Secondary School Admissions Policies on House Prices in One Local Area, University of Warwick, Economic Research Papers no. 581
- Lefgren, L. (2004) Educational Peer Effects and the Chicago Public Schools, *Journal of Urban Economics*, 56, 169-191.
- Ludwig, Jens, Greg Duncan and Paul Hirshfield (2001) Urban Poverty and Juvenile Crime: Evidence from a randomized housing experiment, *Quarterly Journal of Economics*, 116, no. 2
- Lupton, R. and Power, A. (2002) 'Social exclusion and neighbourhoods' in Hills J. (ed.) *Understanding Social Exclusion*, Oxford, Oxford University Press, 118-140.
- McCulloch, A. (2001) 'Ward-level deprivation and individual social and economic outcomes in the British Household Panel Study', *Environment and Planning A*, 33(4), 118-140.
- McCulloch, A and H. Joshi, 2001, 'Neighbourhood and family influences on the cognitive ability of children in the British National Child Development Study', *Social Science and Medicine*, 53,5, 579-591
- Machin, S., S. McNally and C. Meghir (2004) 'Improving Pupil Performance in English Secondary Schools: Excellence in Cities', *Journal of the European Economic Association*, 2, 396-405
- Machin, S. and C. Meghir (2004) 'Crime and Economic Incentives', *Journal of Human Resources*, 39(4), 958-79.
- Machin, S. and O. Marie (2005) Crime and Police Resources: The Street Crime Initiative, forthcoming CEP Discussion Paper
- OECD (2003), 'Learning for Tomorrow's World; First Results from PISA 2003', Organisation for Economic Cooperation and Development, Paris
- Orr, L. Feins, J. Jacob, R. Beecroft, E., Sansbonmatsu, L. Katz, L. Leiman, J. and Kling, J. (2003) Moving To Opportunity: Interim Impacts Evaluation, U.S. Department of Housing and Urban Development and Research, Washington.
- Robertson, D. and J. Symons, 2003, 'Do Peer Groups Matter? Peer Group versus Schooling Effects on Academic Attainment', *Economica*, 70( ) 31-53
- Sacerdote, B., 2000, 'Peer Effects with Random Assignment: Evidence from Dartmouth Roommates', NBER Working Paper 7469
- Sampson, R. J., J. D. Morenoff and T. Gannon-Rowley, 2002, 'Assessing "Neighbourhood Effects": Social Processes and New Directions in Research', *Annual Review of Sociology*, 28, 443-478
- Social Exclusion Unit (2000), National Strategy for Neighbourhood Renewal: A Framework for Consultation, London: Cabinet Office
- Solon, G., M. E. Page, and G. J. Duncan (2000), 'Correlations between neighbouring children in their subsequent educational attainment', *Review of Economics and Statistics*, 82, (3), 383-392
- Strand, S., 2002, Pupil Mobility, Attainment and Progress During Keys Stage 1: a cautious interpretation, *British Education Research Journal*, 28, 1,63-78