

Segregated neighbourhoods and mixed communities

A critical analysis

Paul Cheshire

This report examines why residential segregation arises and how it relates to the distribution of incomes.

It also challenges the belief that mixed communities are an effective way to reduce deprivation and social exclusion.

The report looks at:

- the origins of the idea that mixed communities increase social welfare and help to address deprivation
- whether living in a deprived neighbourhood damages a person's chances in life – known as the 'neighbourhood effect'
- why neighbourhoods segregated by income persist.

The author concludes that mixed neighbourhoods treat a symptom of inequality, not its cause, and the problem is poverty and not where people live. He argues that there is evidence that living with similar people – for both rich and poor – can generate some advantages.



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The **Joseph Rowntree Foundation** has supported this project as part of its programme of research and innovative development projects, which it hopes will be of value to policymakers, practitioners and service users. The facts presented and views expressed in this report are, however, those of the author and not necessarily those of the Foundation.

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First published 2007 by the Joseph Rowntree Foundation

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ISBN: 978 1 85935 585 5

A CIP catalogue record for this report is available from the British Library.

Prepared by:

York Publishing Services Ltd

64 Hallfield Road

Layerthorpe

York YO31 7ZQ

Tel: 01904 430033; Fax: 01904 430868; Website: www.yps-publishing.co.uk

Further copies of this report, or any other JRF publication, can be obtained from the JRF website (www.jrf.org.uk/bookshop/).

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Acknowledgements

I would like to thank Alison Weingarten for research assistance and Stephen Sheppard for our long-term research collaboration. This report draws on ideas we have discussed and developed together over the years although I take responsibility for all errors.

Foreword

The Joseph Rowntree Foundation has been interested in balanced communities since its earliest days. The village in New Earswick that Joseph Rowntree built at the beginning of the 20th century sought to provide a mix of housing, meeting the needs of those who were poor, as well as those in much better circumstances.

Our mission to search out the causes of disadvantage, and our particular focus on poverty and place has involved us heavily in debates about the ways in which patterns of housing tenure affect neighbourhoods and communities. In taking part in this debate we have been under no illusions that mixed income communities are a universal solution to all the problems of poverty and place. The development of mixed income communities alone cannot create stronger, more sustainable and more resilient communities. The evidence does, however, demonstrate that there are some benefits directly attributable to the creation of more balanced neighbourhoods. In our research on this topic, the Foundation examined experiences in a number of mixed income communities to learn more about these areas, and identify what ingredients help make neighbourhoods work. Key findings from our review were that:

- The mixed income communities studied were overwhelmingly judged to be successful; they were not characterised by the problems often linked with exclusively low-income areas. The schemes had generally met the expectations of developers, residents and housing managers and had become pleasant places to live and work.
- Mixed tenure and mixed income were ‘non-issues’ to residents – they saw their neighbours as ‘ordinary people’. Whilst residents may not have developed personal friendships across tenures, they described their relationships as ‘civil’ and ‘polite’. However there was no specific evidence of role-model effects or increased social capital through the introduction of mixed communities.
- Mixed income communities in cities can attract young families on decent incomes but families are interested in the availability of good schools, and well designed housing of an appropriate size. Where mixed developments lack larger homes in their private sector provision this reduces their appeal.
- There was no evidence that mixed communities lowered the prices of houses for sale or put off potential purchasers. Design, location and quality were seen as the key factors affecting sales and price levels.

But planning tenure mix is only one part of the picture. Tenure is not fixed and, as it alters in a community, so can the population of residents. The implications of this need to be thought through and other dimensions of mix – income, home type and size, and household type – also need to be considered.

We are under no illusions about mixed income communities. We know they do not address the deep and persistent poverty and inequality that faces many individuals, families and neighbourhoods. Nor can they alone improve people's life chances and opportunities. Social change is complex and there is no quick fix solution. There are still gaps in our knowledge. We do not know how the mix in places alters over time and there is limited knowledge on the extent to which mixed communities can be engineered and sustained.

Paul Cheshire's think piece offers a trenchant critique of the current debate about mixed communities. He argues that people's incomes and housing market effects by their nature sort people into particular areas and that patterns of social segregation in cities largely reflect the outcome of competition for access to local public goods such as better schools or amenities. He suggests that concentrations of poverty are mainly the result of inequality of income, which in turn produces the intense social segregation that is such a concern to policy makers and practitioners in the UK and abroad. He brings an economic geographer's analysis and perspective, and challenges policy makers and practitioners to be clear about the objectives they wish to achieve, and to present the evidence for change that is too often taken for granted.

Forthcoming work for the Foundation supports the view that there is increasing income inequality and spatial polarisation. If we are interested in social justice, mixed communities policies are treating the symptoms of problems of inequality rather than tackling the causes, which might be better tackled through income redistribution and policies aimed directly at changing those factors which make and keep people poor.

The Joseph Rowntree Foundation is concerned to tackle the root causes of poverty and disadvantage. It is also committed to searching for the causes of poverty and disadvantage within neighbourhoods, and in doing so wishes to consider all the available evidence.

Paul Cheshire's paper is a valuable contribution to an important debate. For individuals and families living in poverty in some of the most disadvantaged communities in the UK, it is critically important that the debate is based on the best possible thinking, the widest possible evidence, and a willingness to consider all the implications of a policy of mixed income communities.

Julia Unwin
Director, Joseph Rowntree Foundation

Executive summary

The belief that it is fairer if communities are mixed, with poorer people living alongside richer ones, can be traced at least to the late nineteenth century and the founders of the Garden City Movement. The idea was built into Hampstead Garden Suburb before the First World War. Although the appetite for new towns in the countryside has all but died, the ideal of 'mixed communities' as a mechanism for achieving a measure of social equality has gained momentum and is now firmly established in national policy.

This report argues that this is essentially a belief-based policy since there is scant clear-cut evidence that making communities more mixed makes the life chances of the poor any better. It is treating the symptoms rather than the causes of poverty. Efforts to improve social equity would be more effective if they were directed towards people themselves rather than moving people around to mix neighbourhoods.

That the poor are spatially concentrated is well documented. Residential segregation on the basis of both income and ethnicity is a universal feature of all cities in which people have a measure of control over where they live. Patterns of spatial segregation are long established and many of the most deprived areas have been so for at least a generation. Many of the poorest neighbourhoods in London have been amongst the poorest since 1881. Recent research on housing markets has established a powerful reason why the poor tend to be confined to the most deprived neighbourhoods with the worst schools, highest crime rates and lowest levels of both public and private amenities. All such characteristics of neighbourhoods are effectively capitalised in house prices and rents. It costs more to live in nicer neighbourhoods. The poor do not choose to live in areas with higher crime rates and worse pollution: they cannot afford not to. That is, the incomes of people determine the character of the neighbourhood they can afford to live in. The problem is poverty, not where poor people live.

It is perfectly plausible to expect that, in addition, poor people are made poorer by the character of the neighbourhood in which they live. Amenities are worse, information about jobs and jobs themselves are less accessible, and peer groups may have negative feedback effects. None of this is implausible but a close examination of the best research available does not reveal any clear evidence to support it. Indeed the most scientific evidence there is, from the American Moving to Opportunity programme, suggests that in significant ways some poor people suffer if they move to richer neighbourhoods.

If your income is low, you may be better off living in cheap housing because there is more money available for food, clothing and other expenses. We know that people derive benefits of various kinds – not directly measured in money terms – from living among other people who are similar and complementary to themselves. As this report shows, there are deeply entrenched forces, not only producing segregation into homogeneous neighbourhoods, but also maintaining existing patterns. The spending of richer households generates local amenities that they value and which also increase the value of their houses, making it more difficult for poor people to live there.

There is a strong argument in favour of greater social equality but unless there is evidence that the characteristics of the neighbourhoods in which people live make their life chances worse, independently of what makes them poor in the first place, the case for forcing neighbourhood mixing is at best a distraction or, at worst, plain wrong. It costs real resources: because of the deeply entrenched social and economic forces at work, it is likely to cost significant resources year on year to prevent neighbourhoods unmixing; and the evidence that it improves the lives of poor people is remarkably elusive.

Moreover, it diverts efforts away from tackling the underlying causes of poverty and social exclusion, lulling us into a comforting but false belief that we are doing something positive. Mixed neighbourhood policies help divert attention from the need for effective policies to tackle poverty which would include income redistribution. It seems fair that richer people should pay for policies to tackle poverty effectively. That does not mean, however, that we should completely ignore the welfare of the more affluent. The evidence strongly suggests that not only does mixing neighbourhoods not effectively help the poor but it also detracts from the welfare of the better off because it makes it more difficult for them to find neighbourhoods populated by other complementary households. Spending resources to mix neighbourhoods is not so much a redistribution of social welfare as its confiscation.

Introduction

This report is about the dynamics of cities and the patterns of residential segregation that arise within them. More specifically, it is an attempt to consider the welfare and equity implications of the fact of social segregation: segregation on the basis of income, ethnicity, age and demographic status, or education. The result of this analysis and reassessment of the evidence calls into question current policies designed to produce 'mixed communities'. We behave and apply policies as if it were a fact that the separation of different types of people and households into distinct and segregated neighbourhoods generates specific social costs, additional to those generated by inequality itself. But careful examination of the evidence suggests that such policies are more a matter of faith than anything else.

Readers are invited to assess this claim on the basis of the evidence presented. The issue at stake is not that poor people live in deprived neighbourhoods and that such neighbourhoods provide an environment and amenities which make the lives of poor people worse. That is well documented. The key issue at stake is the direction of causation:

- Do rich households concentrate in rich and expensive neighbourhoods because they can afford to buy into the amenities and superior public goods such neighbourhoods give access to?
- Do poor households equally concentrate in deprived and unattractive neighbourhoods because their incomes do not allow them to buy into better neighbourhoods?
- Or does living in a poor neighbourhood cause people's incomes to be lower, so the poor – and particularly their children – tend to become even poorer?

There is ample and persuasive evidence that the former direction of causation is at work and is powerful. If that is the only direction of causation for observed patterns of segregation then, essentially, social segregation is a manifestation of voluntary sorting, conditioned by income. Just as richer households buy more expensive and better clothes and better holidays, health care and educational opportunities for their children, so they 'buy' better neighbourhoods. If this is the direction of causation, the equity problem is not with the places in which people live but with the distribution of incomes. Unless there is clear evidence of reverse causation, the case for mixed communities cannot be evidence based.

