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# Young participation in higher education


HIGHER EDUCATION FUNDING COUNCIL FOR ENGLAND

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*Front cover: Wards in Bristol map out a sharp division in young people's chance of entering higher education (see Section 2.14). High and low participation areas differ in many ways, including housing type (see Section 4.2).*

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# Young participation in higher education

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| **To** | Heads of HEFCE-funded higher education institutions<br>Heads of HEFCE-funded further education colleges |
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## Reading the report

This report is structured so that it can be read on a number of levels:

- the **Foreword** describes the overall purpose of the study, in the context of HEFCE's policies for widening participation in higher education
- the **Summary and key findings** section gives a condensed version of the core results
- taken together, the **Introduction** (Section 1) and **Conclusions** (Section 5) are designed to give the general reader an understanding of the conduct and main conclusions of the study
- the main **Results** of the work are set out in Sections 2-4. These look at national patterns (Section 2), trends in participation for advantaged and disadvantaged areas (Section 3), and the characteristics of such areas and of the young people living there who go into HE (Section 4)
- finally the **Annexes** provide supporting technical information on the methodology adopted and factors that might affect the results.

## Action required

This report is for information only.

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## Foreword

Debates about who participates in higher education now take place on the radio and television, and in the press, as well as in academic journals. The statistics that underpin these debates – what the participation rate is, and how it is changing – are almost always taken as a given, not only by politicians and commentators but also by academics and other experts in the field. Very few people know exactly how measures of participation are derived, and even fewer appreciate the problems with the data that lie behind them. The reality is that, hitherto, none of the published participation rates have been sufficiently accurate to measure year on year changes overall, still less how the differences in participation between young people from different backgrounds are changing.

For the first time we now have measures sufficiently accurate to monitor inequalities in participation over short periods of time. These measures are derived by taking counts of young entrants straight from school or after a 'gap' year, and classifying the most and least advantaged families according to where they live, rather than by their occupation, income or patterns of consumption. As detailed data do not exist for characteristics such as occupation or income, these area-based classifications are the only basis for accurate measures of the participation of advantaged and disadvantaged groups currently available. Some will view them as proxies for other classifications, but they also have value in their own right, particularly for developing policy.

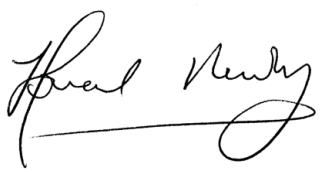
In October 2004 the Council published its strategy for research to inform policies and practices to widen participation. This recognised that measures of participation underpin the whole widening participation agenda, and discussions of barriers to participation would be unsafe without them. The strategy specifically identified that better measures of participation are required, and the publication of this report helps to meet this need.

In this report, patterns of young participation are set out in detail together with measures of the experiences of young people before, during and after their time in higher education. Some of the results are as might have been expected. It does seem, for example, that people living in areas with low participation also experience many other forms of disadvantage. However, a fuller explanation and interpretation of the processes leading to these patterns of participation will entail further discussion and exploration. We have commissioned further work which aims to gain an understanding of the barriers to participation, and the way they interconnect.

Those developing policy do not, of course, have the luxury of waiting for these projects to come to fruition before making decisions. It is interesting to look back to 1997, when HEFCE published its first report on the widely different participation rates of young people from different neighbourhoods. At that time there was no recognition of the extra costs of teaching students who came into higher education less well prepared, nor was there any component for widening participation activities in the allocation of funds to institutions. There was no funded programme for higher education to play its part in raising aspirations and

improving achievement of pupils from disadvantaged backgrounds. All of these are now established and their full impact should be seen in future years.

The 1997 report helped shape the policies which led to widening participation being placed at the heart of the Council's current operations. We expect that the much more comprehensive analysis presented here – together with the maps of local participation patterns which we are making available – will help to develop these policies further in the continuing programme to increase opportunities for students from all types of backgrounds to benefit from higher education.



Sir Howard Newby
Chief Executive
Higher Education Funding Council for England

# Contents

# Summary and key findings

## Why measure participation?

Higher education is generally regarded as bringing benefits to those who take part in it. It also receives substantial amounts of public money. This combination of personal benefit and public investment creates a particular interest in participation rates, that is, the proportion of a group of people who take part in higher education. More specifically, there is interest in differences between the participation rates for different groups, especially groups that can be described as advantaged or disadvantaged.