It is, of course, plausible that geographically concentrated poverty is a greater social evil than dispersed poverty. There is a strong correlation between living in a deprived neighbourhood and being poor; or living in a neighbourhood dominated by immigrants or ethnic minorities and being an immigrant or a member of a minority ethnic group. So it might seem obvious that living in poor and deprived neighbourhoods must impose costs on the inhabitants of those neighbourhoods beyond the disadvantages of low incomes, poor health, migrant status or lack of labour market skills. The families living in such neighbourhoods experience poor services, frequently have a worse environmental quality (atmospheric pollution or noise), suffer greater ill health and are much more likely to be the victims of crime. The schools which serve such neighbourhoods are on average worse – certainly measured by the exam results their pupils achieve or by truancy rates. Children grow up with less successful adult role models and with peer groups who lead them into bunking off school and petty crime. They do not have the chances in life that children raised in advantaged neighbourhoods have. That seems obvious and it is what we appear to believe.

The problem with this conclusion is that it ignores a number of difficult facts. The first of these is that in all cities for which there is – or ever has been – evidence, neighbourhoods have been segregated. This was very clearly the case in ancient Rome in which there were neighbourhoods segregated by artisanal trade as well as income. The particular patterns of segregation seem to be remarkably stable over time. Many of the London neighbourhoods amongst the poorest in 1881 were still amongst the poorest in 2001 (Meen *et al.*, 2007); there is substantial stability in the pattern of the local authority areas which were most segregated in 1971 and in 2001 (Meen, 2006). Moreover, when policy has deliberately constructed ‘mixed’ neighbourhoods, over time they have tended to become segregated again.

Perhaps the English village provided the romantic blueprint for the ‘mixed community’. But even there, the ‘rich man was in his castle and the poor man at his gate’. Being small communities, however, the rich ‘neighbourhood’ sometimes consisted only of the ‘big house’ or the manor. The rural poor often lived in crowded hovels – most of which have not survived. The larger an urban area is, the larger the areas dominated by particular types of household, rich or poor, tend to be (Gordon and Monastiriotis, 2006). As Krupka (2007) points out, using neighbourhoods of roughly constant size (such as census tracts or local authority areas), the larger the city is, the greater the degree of measured segregation there will appear to be, other things being equal. This is because there are enough households in particular income groups to fill up more completely the chosen spatial definition of ‘neighbourhood’. Useful definitions of neighbourhood, therefore, are likely to vary with city size and be largest in the largest cities.

Specialised neighbourhoods

Throughout this report, this term is used to indicate a residential neighbourhood in which households of a particular character tend to be concentrated. Deprived neighbourhoods would therefore be an example; but so would neighbourhoods predominantly occupied by other groups such as middle-aged, middle-class white commuters, young professionals, young families, Sylheti-speaking Bangladeshi Muslims, Hindi-speaking Hindus or Polish migrant workers.

With the ex-urbanisation of British cities, villages – or at least those that have an agricultural origin – typically have become segregated, rich, commuter communities. Functionally such villages have become component neighbourhoods of large city regions; in the sense used in this report, they are ‘specialised neighbourhoods’ of large urban areas. Indeed, it can be argued that specialisation is the central contribution of cities to progress and welfare.

Underlying the longevity and pervasiveness of residential segregation in human settlements is the second difficult fact ignored by advocates of ‘mixed neighbourhoods’. Specialisation underlies the agglomeration economies cities generate, both in production and in terms of the additional choices they provide for consumption and lifestyles; and segregated neighbourhoods are simply the flip side of specialised neighbourhoods. A larger number of specialised neighbourhoods provides a wider choice of urban community types and social settings in which to live. But like all other choices about what to consume, such choices are strictly subject to the constraint imposed by one’s income.

This is the third difficult fact advocates of mixed neighbourhoods ignore: establishing the direction of causation. If neighbourhood choice is conditioned by income, poor neighbourhoods exist because there are poor people and we live in an unequal society; and, as is explained below, we may be collectively and individually better off living in neighbourhoods with other similar households, whether we are rich or poor. For any given overall distribution of household incomes that could be an argument for having specialised neighbourhoods. It certainly is not, however, an argument for having inequity or poverty within a rich society.

Agglomeration economies

Living in large concentrations – cities – creates costs: higher costs of scarce space, congestion, pollution and more crime. But there are counterbalancing advantages which economists call agglomeration economies. These are benefits to both firms and households which arise from close proximity and are not directly reflected in prices. So financial firms in the City of London become more productive both by being located in close proximity to other financial firms and because they are close to specialised support services. They are also more productive because of the extraordinary range and depth of skills they can draw on. At the same time households may not just have more and better labour market opportunities from living in large cities but also have a much richer range of cultural and consumption opportunities. They may also gain from locating in specialised neighbourhoods with other complementary households. This may enrich social interaction and cultural opportunities, provide useful support networks and, it appears, improve labour market access. Agglomeration economies most obviously manifest themselves spatially in the form of specialised areas of economic activity such as the City of London or Soho's media cluster. They appear also to manifest themselves in specialised neighbourhoods although there are other reasons for segregation as well.

The purpose of this research is to subject the conclusions people have drawn from observing concentrations of deprivation, and the policies that have been implemented on the basis of those conclusions, to critical examination. The report considers the following questions:

- What conditions need to apply for a policy of imposing 'mixed neighbourhoods' to increase social welfare?
- What explanations are there for the existence of socially segregated neighbourhoods?
- How do these explanations relate to what we know about the functions of cities, the advantages and costs cities generate, and the sources of welfare?
- Do policies for mixed communities address the cause of actual deprivation and, if so, are they cost effective compared to other remedies?

These questions are important because a reduction in the intensity of social segregation, by means of active policies to foster ‘mixed communities’, is an explicit aim of government policy (ODPM, 2005). Attempting to achieve the aim consumes significant resources, particularly in the realm of social housing, planning policies and expenditure by developers as a result of Section 106 agreements. A condition of planning permission is often that a significant proportion of a development is composed of ‘affordable’ housing within the reach of lower-income households. If, however, making communities more mixed (or less segregated) does not improve the welfare of poorer people and reduces the welfare of richer people – or just makes no difference to either group – then it is a waste of real resources which could have been used to actually improve the position of poorer groups, if we had had a better understanding of how cities worked and of the sources of welfare.

The report is structured as follows:

- First, there is a brief discussion of the origins of the idea that mixed neighbourhoods represent a socially desirable way of living.
- Second, it examines whether living in a worse or more deprived neighbourhood is a separate evil from poverty itself – if it reduces a person’s (child’s) chances in life. This is commonly called the ‘neighbourhood effect’ and is examined in two ways:
 - by looking at the impact on welfare if people are moved from deprived neighbourhoods to more affluent ones. This draws mainly on evidence from the Moving to Opportunity (known as the MTO) experiment in the USA, a unique, semi-scientific, experiment set up to help some poor households to make such a move and to track the results.
 - by examining how living in mixed neighbourhoods affects the life chances and welfare of the poor. It considers how labour markets work and the role within that of neighbourhoods and informal contacts.
- Third, the report reviews the evidence as to why neighbourhoods segregated by income persist. It looks at:
 - the dynamics of neighbourhood segregation – what happens to people in poor neighbourhoods who upgrade their skills
 - the way in which housing markets effectively price the poor out of nice neighbourhoods.
- Finally, it concludes with a section which examines the implications of these findings for policy in the light of the focus on mixed communities and how this relates to the arguments about the relationship between poverty and place and ‘neighbourhood effects’.

1 Why neighbourhoods should be mixed

The desire for neighbourhoods to be more 'mixed' or 'balanced' is not new. It can be traced back at least as far as the nineteenth-century designers and visionaries who gave rise to the Garden City Movement and, ultimately, to town and country planning. One of the first developments reflecting these new impulses was Bedford Park, in Chiswick, in West London, which began with the construction of the District Line of the Underground in 1871. It was designed to provide a community within easy reach of London and as a home for liberal professionals and artists, with cottages as well as substantial middle-class homes, in order to ensure 'social balance'. The construction of cottages was stopped, however, soon after the first residents arrived and complained that such houses would 'attract the wrong sort of tenants' (Affleck Greeves, 1975, caption to Figure 108). Similarly, Hampstead Garden Suburb, started in 1910 by two disciples of Ebenezer Howard, was intended to be a 'balanced' community but within a short period had become an affluent professional suburb (Weinreb and Hibbert, 1993, p. 367).

More recent work, associated notably with Wilson (1987), identified a problem of social exclusion, with significant harmful effects associated with living in neighbourhoods in which poverty was concentrated. This was part of the argument of ODPM (2005):

People living in deprived neighbourhoods are less likely to work, more likely to be poor and have lower life expectancy, more likely to live in poorer housing in unattractive local environments with high levels of antisocial behaviour and lawlessness and more likely to receive poorer education and health services. Living in a deprived area adversely affects individuals' life chances over and above what would be predicted by their personal circumstances and characteristics.
(ODPM, 2005, p. 6)

The report documented in great detail differences in outcomes for people living in deprived areas (defined as the 10 per cent most deprived wards identified on the Index of Multiple Deprivation) compared to the average for England as a whole. Worklessness rates were some 25 per cent compared to less than 10 per cent; a third more of the adult population of such areas had no qualifications; and life expectancy was two years less. To conclude from this evidence that mixed communities were the recipe for reducing inequality and tackling social exclusion was

either ingenuous or showed sleight of hand. None of the figures supposedly showing the problems of living in deprived areas related to individuals with characteristics similar to those of people not living in deprived areas. It was all measures of the average levels of income, health, education or unemployment of the inhabitants of the deprived areas. Crime rates were just that: the rate of crime in deprived neighbourhoods.

The problem is that none of this evidence is in dispute. It simply does not address the issue of causation.

Not only is the desire for mixed neighbourhoods not new, it is, one might suspect, suspiciously old. It was originally formulated as a social aspiration without any diagnosis of the root causes of poverty but with a firm belief in improving people's lives by improving the built environment. In the context of public health, perhaps this was the single biggest step ever made towards making cities healthier and more habitable. But, as a solution for poverty, it appears only to have addressed an obvious symptom. For a sceptical academic there must be a fear that researchers and policy makers have been trying to retrofit the analysis and evidence to support the 'solution' fixed on by the pioneers of town planning in the nineteenth century.

2 Poverty and place: determining causation

There are two major problems. The first is how to be sure when we compare the outcomes for individuals living in different types of areas that we have adjusted for all the relevant characteristics. When studies compare indicators of deprivation of those living in deprived communities with those living in more affluent neighbourhoods there may be important but difficult-to-measure characteristics influencing people's life chances which are not standardised for because they are not observed. For example, there may be a genetic predisposition to suffer from dyslexia which then influences a whole range of other outcomes; people also vary in their motivation and aspirations, even their luck.

The second issue is that above all people select the neighbourhoods – subject of course to varying constraints – in which they live. As Goering *et al.* (2003) point out:

Since people typically select their neighbourhoods to match their needs and resources, researchers restricted to cross-sectional, nonexperimental evidence must try to separate the impact of personal factors affecting choice of neighbourhood from effects of neighbourhood. But it is difficult if not impossible to measure all those socioeconomic, personal and local characteristics well enough to distinguish their effects.

(Goering *et al.*, 2003, p. 4)

Separating the impact of personal factors affecting choice of neighbourhood from the effects of neighbourhood requires great ingenuity and work on the part of the researcher. The evidence on which ODPM (2005) based their policy recommendations did not even begin to make the essential adjustments for difficult-to-observe personal characteristics that methodological rigour demands.

Experimental evidence from moving poor people to affluent neighbourhoods

Given how difficult and costly it is in research terms to compile clear evidence on the direction of causation, it is worth reporting on the US Moving to Opportunity (MTO) experiment in some detail. It may relate to a different country and context but it is the most carefully researched evidence available on the issue; and this is the crucial issue on which the case for mixed communities ultimately depends. The MTO

programme was set up in 1992 to ‘assist very low income families with children who reside in public housing ... to move out of areas with high concentrations of persons living in poverty to areas with low concentrations of such persons’.¹ The MTO project was designed both to pilot a policy designed to relieve the perceived problems of concentrated neighbourhood poverty and as a scientific experiment to investigate – or, some claimed, to demonstrate – the benefits of policies to achieve more mixed communities.

The pilot was carried out in five cities: Baltimore, Boston, Chicago, Los Angeles and New York. For the purposes of implementation ‘neighbourhoods’ were defined as census tracts, so on average they contained around 4,400 people. The issue of what constitutes a neighbourhood is obviously an open one (see, for example, Ellen and Turner, 2003; Durlauf, 2004; or Krupka, 2007) but census tracts, which are designed to be relatively homogeneous in terms of population characteristics, are widely used as approximations in empirical research in the USA.

To be eligible for the programme a family had to live in public or assisted housing in a ‘poor’ neighbourhood – one in which 40 per cent or more of residents were below the poverty line. They also had to have at least one child under 18, not be behind in rental payments, all family members had to be named on their current lease and no member of the family should have a criminal background. Thus, there were already two stages of selection before a family got on to the programme: (1) they had to want to move into a more affluent neighbourhood; and (2) they had to pass the eligibility criteria. This selection alone would be likely to have increased the chances of finding positive effects of moving poor families to affluent neighbourhoods. The most problematic families were ineligible and, presumably, only those who thought they had a chance of benefiting from such a move volunteered. There were also other factors which arguably may have reduced the chances of finding positive effects of the move: for example, a significant proportion of the children involved remained in the same school which had served their deprived neighbourhood.

Once in the programme families were randomly assigned to one of three groups. Group 1 – the experimental group – received a subsidy only spendable if they moved to a relatively affluent neighbourhood. An affluent neighbourhood was defined as one in which 10 per cent or less of the residents lived below the poverty line. Such families received expert advice from housing professionals – or ‘counselling’ – to help them find suitable homes. Group 2 received a housing voucher/subsidy spendable in any location and no counselling. Group 3 – the control group – got no extra help but simply continued to live where they were (although of course free to move using their own resources).

Across the five cities about a quarter of potentially eligible families applied for the programme with about 13 per cent of those applying being ruled out because they did not meet the conditions for selection. That still left some 4,600 families – enough for statistical analysis. The early evaluation of the programme, summarised in Goering and Feins (2003), was quite optimistic. Some of the successes reported were more or less definitional – such as the fact that the characteristics of the neighbourhoods in which those in Group 1 (those assisted to move to more affluent neighbourhoods) lived at the end of three years were more affluent, with lower crime rates and better schools. There was also some evidence that successful movers had slightly different characteristics both from the residents of the poor neighbourhoods from which they were drawn (younger and poorer and more likely to be a female-headed household) and from those assigned to Group 1 but who failed to move, usually because they could not find a house or flat to move to. Successful movers were more likely to be enrolled in adult education and drive a car; they tended also to have been more dissatisfied with their existing housing and neighbourhood. Wanting to escape from high neighbourhood crime rates was the most common reason for participation in the MTO project.

There were some positive findings, apparently supporting the underlying hypothesis that moving to a better neighbourhood would have a beneficial impact on individuals. There were differences across cities and some teams had earlier results than others but after two years there were indications of improvements in children's behaviour, health and educational achievement, compared to the control group, although similar improvements were observed in Group 2 families who had been helped to move to neighbourhoods of their own choice – not necessarily more affluent ones. There were also differences between girls and boys, with behavioural improvements more marked in boys. There were, however, no differences in economic outcomes. Incomes and other labour market indicators for families moving to affluent neighbourhoods showed no improvement relative to other groups. But the programme was greeted as cautiously supporting the causal link between living in a deprived neighbourhood and negative impacts on an individual's life chances:

... preliminary research on MTO families has demonstrated that beneficial, statistically significant changes have occurred in families' lives within two to four years of their participation in MTO.

(Goering *et al.*, 2002)

But as they go on to note, the modest initial success of the programme did not mean that it was a policy success. The impacts were quite modest and costs were considerable. Counselling by housing experts alone cost \$3,000 per family that successfully moved. But it did appear that the causal link had been demonstrated.

Longer-term follow-up

More recent research (Kling and Liebman, 2004; Kling *et al.*, 2005) on the MTO, tracking families over a longer period, destroys even this cautious optimism on the project: or at least suggests that causal processes are considerably more complex and outcomes of moving to an affluent neighbourhood more difficult to anticipate. Kling *et al.* (2005) report on a follow-up study, focusing on outcomes for young people aged 15 to 25, four to seven years after they moved. They pool all data for the five cities (whereas the earlier results were often based on analysis of data for only one city). For the 15–25-year-old group they have between 1,266 and 1,840 individuals in each of the three treatment groups (those helped to move to an affluent neighbourhood, those helped to move to a neighbourhood of their choice and the control group not helped to move). Their study uses sophisticated statistical methods of analysis and focuses particularly on differences in crime and behaviour.

The earlier studies had shown no improvement in economic indicators for the group moving to more affluent neighbourhoods. Longer-term follow-up confirmed this finding but the researchers looked at a wide range of indicators relating to educational achievement, health and welfare and also behaviour.² They focused on the age group – 15 to 25 – in which it was most reasonable to look for signs of improvement. It is this age group which in the general population has the highest incidence of behavioural problems and within which educational progress might be most plausibly concentrated. So if moving to a more affluent neighbourhood produced any behavioural benefits it should be easiest to find in this age group. For none of the indicators, however, did they find any significant overall differences between the groups that moved neighbourhoods compared to the control group that was not helped to move. For the age group as a whole some indicators were better and some were worse but, despite the large sample, none of these differences were statistically significant.

Subdividing into males and females did reveal some significant differences, however. Within the set of behavioural indicators were a number relating to criminality. Kling *et al.* (2005) extended the self-reported data set by also tracing administrative arrest records. This allowed a comparison of two independent sources of data. They found that while for violent crime there continued to be non-significant but – if anything – favourable effects for both the groups which moved, for property arrests there were significant differences for girls compared to boys. For both boys and girls in the first two years after moving, property arrests fell, although the reduction was not statistically significant, but for boys it then rose and rose significantly compared to the control group during the third and fourth year after moving. Overall – for both sexes combined over the whole four years – there was no significant reduction in

either arrests in total or in property arrests because the differences for boys and girls balanced out. For a small subsample which it was possible to track over a six-year period, the increase in property crime arrests for boys continued at about the same level. Similar, but non-significant, gender differences are reported, in passing, for mental and physical health, education and substance use. Overall, males in the moving group had scores on the behavioural problem index some 20 per cent worse and arrest rates for property crime some 30 per cent higher than those of the control group of young males who did not move from their poor neighbourhoods.

They then sift the evidence for explanations of the difference in outcomes for boys compared to girls and the apparently initial favourable changes followed by significant negative effects for boys from two years after moving. Explanations might be peer group sorting – boys end up finding similar peer groups in their new neighbourhoods to those they had in the previous ones; differences between boys and girls in coping strategies; and a comparative advantage for the boys in property offending. The reduction in girls' arrest rates for property crime suggested that the increase in arrests for boys could not be explained by more efficient policing in the affluent neighbourhoods. Kling *et al.* (2005) judged peer group sorting effects as implausible as an explanation since similar patterns of change were evident for both boys and girls even when they were subdivided into those with a history of criminal or behavioural problems before the move. If peer group sorting was the explanation then one would expect those who had worse behaviour prior to moving would not have improved (if girls) or got worse (if boys) after the move. Differences in coping strategies in relation to the upset caused by moving to a different type of neighbourhood did not seem plausible as an explanation of their findings, they argue, because in the early period following the move both boys and girls showed similar reductions in arrests: it is only after two years, when presumably most young people would have got over the disruptive effects of the move, that boys' arrest rates for property crime rise significantly.

Kling *et al.* (2005) come down in favour of what they call a 'comparative advantage in property crime'³ explanation partly by elimination but also because of the evidence in relation to educational performance. Although the schools which young people went to after moving to more affluent neighbourhoods were better on academic performance indicators for the children attending them, it turned out that moving did not significantly improve the educational performance of the individual children. Thus, children who did not move ended up doing better in school relative to their peers than children who moved. The children who moved now had academically stronger peers against whom they were measured. Moreover moving boys did worse than girls relative to their new peer groups. They were less academically competitive than girls within their new schools. Boys were also less subject to parental supervision,

had more absences from school and lower educational ambitions than girls. The girls who moved had improved expectations for completing college compared to the control group, greater participation in sports, a reduction in school absences and an increased association with peers who engaged in school activities. None of this was true of the boys who moved. Thus, the authors conclude the most plausible explanation is that as boys adjusted to their more affluent neighbourhoods, they found they had a comparatively worse position in educational terms compared to their new peer group neighbours but an area in which they could succeed in their new neighbourhoods was in property crime.