In this report advantaged and disadvantaged groups are defined by where young people live. Grouping young people in this way allows the calculation of the annual counts of young people and entrants that are required for accurate monitoring of participation. No other groupings, such as income bands or those based on occupation, can offer this. Set against these advantages are concerns that areas are too mixed in the nature of their residents to be a useful grouping. The findings in this report indicate that the relevance of these concerns depends on the choice of area used for the analysis. Using areas of the size of wards appears to work well in reliably capturing participation neighbourhoods, as it is rare for wards to be internally mixed in terms of young participation.

Our earlier work[1] showed that there are very large differences in the participation rates for young people from different types of area. This report uses new data sources and more sophisticated methods to look closely at the participation in higher education of young people from both advantaged and disadvantaged areas. The result is a measure that can detect small changes in participation rates for different groups to give a fuller and more accurate picture of young participation in the period 1994-2000.

## National participation rates steady but sex inequality grows

The participation rate in higher education for young people in England is around 30 per cent at the end of the period studied. The overwhelming majority of English young entrants study in higher education institutions (HEIs – universities and higher education colleges). In Scotland this is not the case: around a third of young entrants study HE courses in further education institutions (FEIs), which helps to make Scotland's participation rate some 9 percentage points higher than England's.

These rates are lower than those recorded by other measures such as the Higher Education Initial Participation Rate (HEIPR), which is used to measure progress towards the target of 50 per cent participation in higher education. The principal reason for this is that the HEIPR measure counts HE entrants aged 30 or under whereas the measures in this report focus only on young people – aged 18 or 19. There are a number of reasons for focusing on this age group with the most important being the feasibility of estimating small area populations and interpretation of the resulting area participation rates.

Between the late 1980s and early 1990s young participation approximately doubled. In contrast, young participation increases by just 2 percentage points over the 1994-2000 period. The pattern of participation change across this period can

be explained by changes in the size of the young population, and the rate of improvement in achievement at GCSE.

Around the middle of this period student grants were replaced by loans, and tuition fees were introduced. No evidence is found that this had any material effects on participation. For example, there is no evidence that young people changed their decisions on whether to enter HE, when to enter HE or where to study to avoid the introduction of tuition fees.

Inequality of the sexes in young participation has risen steadily: by the end of the report period, young women in England are 18 per cent more likely to enter higher education than young men. This inequality is more marked for young men living in the most disadvantaged areas, and is further compounded by the fact that young men are less likely than young women to successfully complete their HE courses and gain a qualification.

There are differences in the chance of entering higher education by month of birth, with patterns that reflect relative age within a school year. In England, those born in the autumn (and therefore the oldest in their school year group) are up to 20 per cent more likely to enter higher education at age 18 than those born in the late summer. These differences appear to be a reflection of earlier patterns in progression from GCSE to A-levels, so that there are no differences in, for example, progression rates for young people once they have entered higher education.

## Deep divisions in the participation chances of young people by where they live

There are substantial regional differences in young participation, with young people in some regions being 50 per cent more likely to enter higher education than their peers in other regions. There are also regional differences in participation trends. The growth of young participation in London has been particularly high, so that it has overtaken the South East to become the highest participating English region. In contrast, low participation regions such as the North East have seen little growth in young participation over the period, with the result that they have fallen further behind and inequalities between regions have increased.

The pattern of participation in smaller areas, such as parliamentary constituencies, reveals a more complex geography and further inequalities. Areas of high participation can be found in low participation regions, and some of the constituencies with the lowest participation rates are in the south of England. In some constituencies less than 1 in 10 young people enter higher education, whereas in others more than half do so. Some disadvantaged constituencies in Scotland have young participation rates that are nearly twice as high as the very low rates found in similarly disadvantaged constituencies in England. This appears to be due in part to the greater importance in Scotland of the participation route of studying HND or HNC qualifications in FEIs.

The full extent of participation inequalities is revealed by using neighbourhood level geographies such as census wards. These show that there are broad and deep divisions in the chances of going into HE according to where you live. Young

people living in the most advantaged 20 per cent of areas are five to six times more likely to enter higher education than those living in the least advantaged 20 per cent of areas. Maps of local participation patterns – such as those presented through POLAR (www.hefce.ac.uk/polar) – reveal that many cities and towns are educationally divided, containing both neighbourhoods where almost no one goes to university and neighbourhoods where two out of three or more will enter HE.