The Moving to Opportunity experiment in the USA has been summarised at length because, given the manifold difficulties, it is the best source of evidence for identifying the effect moving from a really deprived neighbourhood to a more affluent one has on those who make the move; it is equally the best source of evidence for identifying any beneficial effects of constructing mixed neighbourhoods. Other earlier studies and the initial evaluations of the MTO project are summarised in Durlauf (2004). Durlauf concludes that on the basis of studies then available, the balance of the empirical evidence did suggest there was a significant influence of neighbourhood, although he was acutely aware of the difficulties of identification.⁴ This conclusion is overtaken by the longer-term follow-up studies of the MTO project. From these there seems to be no evidence of any improvement in the economic situation of adults who move, and outcomes for children who move are complex and causation is uncertain, even when there appear to be significant effects.⁵ On balance, there seem to be negative outcomes for boys on a range of indicators and positive outcomes for girls. One of the few indicators showing an improvement for both boys and girls is an important one – arrest rates for violent crime – but so far research does not show this to be statistically significant.

The evidence from other studies on neighbourhood effects

Similar experiments have not been tried in other countries. Short of an experimental control generated by randomly allocating families to one of three groups, long-term cohort studies offer the best solution to separately identifying the pure impact of neighbourhood on life chances. Two of the most convincing of these cohort studies, one in Canada and one in Britain, show a similar lack of significant long-term effect of neighbourhood on life outcomes or success. Oreopoulos (2003) used a Canadian sample survey which tracked individuals over 30 years. The simple relationship between neighbourhood of origin and subsequent earnings appeared to be

significant but, of course, families have a big influence on the behaviour and choices of children. Once the earnings of siblings were added as an explanatory variable, the statistical influence of neighbourhood entirely disappeared. The final conclusion was that the characteristics of the neighbourhood in which an individual was born or raised had no statistically significant effect on long-term labour market outcomes or on prosperity.

This finding is consistent with the methodologically completely different study of Bolster *et al.* (2007). Using a British Household Panel Survey-derived cohort data set, following individuals for ten years, they find no evidence that original place of residence had any statistically significant influence on subsequent labour market success, whether measured as household incomes or as earnings. Their results may be slightly less persuasive than those of Kling *et al.* or Oreopoulos since their data track individuals over only ten years and they investigate only economic outcomes. But they explore neighbourhood definitions, concluding that a small unit, of only about 500 people, is the most appropriate measure of neighbourhood, and they use statistically sophisticated techniques. They cannot entirely reject the possibility that the original neighbourhood in which someone lived influences their future prosperity but they find no statistical evidence that it does. Indeed, although not statistically significant, their result is in fact the unexpected one. After standardising for all the other factors which influence incomes and earnings, coming from a poorer neighbourhood is associated with increased current prosperity! They conclude rather as Cheshire (1979):

[This] does not remove [the case for] an area basis for policy. The high levels of clustering may mean that the most efficient way of targeting individual policies is on an area basis. Nevertheless the results support the idea that the main sources of low incomes are to be found in earnings, employment and demographics, not in neighbourhood characteristics.

(Bolster *et al.*, 2007, p. 34)

Work for countries in continental Europe has not been able to apply such methodologically robust methods. There are no examples of either quasi-experiments, such as the MTO project, or long-term cohort studies. Musterd (2006), however, does report work tracking individuals over time in the Netherlands and Sweden and relating changes in their prosperity to their individual characteristics and the characteristics of the neighbourhood in which they originally lived. These are for somewhat shorter periods than even the work of Bolster *et al.* (2007) and the controls and statistical methods used are perhaps somewhat more limited. In the Netherlands, Musterd (2006) reports only the weakest and non-significant

of neighbourhood effects for the very poorest, although the impact of a 'bad' neighbourhood seemed to be slightly stronger for the next group up the ladder. Outcomes were measured as the probability of moving out of benefits and into a paid job between 1989 and 1994. In the Swedish cities there seemed to be more evidence of neighbourhood effects during the 1990s, although these were still weak and high immigration rates in the early part of the period may have influenced the results. In the Swedish work, neighbourhood effects were also measured in terms of probability of people of working age moving into work off benefits, but over a longer period from 1991 to 1999.

Specialised neighbourhoods as sources of welfare

As noted above, the tendency for people to sort into segregated or, in some sense, specialised neighbourhoods is a very strong one. Cities which are socially segregated along income lines are a universally established fact. Authors who have recently addressed such issues include Hårsman (2006), Meen (2006) and Musterd (2006). Meen's work for Britain, already briefly summarised, shows beyond argument that not only is social segregation on income and other measures a feature of cities at least since the late nineteenth century, but the incidence of such segregation is very persistent over time. Many of the same cities with the sharpest incidence of spatially segregated neighbourhoods measured on 1971 data reappear in 2001 data. Many of the most deprived (and most affluent) neighbourhoods in London in 1881 appear again in much the same positions in 2001.

Hårsman (2006) documents the stability of patterns of both income and ethnic segregation, particularly in Stockholm. In his detailed study of the long-term evolution of patterns of ethnic segregation, he shows how its incidence has tended to intensify over the last 20 years and is only partly explained by income differences. His evidence is at least consistent with people from ethnic minorities mainly choosing to live in ethnically specialised neighbourhoods, despite official Swedish policy pushing for integration.

Musterd (2006) synthesises his work on three related areas: the (lack of) influence of segregation on the overall economic prosperity of the wider urban area; the very distinct neighbourhood choices of skilled workers in different economic sectors in Amsterdam; and comparative work on the effects of neighbourhood mix on individual success in the Netherlands and Sweden summarised above. In particular, he shows that highly skilled workers in different service sectors choose different types of neighbourhood. Workers in ICT, financial services and banking choose

to concentrate in the suburbs of Amsterdam while skilled workers in the creative industries are selectively concentrated in central neighbourhoods.

Labour market matching

These findings are entirely consistent with those of Bayer *et al.* (2005) for Boston. For a sample of 110,000 employed people, they match the precise location of residence and jobs and find a very strong tendency for people who live in the same neighbourhood (defined as a census block) also to work in the same census block. They make an elaborate and convincing effort to eliminate the effects of transport networks and other factors which might explain this finding independently of social interactions with neighbours – excluding non-family members. They find strong evidence showing that such interactions between neighbours strongly influence the job locations of neighbours and that such interactions are more influential if neighbours are of a similar level of education, are of similar age and both parties have children. Their conclusion is that social interactions within neighbourhoods between people similar to each other are a significant factor in how urban labour markets work and people find jobs.

Both conclusions are consistent with earlier US findings, such as those of Blau and Robins (1992), about the importance in job search of informal networks with friends and relatives. Blau and Robins found that while this was a frequent – but not the most frequent – method of job search, and particularly important for the less skilled, it was the most successful form of job search from the point of view of both workers and employers. It produced the highest rate of job offers per contact and the highest rate of job offer acceptances. In their recent review of the literature, Ioannides and Loury (2004) report that, in addition, such jobs found through personal contacts lasted longer, so that around half of all jobs were held by people who had found them this way. Ioannides and Loury also report a persistent increase in the use of informal contacts as a means of job search over time – despite the rise in the Internet – and that it is more prevalent the larger a city is: in cities of more than 500,000 more than half of unemployed job searchers relied on friends and acquaintances; in cities smaller than 100,000 less than 10 per cent did. Friends and acquaintances were a much more important source of jobs for those searching while unemployed than for those looking for new jobs while they were employed.

These last two observations are particularly important in the present context. They show an important source of positive effects of specialised neighbourhoods for lower-skilled as well as for more skilled workers – unemployed job seekers are on average less skilled than employed job seekers but use friends and acquaintances more. The

fact that the use of friends and acquaintances increases with city size is consistent with the idea that specialised neighbourhoods represent a form of agglomeration economy. An advantage of larger cities is that they can support a greater range of specialised neighbourhoods and such neighbourhoods seem to be a fertile source of effective job matching.

Another less obvious example of the ways in which specialised neighbourhoods may increase productivity is provided by work on ethnic neighbourhoods. There are obvious consumption benefits involved, as is briefly summarised below, but they may also yield income by helping people get information relevant to their jobs or find jobs. There have been numerous studies of the role ethnic neighbourhoods play in mediating access to jobs but a recent example in a European context is provided by the work of Coniglio (2004). He has a model in which minority non-local language speakers access labour markets via neighbourhood bilinguals who intermediate information within the wider labour market. Thus, for those who cannot speak the locally dominant language, living in ethnically segregated neighbourhoods generates higher productivity and incomes. He shows that such a model is consistent with the formation and stability of ethnic neighbourhoods in Norwegian cities.

Consumption and welfare benefits

There seems to be quite persuasive evidence that specialised neighbourhoods have labour market advantages, even for the poor; indeed particularly for the less skilled who rely on personal contacts to a greater extent to find jobs. Even if there are some possible negative neighbourhood effects for poorer groups – and the more meticulously studies have been able to offset for other factors influencing personal outcomes the less have they found any such effects – still the question also has to be asked: are there also consumption benefits from living in specialised, and so segregated, neighbourhoods? People systematically tend to choose such neighbourhoods. That, itself, suggests there are benefits.

Choice of neighbourhood is constrained by income, as are most economic choices, because houses in nicer neighbourhoods cost more (as is discussed in detail below) but people choose neighbourhoods on the basis of what a neighbourhood offers them which will either yield welfare directly or increase their expected incomes. And specialised neighbourhoods are better able to do both. There is also the issue addressed below that people's welfare does not only depend on the level of their own income but on the level of their income relative to others living near them and with whom they associate. The strong findings on this, reported in Luttmer (2005), point to that being a very powerful reason for choosing to live in, and policy re-enforcing

the existence of, neighbourhoods segregated by income. This is the very reverse of a policy of 'mixed neighbourhoods'.

Specialised neighbourhoods provide direct consumption benefits because they increase the range of choice for people with respect to the types of neighbourhood in which to live; and people and families of similar incomes, tastes or points in the life cycle tend to consume similar goods and services and require similar amenities. Living in a neighbourhood with a local Waitrose, Montessori school or gastropub commands a premium; neighbourhoods with pawnbrokers, a local Aldi and a takeaway are cheaper. If you are a recent immigrant and want to be able to continue to speak your original language, engage in your native culture or religion and buy food or other items you have developed a taste for, then there are great advantages in living in neighbourhoods with concentrations of people of similar origin. This is one obvious source of the ethnic neighbourhoods of large American and European cities. A recent study found linguistic communities in London (neighbourhoods) with children in primary schools speaking 300 different languages (Baker and Eversley, 2000), living in linguistically and culturally specialised neighbourhoods.

But such agglomeration economies in consumption are not confined to ethnic groups. Families with young children will find benefits of networks and facilities, and mutual support as well as information, if they live in neighbourhoods with substantial numbers of families at the same stage in life. Young singles who eat out and have a taste for urban entertainment and culture will similarly find agglomeration economies in consumption if they find neighbourhoods in which large numbers of like-minded people are concentrated. More educated people, and people working in the liberal arts, may prefer to live in neighbourhoods with concentrations of similar types, sharing leisure and cultural pursuits and seeking similar local shops; business people may equally gain consumption benefits from concentrating in neighbourhoods in which other business people live.

Ideas and insights about the contribution of specialised neighbourhoods to productivity go back a long way – for example to Marshall's (1890) famous account of the ways in which industrial districts increase productivity and growth, because 'knowledge is in the air'. Luttmer's (2005, p. 963) central idea that people's welfare depends not just on their income but decreases as their own income falls relative to other people's also has distant roots. He quotes Adam Smith (1759, p. 963):

Nothing is so mortifying as to be obliged to expose our distress to the view of the public, and to feel, that although our situation is open to the eyes of all mankind, no mortal conceives for us the half of what we suffer.

He also quotes John Stuart Mill:

... men do not desire to be rich, but richer than other men

In attempting to test for the significance of this proposition and quantify its effects, there are a number of methodological problems – particularly the possibility that welfare is itself a relative concept. However, Luttmer (2005) goes to considerable lengths to eliminate possible biases from his estimates, including testing against absolute measures related to welfare, such as marital conflicts, as well as against reported personal welfare itself. He analyses a sample of about 10,000 individuals from two phases⁶ of the National Survey of Families and Households living in a sample of 965 neighbourhoods – or 555 neighbourhoods for the subsample of neighbourhoods with respondents living in them at both time periods. His findings are striking. Roughly speaking losing £1,000 of income seems to make people feel about as much worse off as their neighbour gaining £1,000! The estimated impact of a positive change of household income on reported welfare is quantitatively almost the same as a similar, negative, change in neighbourhood mean incomes.

He subdivides the sample into households of single adults, couples living together at both sampling dates (stable couples) and adults living with different partners in the second time period. The strong negative impact of neighbours being richer on people's sense of well-being estimated for the three groups together turns out to be explained mainly by the (large) subsample of stable couples in the data set. Single people do not seem to experience a loss of a sense of well-being from neighbours' extra income. There is no statistically significant impact of neighbourhood income on measures of welfare for single people. Moreover, the effects are stronger for individuals who socialise with neighbours and the effect of neighbours' incomes is stronger if the neighbour is more similar to you (only tested for those with and without a college education). If disaggregated measures of reported welfare are analysed then the main effects were in terms of time with family and hours worked. That is, it appears that people living in communities where neighbours have higher mean levels of income relative to their own compensate by working longer hours and spending less time with their families and in leisure. This causes them to feel themselves to be worse off and have lower reported welfare. The evidence points to a real impact of relative as well as own income on welfare.

Moreover, there is no significant effect of overall neighbourhood inequality. That implies it is not living in a less equal neighbourhood that lowers an individual's welfare but specifically having an income lower than the neighbourhood average. Perhaps the main problem with what is a very careful study is the definition of 'neighbourhood'. For reasons of data availability these are the Public Use Microdata

Areas which, in the 1990 Census, had a mean population of 144,000 people. They are certainly considerably larger, therefore, than the usual concept of a neighbourhood. On the other hand, given that the findings capture a real effect of relative neighbourhood income which, on the basis of the accumulation of evidence Luttmer (2005) provides, seems plausible, then having data for smaller areas, corresponding more closely to conventional ideas of neighbourhoods, would seem likely to make the impact more significant still. The study finds strong evidence that social interaction with neighbours is a causal factor and presumably social interactions per neighbour are considerably greater with your nearest 500 neighbours than they are with those living far away and not sharing the same schools, shops or parks. In a neighbourhood of 144,000 there will be few such opportunities to interact with most 'neighbours'; in a smaller neighbourhood of 500 the chance of such interactions increases greatly. So the incomes of nearer neighbours are more likely to affect one's sense of well-being than are those of more distant ones.

Luttmer's results seem to imply that society as a whole would get considerably more welfare from a given total income if individuals and families did not have the higher incomes of neighbours confronting them on a permanent basis. This seems to apply to both poorer and richer groups. The poor would feel their absolute poverty less if they were not surrounded by richer households. If Luttmer's results apply generally, therefore, the welfare of all would be improved if we had neighbourhoods more segregated on the basis of income rather than less segregated.

3 The dynamics of neighbourhood segregation

There is little argument about the fact that people and households select themselves into neighbourhoods and that neighbourhoods tend to have a degree of homogeneity with respect to the characteristics of the people and families who live within them. Equally, the fact that cities have neighbourhoods segregated on the basis of income is uncontested. The issue is why rich and poor neighbourhoods emerge and, specifically, whether living in a poor neighbourhood makes poor people or their children even worse off than they would otherwise have been. Associated with that question is whether, if living in a poor neighbourhood does make people even worse off than they would otherwise have been, the impact is sufficient that policy should specifically address it.

It is perfectly possible that any neighbourhood effect – if it exists – is comparatively small and that the cost of policies to address it effectively is so great compared to the costs of other policies to improve the welfare of poor people that attempting to achieve ‘mixed neighbourhoods’ is simply not cost effective. It has already been noted that for the MTO project the average cost per head of just providing the expert personal advice needed to help poor people successfully find accommodation in an affluent neighbourhood was \$3,000. Something the studies did not examine at all was what happened to the houses vacated by the participants who moved out of the poor neighbourhoods. Assuming they were in turn filled by other poor people, then the total number of households still living in poor neighbourhoods was unchanged by the project: so presumably, therefore, were any costs associated with concentrations of poverty in neighbourhoods.

This brings us to the issue of neighbourhood dynamics. Too frequently, the assumption implicit in arguments for neighbourhood-based policies is that the inhabitants – the ‘local community’ – are a stable set of families. But this is not the case. Neighbourhoods are more like buses with a constantly changing set of people in them: people/families are always moving in and others moving out. This process is not random and may be significantly influenced by neighbourhood-based policies themselves. The overall pattern of neighbourhoods is also related to the overall distribution of income within the urban housing market concerned: a case can be made, indeed, that neighbourhood segregation by income – remembering that many personal characteristics such as health, membership of disadvantaged groups, education and skills as well as criminality are strongly correlated with income – is effectively just the spatial articulation of the overall income distribution.

If society's income becomes more unequally distributed – the rich become richer relative to the poor – then residential segregation should be expected to become more sharply demarcated: 'society' again being composed of the set of households who occupy a given housing market area.¹ The mechanism which produces this association between inequality and spatial segregation is the interactive sorting role of housing and labour markets. Both housing and labour markets are intrinsically 'spatial'. Houses and jobs are located precisely in space and the occupation of a particular house simultaneously determines a person's access to their current job and other jobs and confers the ability to 'consume' a wide range of amenities, neighbourhood characteristics and local public goods.

Mobility – does getting on mean getting out?

First, let us look at some of the evidence of the determinants of mobility between neighbourhoods and why we should not expect policy interventions to be non-random in their impact on the composition of a neighbourhood. An evaluation of a City Challenge programme of urban regeneration in Harlesden, in West London, suggested that training programmes had been well designed (after a false start) and well delivered.² There had also been improvements in a range of neighbourhood qualities such as fear of crime. The City Challenge programme had lasted for five years and had injected substantial funds – £37.5 million – into a small neighbourhood. Despite the apparently successful training provided and the focus of the funding, unemployment among people living in the City Challenge neighbourhood at the end of the programme was higher relative to both West London as a whole and comparable disadvantaged neighbourhoods than it was at the start of the programme.

An obvious potential explanation was that people who had improved their labour market position as a result of the programme had differentially moved out of the neighbourhood. People had moved into the vacant housing to replace those moving out but those moving in had even more unfavourable labour market characteristics than the average for the community as a whole, and worse than those they replaced. To the extent the training programmes succeeded, they induced more churn. Paradoxically, therefore, the very success of the programme – if it had induced selective mobility – could have led to the deterioration in the unemployment rate of current residents noted at the end of the period.

To test this three samples were constructed of people of working age by comparing electoral registers for the start and end of the period: one sample was of people

moving out of the neighbourhood during the period of the programme (the 'Outmovers'); one of people resident within the neighbourhood throughout (the 'Stayers'); and a third of people moving into the neighbourhood over the five years of the programme (the 'Inmovers'). All Outmovers who could be identified and tracked were surveyed. Samples of the other two groups were drawn randomly from the electoral register. Tracking Stayers and Inmovers was not difficult but tracking and interviewing Outmovers presented more problems. They were tracked by personally calling at their former addresses and asking for their current whereabouts and also by using electoral registers for the end period for all London boroughs and from those identifying electors who had previously been resident in the Harlesden City Challenge area. Former residents moving out of London altogether were not traced. This allowed us to track and interview a sample of 50 Outmovers but there was probably some selection bias with respect to those who were located and interviewed since successful returns from Outmovers not on the electoral register in their new destinations were particularly difficult. Two-thirds of the interviewed Outmovers were traced by comparing electoral registers.

The usefulness of the training schemes provided by the City Challenge programme was rated highly and this rating did not vary between groups. Attendance on the training schemes among the currently employed, however, had varied considerably across groups. The Stayers and the Inmovers displayed very low levels of participation (Stayers 13 per cent; Inmovers 6 per cent) whereas 37 per cent of the Outmovers had attended such courses. Perhaps reflecting this, the Outmovers, as Table 1 shows, had substantially improved their position in the labour market compared to five years previously on all dimensions and this improvement was statistically significant compared to either of the other groups.

The Outmovers were less likely to be unemployed than either other group (Table 2) – although this was only statistically significant when compared to the Inmovers. Not only that but, if employed, Outmovers were significantly more likely than either other group to have a full-time job. Of the currently employed in the Stayers group, 23 per cent had a part-time and 77 per cent a full-time job, whereas amongst the Inmovers only 13 per cent had a full-time job. Amongst employed Outmovers, in contrast, 97 per cent were working full time.