## Participation inequality between neighbourhoods persistent

We investigated the extent and change from 1994 to 2000 in local participation inequalities using a range of different geographies and ways to classify disadvantage. These analyses consistently showed that there is a deep division in the chances of young people going to university according to where they live, and that this inequality in young participation has not changed substantially over the period covered by this work.

The methods used are powerful enough to detect small changes and these give a mixed picture. The more disadvantaged areas show the higher *proportional* growth in participation over this period, particularly for young women and those living in London, with a corresponding small fall in *relative* participation inequality. The participation of the more advantaged areas was checked in the middle of the period. Despite this, these advantaged areas generally showed the largest *absolute* percentage point increases in participation over the period, so that the gap in participation between advantaged and disadvantaged areas widened slightly.

This means that although the extra entrants resulting from the higher participation over the period are slightly more evenly distributed than before, most of the new places in HE have gone to those from already advantaged areas. A number of possible associations with these participation patterns trends are investigated, including the relative improvement of GCSE results at the lowest performing schools and the effect of the growth in the number of young people on demand at particular institutions.

## Young people in low participation areas face many disadvantages

Having established a classification of high and low participation areas, the report looks at the different nature of these areas. High and low participation areas are found all over the country, often in close proximity. However, they are very different places both in environment and the characteristics of their residents. In particular, areas with low young participation rates are also disadvantaged on many other social and economic measures. There are particularly strong associations with measures of educational disadvantage: for example, neighbourhoods with the lowest participation rates also have the lowest proportion of graduate adults.

Looking at entrants by area background is more problematic but the pattern of differences continues. Entrants from high participation areas are much more likely

to have studied at an independent school or to be paying all of the tuition fee themselves. Entrants from low participation areas are markedly more likely to have, for example, weaker entry qualifications or to be studying for an HND. However, entrants from the most advantaged half of areas so dominate the student population that the majority of entrants with almost any characteristic – even those usually associated with disadvantaged areas such as weaker entry qualifications – are those from advantaged areas.

## Non-completion increases participation inequalities but postgraduate study does not

Tracking young entrants to first degree courses through their time in higher education shows that 87 per cent qualify within six years, with the remainder mostly leaving without a qualification. This leads to an estimate of an *effective* young participation rate (that is, participation in HE which leads to a qualification) of around 25 per cent. The qualification rates are lower for entrants from low participation areas especially for men; this serves to increase the effective participation inequality for these groupings.

Following the progress of young entrants to first degree courses beyond graduation allows an estimate of the level of young postgraduate participation. Around one in five of degree qualifiers either have experienced, or immediately progress to, postgraduate level study, suggesting a young postgraduate participation rate for England of around 4 per cent.

The pattern of postgraduate study for qualifiers does not vary much by area background. Qualifiers from disadvantaged areas are notably more likely to take part in teaching-related postgraduate study, leading to a slightly higher overall proportion of qualifiers from these areas progressing to postgraduate study. However, the absence of large differences means that the level of young postgraduate participation inequality across areas is similar to that measured for undergraduate participation. This suggests that where you lived as a child, so important in determining earlier educational outcomes, has little additional effects on the transition to postgraduate study.

# 1 Introduction

## 1.1 What is participation in higher education?

Participation means taking part. A higher education (HE) participation rate is the proportion of a group of people who take part in HE. The number of people participating in HE at any one time will depend on factors such as course length, mode of study (full-time or part-time) and non-completion, as well as the numbers of those entering HE. In educational statistics, particularly those concerned with participation inequalities, it is usual to remove these complications and focus on the proportion of a group of people who have experienced or entered higher education within a particular interval. There are several ways of defining entrant-based participation rates. The measure used in this report is the proportion of a cohort of young people that enter higher education, referred to as 'young participation'.

## 1.2 Why measure participation?

Higher education is generally regarded as being advantageous for those who participate in it. For example, graduate have higher salaries than non-graduates. The activity of providing HE receives substantial public subsidy: for the academic year of 2003-04 the Higher Education Funding Council for England allocated £3.8 billion to higher education institutions (HEIs) and further education institutions (FEIs) in England for teaching higher education[2]. This combination of personal advantage and public subsidy leads to a particular interest in differences in the participation rate between groups, especially groups that can be broadly described as advantaged or disadvantaged.

Changes in HE participation rates through time are also of interest. This is particularly true for the period covered by this report (1994-2000), which has seen changing financial costs for entering HE, and government initiatives to increase the level and equality of young participation. The major changes to the cost of entering HE over this period are described in Annex G. There is interest in whether any of these changes may have affected young participation both overall and for different groups. This report uses measurements of participation rates for area groups through time to quantify any participation trends coincident with these changes.

## 1.3 Measuring participation

Participation rates have at their heart a count of entrants that is divided by a matched estimate of population. There are many ways of combining these two components. Methods that involve the aggregation of entrant counts and population estimates from different age groups (such as the DfES Age Participation Index, API), or the summing of age-specific rates from different cohorts (DfES HE Initial Participation Rate, HEIPR) are vulnerable to generating apparent trends in participation that are artefacts of the participation statistic. Additionally we have found that the detailed temporal pattern of entry to higher education, especially for the young, is governed by the scholastic calendar. Therefore, using inappropriate or mismatching age reference dates for the entrants and population can distort trends.

To avoid both these problems, the participation rates used in this report are calculated from the experiences of real cohorts defined relative to the school year.

Using the school year means that the ages of both the entrants to HE and the cohort are relative to the reference points that determine which school year a child is in. This reflects the detailed age pattern of entrants, and allows greater resolution in detecting any effects on participation that typically relate to school year cohorts, such as examination improvements or changes to the financial support for HE students.

The 'real cohort' means taking a group of young people of the same school year age (a school cohort), counting how many enter at age 18, waiting a year, and then counting how many enter at age 19. By this method the participation rate reflects the experience of a real school year cohort who have participated through time (in contrast to a synthetic cohort created from a single year of entrants from different school year cohorts). It avoids introducing artefacts into the time series caused by annual changes in the size of the school year cohort, or by changes in the balance of entrants at age 18 and 19. One drawback of this method is that it requires more than a single year of HE student records, so that there is a delay in calculating the participation rate. Annex E contains more details on the participation measure.

## 1.4 Counting entrants

The nature of a participation rate is primarily determined by how the entrants are defined. The dominant consideration is the range of entry ages that are included.

### Why young entrants?

This report measures participation rates for young people who enter higher education aged 18 or 19. There are several reasons for this choice of age range.

Many of the practical problems in calculating participation rates – for example, determining those who are truly 'new' to HE and obtaining the matched cohort estimates for small areas – can be addressed for young entrants. For older age groups these problems are much more difficult to tackle.

In terms of characteristics such as entry qualifications or non-completion, those who are 18 or 19 when they enter HE form a distinctly different group from other entrants. These young entrants are an important component of HE in the UK. For example, of all those who gained a first degree from a UK HEI in 2000-01, around three-quarters started their courses as young entrants.

The young participation rates calculated for small areas have a straightforward interpretation and are valid in that they describe the chances of going into higher education for children growing up in that small area.

The arguments for choosing this set of entrants are developed further in Annex D. The focus on young entrants in this report does not mean that mature students are not important, but rather reflects that young participation can be meaningfully measured and will have the dominant effect on any inequalities in HE participation for different groups.

### Obtaining an accurate count

One persistent problem in counting entrants for participation rates is to avoid double counting of individuals. Student entry and progression pathways are complex, which increases the difficulty of defining and capturing consistent student data across a large number of institutions. This can mean that simple fields on student records, intended to identify students starting their course, can give misleading results. Typically this could result in a student being counted more than once if they transfer between institutions or return to HE after leaving an earlier course. Such errors generally inflate participation rates, and any differences in the number of these cases through time or between groups can distort trend analysis.

To avoid these types of errors, this report uses linked individual longitudinal records to determine entrants. The individual records are drawn from all the main HE student data sets and matched together using reference keys and personal details to give longitudinal study histories for individuals, from which the count of entrants is obtained. The advantage of this method is that, for example, an individual who does the first year of an HND in an FEI and then moves to a degree course in an HEI is correctly tracked and only counted once as an HE entrant. This gives an accurate picture of the true level of participation, and ensures that analysis by different groups will not be biased by counting particular types of entrants more than once.

The HE student records are also linked to applicant records held by the Universities and Colleges Admissions Service (UCAS). This, together with the linking between record types, enhances the data coverage of key student details such as postcode. The definitions used for counting entrants are described in Annex C.