Thus, this evidence on the relationship between mobility and labour market position points very strongly to the conclusion that if a person living in a deprived neighbourhood improves their employability and gets a job, they have a much increased probability of moving out to a better neighbourhood. It also, of course, demonstrates the irrelevance of judging the success of programmes designed to improve the employability and life chances of the residents of deprived

Table 1 Mean rating of current job compared to job held five years previously*

	Sample size (total number)	Skill level of job	Pay	Conditions	Satisfaction
Stayers	270	0.45	0.63	0.53	0.54
Inmovers	63	0.77	1.23	1.23	0.92
Outmovers	48	1.4	1.47	1.6	1.2

* Respondents rated the four attributes of their current jobs relative to the job they had held five years previously on a five-point scale ranging from -2 (much worse) to +2 (much better): so the larger the number the greater the improvement.

Table 2 Labour market position at time of survey

	Sample size (total number)	Inactive (%)	Currently unemployed (%)	Employed (%)
Stayers	270	42	15	41
Inmovers	63	31	21	48
Outmovers	48	39	9	51

neighbourhoods by the unemployment rate of the residents of that neighbourhood at the end of the programme. The more successful the programme, the more mobility it is likely to induce regardless of where jobs are located since those who upgrade their skills and get (better) jobs – even if they get a job close to where they used to live – are more likely to move to a less deprived neighbourhood. Since Inmovers have much higher unemployment rates than other groups, the measured unemployment rate of current residents will rise. Compared to the MTO programme, which had no impact on the labour market position of adults moving to affluent neighbourhoods, it should, however, be noted that providing well-designed training for Harlesden City Challenge residents did improve their labour market positions; but those who benefited disproportionately moved out.

Nicer neighbourhoods cost more

As Table 1 shows, improving one’s labour market position usually implies becoming richer. The Outmovers not only had relatively more skilled and more interesting jobs but their relative pay had increased compared to the other groups. As we learn more about how housing markets work, so we can understand better how they may interact with labour markets to sort households and individuals into more and less desirable neighbourhoods on the basis of their incomes. Cheshire and Sheppard (2004) take the case of good schools. Better schools (when access to a school is determined by geographical catchment areas) are an example of a whole class of ‘goods’ one might call truly ‘positional’: that is, goods which can only be consumed by living in the appropriate place where they are available; and for which the ability

to buy places giving access to them is chiefly determined not by absolute income but income relative to others who are competing for the same 'goods'. The most important and obvious of these in Britain is access to the best state schools. To the extent that a family's address controls access to these, educational policy in Britain has created a situation in which it is not the most gifted or the most deserving who benefit from the best, supposedly free, state schools but those who can afford to buy access to them through the housing market.

There is now a wealth of evidence showing that housing is a complex good, composed of many attributes or characteristics, each of which commands a price. Since Rosen (1974), 'hedonic' analysis has become the standard framework within which these prices are analysed and estimated. 'Hedonic' is really just a way of thinking about the individual attributes of houses (that give pleasure and so cause people to be willing to pay for them) and then estimating the price of each. The price of any given house is then the sum of the prices being paid for all its individual and particular attributes. Although the idea is simple, it has proved fruitful as a way of analysing housing markets. Hedonic studies of housing markets have mushroomed and it seems to be an area in which genuine progress of a scientific kind has been made. Studies have incrementally improved the methodology and refined the estimation process.

Evidence that people buy local public goods through their choices in the housing market goes back at least to Oates (1969) and estimates of the price paid for school quality have improved over time. Recent studies in the USA have included Haurin and Brasington (1996) and Black (1999). One of the first studies in the UK was Cheshire and Sheppard (1995) but more recent estimates by the same authors (Cheshire and Sheppard, 2004) reveal much more about the process. Indeed, it has become increasingly clear how complicated housing markets are and how sophisticated are the ways in which housing attributes – and so ultimately housing itself – are priced.

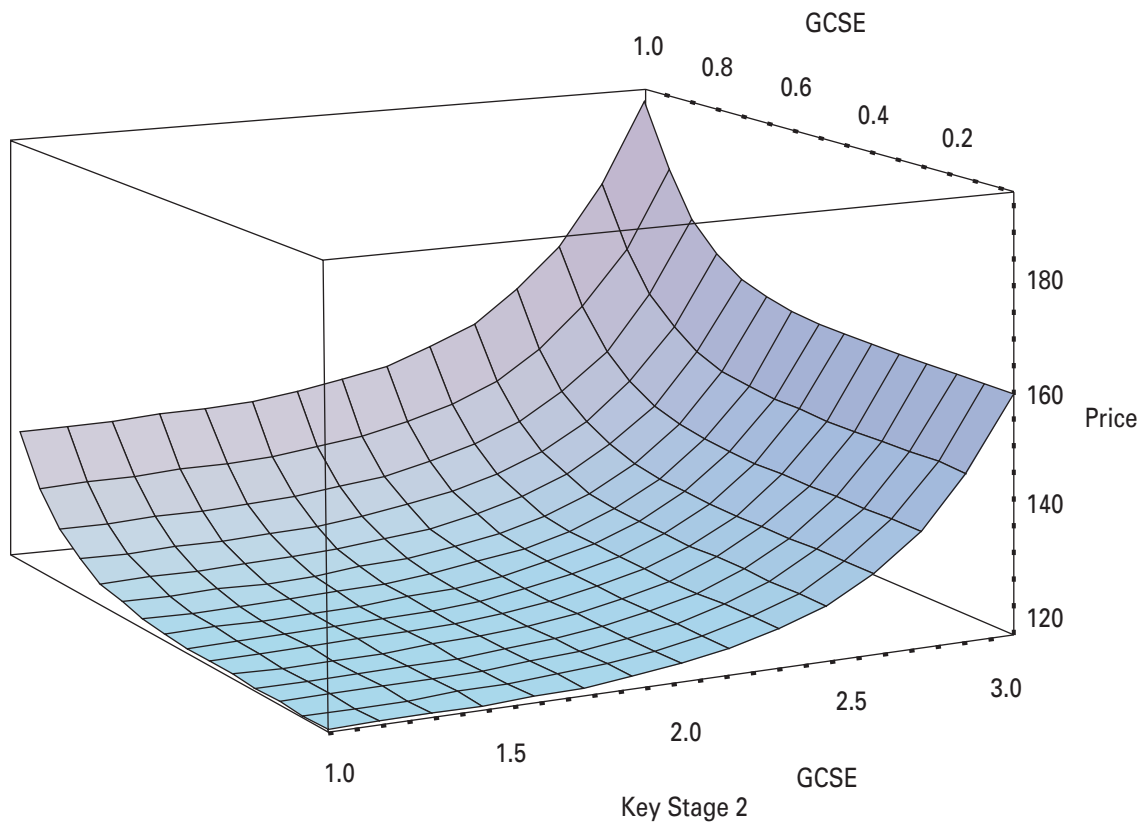
What people appear to buy as they engage in house hunting is not the current set of attributes but something corresponding to the expected long-run set of attributes. Cheshire and Sheppard (2004) found that it was not just the current quality of primary schools, as reflected in their most recent Key Stage 2 results, which determined the price paid for access to 'primary school quality'. The price paid also incorporated a discount for current school quality if there was more variation in the performance of the school over the past five years and if the house was located in an area in which new construction was concentrated. More consistent performance measurably increased a house buyer's confidence that a similar quality would be maintained in the future. Interestingly the effect of more new construction in the local

area in depressing house prices was specifically related to school quality. There was no significant evidence of just a general 'area of new construction' effect. It was only when local new construction was expressed as a discounting factor on local school quality that a statistically significant effect on house prices was found. More local construction increased the likelihood that an address could be reassigned to another school as the local education authority implemented its explicit policy of filling its available school capacity. It may also have increased uncertainty about the composition of the intake to the local school in the future as new households moved into the neighbourhood. So both more variation in performance in the past and more local new construction reduced the price buyers would pay for the current performance of the school a house gave access to.

Moreover, studies are finding increasingly complex interactions with other variables. For example, the price paid through the housing market for access to parks or open space of a given character appears to vary with the density of the neighbourhood, household incomes and local crime levels (Anderson and West, 2006); the price paid for proximity to open countryside varies with the likelihood of its remaining undeveloped (Irwin, 2002). In the context of school quality, Cheshire and Sheppard (2004) found that the price paid for a given quality of local school – measured in terms of results in public examinations achieved by pupils – varied with the suitability of the house to accommodate children. These are not surprising findings but data and estimation methods make it increasingly possible to estimate them and make those estimates increasingly accurate.

What hedonic studies of housing markets show is that access to higher-amenity open space, natural amenities like views or proximity to water, greater security from crime or better-quality state-provided education costs a substantial amount. The value of all such amenities and local public goods is capitalised into house prices. As an example, moving an otherwise average house from the catchment area of the worst to that of the best primary school in Reading in 1999/2000 was associated with an increase of one third in its price.³ Figure 1 shows how the price of an otherwise average house in Reading changed as the quality of its local primary and secondary schools varied.

Figure 1 Price of school quality in the Reading housing market, 1999/2000 (house price in £000s as quality of local schools varied over observed range*)



* Secondary school quality measured as proportion of pupils obtaining five or more GCSEs at grade C or better; primary school quality measured as school's mean scores on the three Key Stage 2 subjects aggregated. Percentage scores represented as proportions.

Thus, the ability to benefit from or consume such localised goods is dependent on the ability of a household to buy a house in those particular neighbourhoods which give access to them. Since the supply of such goods is relatively inelastic and varies significantly from neighbourhood to neighbourhood – like many local public goods and other amenities they are only available at specific locations – and demand increases more than proportionately as incomes rise, the price rises sharply with increasing quality and rising income. But their more or less fixed supply also means that the ability to buy such goods is more determined by how rich a household is relative to other households competing for the same local amenities than it is by the household's absolute income: that is, by where a household is in the distribution of incomes in the housing market area concerned.

More fundamental aspects of how people live and how real welfare is distributed appear to follow from this observation. As was discussed in Brueckner *et al.* (1999), cities have a natural geographically and topographically determined endowment of

some amenities – where the best views are to be had, where the natural amenities such as river frontage are available or where, as determined by prevailing winds, air quality is better. In the context of most Old World cities, of course, there was also a fixed neighbourhood within which a particularly valuable local public good – security – was available: within the city walls. These locationally fixed amenities or public goods generated clustering of those households who had a taste for and could afford them. In turn, this generated higher local incomes, supporting better local cultural and commercial amenities and classier neighbourhoods with better schools and lower crime rates. This further reinforced the attractions of the more attractive neighbourhoods.