## 1.5 Estimating the population

Studies of HE participation often focus on the counts and characteristics of entrants at the expense of the companion population estimates. This is misguided: obtaining the matched cohort estimate for the entrants is generally the most challenging aspect of measuring participation. The root of this difficulty is that while the individualised HE entrant data is readily available in national data sets, there is no comparable data source for the cohort. This becomes a problem because apparently minor differences in definition between the entrants and the cohort estimate (for example, the age reference date or the treatment of resident students) can easily lead to seriously erroneous conclusions from the resulting participation figures. These problems are amplified when trying to detect changes in participation rates through time. The likely annual changes in participation rates over the period of this report will be small, so the resulting changes in the number of entrants will also be small – and comparable in magnitude to those that might result from annual changes in the size of the cohort.

To address these problems we have developed our own method for estimating small area cohorts, which is described in detail in Annex A. The method uses an evidence-led combination of the 1991 Census and contemporary annual child benefit records to give single school year cohort estimates for small areas, for the

cohorts reaching 18 between 1994 and 2000. Special measures are taken to minimise any temporal bias in the estimates; and a small number of areas which are judged to have changed in nature are removed from particular kinds of trend analysis.

## 1.6 Grouping by areas

Individuals can only enter or not enter HE, they can therefore only have participation rates of 100 per cent or 0 per cent respectively. Participation rates are only useful when calculated for groups. If the group is homogeneous, they can then be interpreted as the probability that each member will enter HE. For these reasons it is more useful to talk about people being members of an under-represented group rather than under-represented individuals. This report assesses inequality in young participation rates by grouping individuals according to the geographical area in which they live. The reasons for choosing to group by areas are set out below.

### Ability to calculate participation rates

The already difficult task of counting entrants and the cohort is further complicated when assessing trends in inequalities of HE participation, as this requires matched entrant and cohort estimates for each group. The most important reason for using small areas is that it is the only grouping system for which the cohort for each group can be estimated in a sufficiently reliable way to detect the likely magnitude of any year on year changes in participation inequality[3]. This is because the postcode – a precise geographical locator – is on both individualised administrative records in education and certain key data sets for benefit payments. Area referencing through the postcode is precise and unambiguous, with a postcode typically identifying around 10-20 households. The efforts put into developing the UK postcode look-ups[4] offers a wide choice of geographies for analysis, and enables area linking to demographic and social data from the Census. Building on this data infrastructure it is possible to construct matching entrant and cohort counts for small areas that are sufficiently accurate and consistent to reveal small changes in participation rates through time. There are no data sources to permit the calculation of similar matched annual counts for, say, income bands or occupation groups.

### Interpretation and practical use of area groups

Where you live is important. This is reflected in academic research on the effect of location on life chances, the use of area statistics in targeting poverty, and in the everyday experience of the differences between neighbourhoods. Where you live determines the environment you experience and the people you are in daily contact with, and can determine your access to a range of resources, including schools. Small areas in the UK are strongly differentiated by housing type, tenure and, for private housing, house price; they show marked differences across a range of social, economic and educational statistics. It is reasonable to suppose that the young HE participation rate will differ between areas in a significant way, and that these differences will reflect the combination of different kinds of advantage and disadvantage experienced by children growing up in these areas. By analysing

participation rates by small areas we can determine the degree of inequality between children living in the most advantaged and disadvantaged parts of the country, and monitor any changes though time.

Forming groups by areas and mapping the resulting geography of young participation can also be useful to those working to address educational inequality. Drawing on early results from this research, HEFCE provided an internet service (POLAR, described in Annex H) to provide people working on widening participation in HE with maps of high and low participation areas. Feedback from this project has suggested that knowing the geography of participation was helpful both in allocating resources at a strategic level and in prioritising and planning activities directly targeting the small areas that have low young participation rates.

### Suitability of small areas for measuring participation

Some of the advantages of using areas would be much diminished if the geographical units used typically contained distinct sub-communities with very different participation rates. Concerns about this problem are often expressed in terms of area measures being too 'crude' to properly capture the detailed local pattern of participation and therefore missing 'pockets of deprivation'[5]. This problem also applies to other groupings such as social class or household income bands, where there is an implied assumption of uniform participation rates within the group. One of the advantages of using areas to form groups is that with sufficiently detailed entrant and cohort estimates it is possible to investigate the magnitude of any differences in participation rates within the geographical unit used.

This report shows that it is certainly the case that large geographical units, such as regions or local education authorities, usually contain both high and low participation sub-areas. Thus, in these cases, the average participation rate for the unit does not well describe the chances of participation for all the people within it. However, when using a geographical unit nearer in size to that of 'real' participation neighbourhoods (which, for young participation, it transpires that wards work well), we find that seriously mixed areas are very rare and that, in general, almost all the children living in low participation micro-areas are correctly captured by the kind of area groupings used in this report. Annex F looks at these issues in more detail.

## 1.7 How the results are reported

The main results are reported in three sections.

The first describes the trends in young participation rates by country and region and the distribution of young participation rates over smaller geographies. National patterns of participation by entry age, sex, institutional sector and season are also examined.

The second section looks at the level and trends of inequalities in young participation by aggregating small areas into equal quintiles of the whole cohort. A range of participation measures, geographies and ways to form the quintiles are used to give a broad set of results.

The third section looks at how high and low participation areas, and the entrants from them, differ. The nature of high and low participation areas is investigated by looking at area statistics from the Census and other sources. The differing characteristics and HE experiences of entrants from high and low participation areas are examined. This allows us to estimate 'effective participation' rates (that is the proportion that enter HE and get a qualification), and elements of participation in postgraduate study.

A summary section draws on this set of results to give a commentary on young participation over the study period. A series of annexes follows providing more technical material covering the method used and factors that might affect the results.

# 2 Results: national patterns

## 2.1 Participation terms and measures

References to years in the participation results usually refer to cohorts rather than the year of entry. So the '1997 cohort' is that group who were aged 18 in 1997 and are counted as entrants in either the 1997-98 or 1998-99 academic years. The ages are determined by a reference date chosen to give cohorts aligned to the school year, and so differs by country. In England and Wales it is the age on 31 August, in Scotland the age on 28 February following the start of the academic year, and in Northern Ireland the age on 1 July preceding the academic year.

Two main measures of participation are used in these results:

- YPR(H) denotes Young Participation Rate (HEIs) and only includes entrants to HE courses that are returned on the Higher Education Statistics Agency (HESA) student record
- YPR(A) is the Young Participation Rate (All) and includes HE entrants from the HESA record and other data sets such as the Learning and Skills Council Individualised Student Record (ISR) and the Scottish Further Education Statistics survey (FES).

YPR(H) results are available for cohorts since 1994 and for all UK countries. YPR(A) results are calculated for the 1997 and later cohorts and are only fully available for English and Scottish entrants. The YPR(A) is the broader measure and is particularly important for assessing the level of young participation in Scotland. The YPR(H) offers wider time and country coverage and picks up most of the important trends in young participation, and so is generally used in the time series.

Full details of the age reference dates, details of these and other participation measures, and the effect of the restrictions used are given in Annex C.

## 2.2 Young Participation Rate (HEIs) by country

Entrants for the YPR(H) measure are taken from the HESA record alone and therefore only include those studying at HEIs (and franchised courses at FEIs where the student records are returned to HESA by the parent HEI). Although not as comprehensive as the YPR(A), especially for Scotland, the YPR(H) has the advantage that the period for analysis is longer (beginning with the 1994 cohort) and the coverage is uniform across the UK, permitting UK-wide estimates of participation. Figure 1 shows the cohort size, entrant count and YPR(H) for the UK for the 1994 to 2000 cohorts (these data are also given in Table 22 in Annex L). Figure 2 recasts this time series as the cohort to cohort change in the cohort and entrant numbers and the YPR(H).