While it is common to think of the prices of composite goods, such as housing, being the sum of a set of prices for the individual attributes of which they are made up, it is less common to consider a market for each relevant attribute with its own demand and supply characteristics. Yet, that is clearly important and the supply characteristics of individual housing attributes will vary significantly. Some, such as central heating or the number of rooms in a given space, can easily be reproduced industrially and so will be elastic in supply. Others would, in the absence of regulation, normally be elastic in supply. More urban space in aggregate (except in exceptional places such as Singapore) can always be made available by the construction of additional transport infrastructure. But in Britain, and increasingly in other countries, the supply of urban space is constrained by land use regulations such as density controls, urban containment, local zoning or protective designation. Other attributes, such as access to particular natural amenities, open spaces or the ‘best’ local, state-funded school, may be intrinsically in very inelastic supply. As noted above, the demand for most characteristics – including housing space, classier neighbourhoods and local amenities – increases disproportionately with income: it is what economists call ‘income elastic’. Estimates in Cheshire and Sheppard (1998) were that for many of this type of attribute, an increase in household income of 10 per cent was associated with an increase of 15 to 20 per cent in the amount spent on them.

It would appear to follow from this that competition for access to better-quality, locationally fixed ‘goods’ will price poorer households out of access to – or at least force them to consume lower-quality – local public goods and amenities, and so generate systematic patterns of residential segregation between richer and poorer neighbourhoods. Given that poverty is correlated with other characteristics such as lower educational attainment, poorer health, higher unemployment and membership of disadvantaged groups, it would seem plausible that residential segregation is the spatial articulation of income inequality in society. Residential segregation contributes to lower welfare for poorer groups since households derive significant welfare from access to the better-quality local public goods, including better security,

and amenities. But really this is just another manifestation of the price mechanism interacting with the distribution of income to allocate goods according to ability to pay and preferences. Indeed, it may be an important part of the explanation why access to public services provided out of taxation is closely correlated with the distribution of income (Goodin and Le Grand, 1987). Although they appear to be distributed according to need, in many cases you have to 'buy' access to them through the housing market.

A further implication is that if the distribution of household incomes changes, this will be reflected in the intensity of residential segregation. If, for example, incomes become more unequally distributed – as happened in the UK, the USA and several other OECD countries from the mid 1970s to the mid 1990s – under certain circumstances described below, there should be an intensification of residential segregation with poorer households losing welfare not just because of lower incomes but also from greater exclusion from high-quality local public goods.⁴ The increase in residential segregation has certainly been documented in the US context and discussed by Massey and Fischer (2003). They show that inequality across regions has decreased while at the same time between neighbourhoods in US urban areas it has increased.

This pattern is to be expected if the supply of at least some of these localised goods is inelastic (the 'best' local state school or a house overlooking Hampstead Heath or the Thames, for example) while the demand is income elastic. If these conditions hold then their relative price should be expected to increase if the rich get richer relative to the poor. More expensive houses in more expensive neighbourhoods will become relatively more expensive still, pricing the poor out to less desirable neighbourhoods even more completely. For example, if only 0.05 per cent of houses in London can overlook a feature as attractive as Hampstead Heath then your ability to 'buy' that feature does not depend so much on your absolute income as on your income relative to the incomes of other households who have a taste for overlooking Hampstead Heath.

Analysis of the structure of house prices as the quantities of attributes increase produces results that are consistent with this perspective. Figure 1 shows this for the price of an otherwise average house. Its price increases very little if the local school goes from being the worst to middling but if you live in the catchment area of a quite good school – where, say, pupils average 75 per cent on their Key Stage 2 tests (so on the scale used in Figure 1, the school has a 'quality score' of 2.25) – obtaining access to the best primary school costs a great deal. Say there were 100 primary schools in the Reading area and using the values estimated in Cheshire and Sheppard (2004), then moving an otherwise average house from the catchment

area of the worst to that of the tenth worst made no discernible difference to its price; moving it from that of the tenth worst to the tenth best increased the price by 10.4 per cent; but moving it from the catchment area of the tenth best primary school to that of the best of all would have been associated with an additional 16.9 per cent in its price.

Apart from access to the Thames, where all the price increase was associated with having frontage to the river itself, other attributes for which the premium paid for the 'best' observed was particularly large were closeness to the town centre and space – both inside houses and garden space. Equally, there were some attributes for which the estimates showed that most – or a substantial proportion – of the price variation was associated with going from having the very 'worst' observed to something just a little better: deprivation (measured as the index of employment deprivation⁵) was such an attribute. Again if there were 100 wards and one could move an otherwise average house from one to another, going from the most deprived to the tenth most deprived increased the price proportionately more than going from the tenth most affluent to the most affluent. Elaborate precautions were taken in the study to standardise for all significant factors affecting local house prices including, of course, the social and economic composition of the neighbourhood.

These results are likely to reflect the pattern of preferences but they are also consistent with the interpretation offered above. Attributes of houses, or amenities to which particular houses give privileged access, which are in fixed or limited supply take on the status of truly 'positional goods' that are auctioned off via the market for houses to the highest bidders. The ability to buy is determined not by absolute income but by income relative to other households competing for the same goods. That school quality and private land and space consumption should exhibit this behaviour is consistent with the argument presented above. Local governments act to constrain the supply of land for housing and – no doubt unintentionally – the availability of the highest-quality public goods.⁶ An additional source of supply limitation may arise from 'peer group effects' and the preference of households to live in areas in which they find their neighbours desirable or compatible. If richer and better-educated neighbours, who spend more on their children's education, are perceived as desirable, then the neighbourhoods in which they are concentrated are by definition limited in supply and hence local neighbourhood quality becomes a positional good. In this way many of the 'non-market' interactions that are an essential component of cities (as persuasively argued by Glaeser, 2001) are actually brought into a form of market allocation via the housing market.

The house and neighbourhood characteristics allocated in the housing market include not only the public goods themselves, but also risk and uncertainty

concerning their levels. As noted above, the measure of the past variation in the quality of a local school was also reflected in the price paid for a given current level of measured quality. Gibbons (2004) showed that neighbourhood crime – an indicator of real risk – was similarly reflected in house prices in London.

The actual price paid for any attribute will depend on the characteristics of the local housing market⁷ and economy since both these influence the supply and demand characteristics of individual attributes. For a given measure of income inequality the best local school will cost substantially less in housing markets where average incomes are low than they will in high-income housing markets because demand is income elastic. In the higher-income housing market people will be spending a higher proportion of their incomes trying to buy educational quality. If incomes become more unequal over time (or in housing markets in which incomes are more unequally distributed) then the price of attributes in fixed supply will rise and we should expect an even stricter sorting of households between nicer and more disadvantaged neighbourhoods. The best state schools become even more strictly reserved for the richest local households (ignoring private education, access to which is explicitly determined by income, not place of residence).

Thus, house prices are about much more fundamental economic and social issues than dinner party conversations or estate agents' talk would credit. The way in which the housing market works explains an important part of the underlying differences in real welfare in society both vertically between households and across space: that is, the patterns of spatial segregation one observes in all cities. Many local public goods, funded from taxation and which we think of as naturally being provided on an equal basis to all households, are really much better thought of as being allocated through the housing market. Consumption of them is thus conditioned on household income in just the same way as consumption of foreign holidays, private education, personal security services or broadband Internet access is conditioned on income. But because the supply of many of them is more or less fixed within a particular urban area or housing market, income relative to others competing for access to the same goods is the real determinant rather than the absolute level of income itself.

Pricing the poor out of better neighbourhoods

This brings us on to a final issue. If the preceding account is correct and income inequality leads to residential segregation, then changes in the distribution of income should lead to changes in the distribution of house prices that reflect this. If the rich become richer relative to the poor and so are more effectively able to outbid the poor

to gain access to valued localised amenities and public goods, the supply of which is inelastic, then expensive houses should become relatively more expensive compared to cheap ones.

Data against which to test this are difficult to obtain. Ideally a series of samples of house prices for a given housing market over time and matching data on incomes for households within that same housing market are required. Such data – at least for UK housing markets – are not easily obtained but work done on the Reading housing market (reported in Cheshire and Sheppard [various] and Cheshire *et al.*, 1999) does provide such data for two different dates at least – 1984 and 1993.⁸ The discussion below relates strictly to these two survey-based data sets except where noted.

There was a significant widening of income differentials in England and Wales as a whole between 1984 and 1994. For example, the New Earnings Survey (NES) shows the ratio of the gross earnings of a person at the 90th percentile point in the distribution, relative to the mean as 1.54 in 1984 compared to 1.61 in 1994. The same source shows earnings becoming significantly more unequal in Berkshire, with the same ratio widening from 1.55 to 1.70. The NES, however, is not really a satisfactory source for investigating the overall distribution of household incomes since very high earners are excluded from the survey and it relates just to the earnings of individuals. The sample data for the Reading area have the great advantage of being precisely related to houses and the prices of those houses but they also have some disadvantages. They relate to the joint gross incomes of households but only to those owner-occupiers in the sample from whom a survey was returned. Given that the survey was of occupiers of sampled houses for sale or recently sold, a significant proportion of which were vacant at the time of survey, the overall response rate of around 47 per cent for each survey round was respectable. Thus, it differs from the NES in that it excludes incomes of renters who have lower incomes on average than owner-occupiers, but for couples both incomes from all sources will be included in the reported household gross income, as will the incomes of the highest earners. Thus, we should expect the survey distribution to be substantially more unequal, however equality is represented, than would be the case of the NES.⁹

Since incomes were reported by quite large bands (over 20 per cent of respondents in both surveys were in the highest income band), representing the degree of equality or inequality by the ratio of the 90th percentile point to the mean is rather crude, but for direct comparison with the NES this ratio moved from 1.61 to 1.97 between 1984 and 1993 – a substantially greater measured increase in income inequality. The Gini coefficient is a more subtle measure of the equality or inequality of a distribution. It is expressed as a ratio and so can range in value from 0 to 1. If

all households had the same income – which one could take as a state of ‘perfect equality’ – the value of the Gini coefficient would be 0; if only one household had had all the income in Reading then that would be the extreme of inequality and the value of the Gini coefficient would have been 1. If incomes for each household are interpolated using a standard procedure¹⁰ then one can estimate a Gini coefficient for the distribution at each date. The value of that was 0.35 in 1984 but 0.53 in 1993: an indication of a very substantial increase in income inequality.

Turning to the distribution of house prices, there is a parallel but smaller increase in distributional inequality measured by the Gini coefficient: this moved from 0.22 to 0.28 between the two survey dates. Examining the (in)equality of the distribution of house prices (by comparing the ratio of the 90th percentile point to the mean) also shows an increase in house price inequality, with the more expensive houses becoming relatively even more expensive between the two periods. The ratio increased from 1.46 to 1.66 between 1984 and 1993.

This is far from conclusive evidence in support of the argument above since it is just two observations. Nothing of statistical significance can, therefore, be read into it. Moreover, conceptually one could argue that changes in the post-tax distribution of incomes would be more relevant than gross incomes. Arguably, some measure of the quality of houses should also be included. Rising prices compared with incomes and the increase in the real price of land for housing reflecting the planning policies of constraining urban expansion, coupled with rising demand for housing space (see Cheshire and Sheppard, 2005), produced significant pressures for subdivision of existing stock and building flats rather than houses in the Reading market. Thus, the change in the distribution of all house prices may be a less than perfect representation of any change in the price distribution of ‘quality constant’ houses over the same period. Nevertheless, what can be concluded is that what evidence is available is consistent with the hypothesis that an increase in income inequality leads to a parallel increase in house price inequality as the relatively richer compete more successfully for access to the limited supply of the ‘best’ houses in the ‘best’ neighbourhoods.

4 Conclusions

This report does not argue that ‘neighbourhood effects’ do not exist. While the evidence is overwhelming that poor people are priced into deprived neighbourhoods because they are poor, living in the most deprived neighbourhoods is almost by definition not a life-enhancing experience. Because of peer group and role model effects, coupled simply with increased threats to health – even life¹ – from accidents and crime, the experience may impair the life chances of those who live in them and especially those of children raised in them. Before engaging in significant efforts and spending substantial resources to use policy to force neighbourhoods to be mixed, however, it seems essential to have a clear idea of how large such neighbourhood effects are and what benefits specialised, homogeneous neighbourhoods may confer on both richer and poorer households.

The evidence presented here suggests that the benefits of specialised neighbourhoods are significant in terms of both finding suitable jobs and increasing the range of choices available to people and the welfare they derive from living in cities. Despite major research efforts and expenditure – for example the US experiment of the Moving to Opportunity programme – evidence of any significant additional negative effects of living in deprived neighbourhoods (compared to the fact of poverty and the features which tend to make someone poor in the first place) is very elusive. So while there may be benefits from mixing communities, there are almost certainly costs too, and to judge the policy, the net gains, including the costs, need consideration. The costs are likely to reflect the processes which underlie the persistence of neighbourhoods segregated along income lines because these would have to be reflected in the scale of resources needed to achieve neighbourhoods that are more mixed as a lasting element in our cities.

The evidence reviewed here, particularly the most recent findings from cohort studies and the US Moving to Opportunity project, does not support the conclusion that neighbourhood effects are quantitatively all that important nor that moving the poor to affluent neighbourhoods improves their welfare overall. However, we do know that the rich can always outbid the poor for nicer neighbourhoods because the desirable attributes of these neighbourhoods are fully reflected in the prices of houses within them. To the extent that this is true, social segregation in cities must largely reflect economic inequality rather than cause it. Forcing neighbourhoods to be mixed in social and economic terms is, therefore, mainly treating the symptoms of inequality, not the causes.

At the same time there seem to be direct welfare benefits from living in specialised neighbourhoods with other complementary and similar households, and probably output benefits, too, because of better labour market networking and matching. To the extent that these are significant, the policy directly destroys a potential source of welfare and a portion of the consumption and productivity benefits cities are capable of delivering. To the extent that Luttmer's (2005) findings generally apply and welfare falls as a person's income falls relative to their neighbours', then that is an additional reason why mixed neighbourhoods may reduce welfare. All these possible losses need to be balanced against any benefits of reduced negative 'neighbourhood effects'.

Among the many things poor people buy less of are the amenities available from living in affluent neighbourhoods. Their poverty constrains them to consume less of everything. Food stamps may be paternalistic but at least we know that poor people benefit from eating better (and having some extra income left over to spend on other things). The problem is that there is scant evidence that the poor get any net benefits from being forced to live in more affluent neighbourhoods. They will have better local amenities than they could otherwise afford but if they have any choice in where they currently live, the evidence of their location shows they value other things more. They lose the support of other families like themselves and local services tailored to the needs of poorer people rather than the rich. Having a sympathetic small shop within walking distance which, though it may have high prices, stocks what you want and may give a bit of credit when you are most hard pressed is a lot more useful to a struggling single parent than being a short drive from a supermarket catering for affluent professionals.

That the disadvantaged are concentrated in poor neighbourhoods does not demonstrate that poor neighbourhoods are a cause of disadvantage. If that is the case, the conclusion for policy is to reduce income inequality in society, not build 'mixed neighbourhoods' or improve the built environment in such neighbourhoods. Mixed neighbourhood policies may divert attention from the need for effective income redistribution. Policies should help people and people who are effectively helped have an increased probability of moving away from the poor neighbourhoods in which they currently live. This, in turn, is likely to make the indicators for those poor neighbourhoods worse rather than better: but that does not mean that the policy was not a success.

The obverse of this is that if policies do not effectively address the underlying causes of poverty, improving the physical environment and amenities of deprived neighbourhoods may simply displace poorer people to even less attractive neighbourhoods, so the poorest have to bear disruption costs as well as poverty

while continuing to live in a low-quality built environment. These arguments do not, of course, imply that it is never useful to deliver policies aimed at reducing societal inequality in poor neighbourhoods (e.g. improving labour force skills). It is in the poorest neighbourhoods that those who most need the help of people-targeted policies tend to be concentrated.

Notes

Chapter 2

- 1 Housing and Community Development Act 1992.
- 2 Kling *et al.* (2005) report briefly on such factors as getting into fights, getting along with teachers, perceptions that school discipline was 'fair', having five or more friends and reported feelings of worthlessness, finding no significant differences on any measure. A wide range of educational, mental and physical health and behavioural indicators were examined in Kling and Liebman (2004). In general they reported some significant beneficial changes for girls but negative and mainly not significant effects for young males.
- 3 By this they meant that the boys were doing not only absolutely worse in education and other realms than their new, affluent peer group but relatively worse in such terms than they would have done in their old, deprived neighbourhoods compared to the peers they would have had there; they do not say – but perhaps they also imply – that they also had relatively more opportunities for property crime in their new, affluent neighbourhoods.
- 4 He compared results of 25 studies published between 1982 and 2003. Outcome measures ranged from marriage rates and teenage pregnancies through school drop-out rates to standard labour market measures, such as wages or unemployment. All studies surveyed were econometric in nature and while some found no evidence of neighbourhood effects, the majority did conclude there was an impact of neighbourhood on outcomes for individuals. However, as Durlauf notes, methodological problems are severe and such evidence was unlikely to convince those who were sceptical. He wrote before the methodologically most convincing studies, those of Oreopoulos (2003) and Kling *et al.* (2005), were available.
- 5 Apart from the increase in boys' arrests for property crime in the longer term, the cause of some of the improvements in health measures are unclear. For example, Katz *et al.* (2001) note that the significant improvement in childhood asthma reported for both families moving to more affluent neighbourhoods and those moving to locations of their own choice could be due to characteristics of the structures and particularly the absence of rats – a common asthma trigger – in the new homes and locations, not to classic neighbourhood effects. If reduction in

exposure to rats were the cause, then getting rid of rats would seem to be a very much more cost-effective policy to achieve the health improvement than mixed communities.

6 1987–88 and 1992–94.

Chapter 3

- 1 We can adapt DiPasquale and Wheaton's (1996, p. 24) definition of a geographical real estate market: a geographic/spatial housing market is the area which 'encompasses all housing units that are influenced by the same economic conditions'.
- 2 This section draws on Cheshire *et al.*, 1998.
- 3 In the models discussed here all prices are estimated to vary not just as the quantity of the attribute in question changes (for example, the first bathroom is worth a lot more than the fifth) but as the quantity of other attributes varies (for example, the price paid for more space inside a house of given size also varies with the size of the garden, or the value paid for primary school quality varies with the suitability of the house to accommodate children). As a result, this calculation of the impact on price of moving a house from the worst to best primary school catchment area can only be done by assuming some particular levels for all other attributes. Here it is assumed that all other attribute levels are equal to the sample mean, the sample being the random sample of houses sold in the local housing market in 1999/2000 which was used to estimate the model.
- 4 And, of course, if the poorer household themselves own property in the poor neighbourhoods, they will also lose from lower relative asset values – see below.
- 5 The DETR index of neighbourhood employment rather than multiple deprivation was used in order to avoid any possible definitional correlation. A minor element in the Index of Multiple Deprivation is the performance of the local primary school on Key Stage 2.
- 6 That is not because they usually want there to be worse schools or public parks but because there can only be one 'best' school or park. This is not the case with land supply which is intentionally restricted in order to implement urban containment policies.

- 7 Including, of course, local policy. If access to schools is not determined by place of residence but by some other mechanism, for example by lot or by selective examination, then there would be no price paid via the housing market. Consistent with this and demand for school quality being income elastic is the estimated hedonic price of school quality in the Reading compared to the Darlington housing markets in 1993 and 1997 respectively. Again looking at the 'average' house, the price per GCSE point improvement in Reading, where mean sampled incomes were £28,610 per annum, was £243.9 while in 1997, in Darlington, where mean incomes were £23,422, it was £30.8. However, since not only were incomes lower in Darlington but allocation to schools was less tightly tied to home address, we cannot be sure what the contribution of each factor separately was to the difference in the price of 'school quality' for the mean home.
- 8 The data set for 1999/2000 did not contain household income.
- 9 The NES excludes all the highest earners but they are included in the survey. Renters have lower incomes on average than owner-occupiers but the variance of incomes in the lower tail of the overall distribution is less than in the upper tail. While the survey undersamples low-income households because it omits renters, it still includes some low-income households, such as owner-occupied pensioner households.
- 10 Each income band in the survey is represented by a point interpolated applying a Pareto distribution to the overall data and each household in each income band is assigned the income at that point.

Chapter 4

- 1 Studies estimating neighbourhood effects by tracking cohorts of individuals over time, such as Oreopoulos (2003) or Bolster *et al.* (2007), since they only track survivors, may underestimate neighbourhood effects if being raised in the most deprived neighbourhoods increases death rates for young people.

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