Figure 1 **Cohort size, entrants and YPR(H) for the 1994 to 2000 UK cohorts**

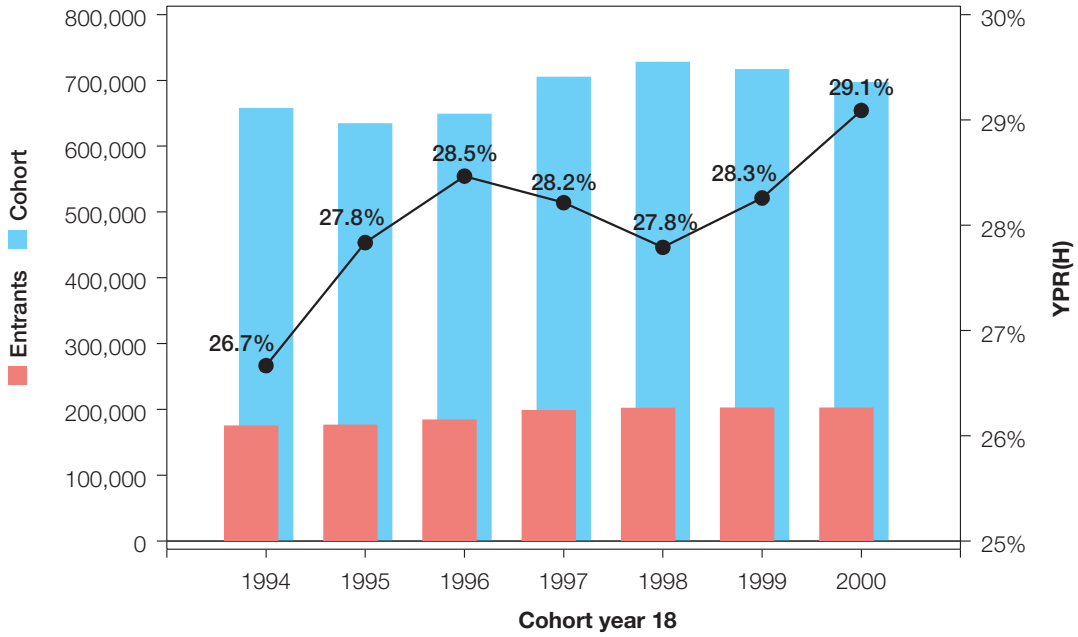
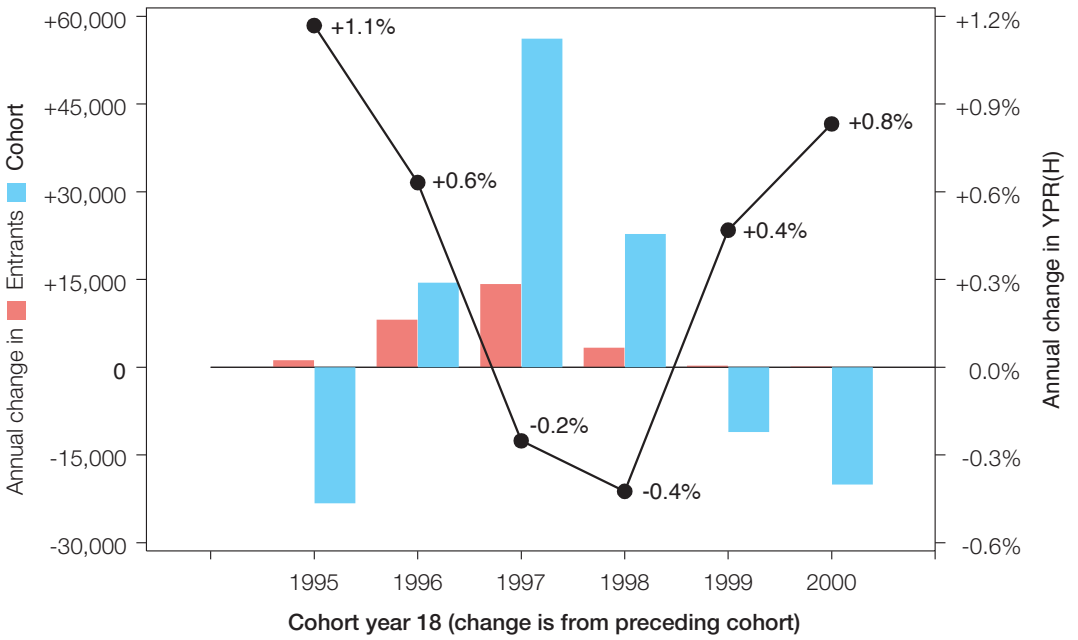



Figure 2 **Cohort to cohort absolute change in cohort size, entrants and YPR(H) for the 1994 to 2000 UK cohorts**



The average UK YPR(H) across the 1994 to 2000 cohorts is around 28 per cent. The YPR(H) has risen over this period but only by just over 2 percentage points, from 26.7 to 29.1 per cent. The majority of this increase was concentrated into two cohorts: the 1995 and 2000 cohorts enjoyed a rise in participation of about 1 percentage point compared to the previous cohort. As Figure 2 highlights, for both cases the increase in participation was not accompanied by a substantial increase in the number of entrants but rather by a fall in the size of the young cohort.

Perhaps the most marked feature of the time series is the exceptional increase in the size of the 1997 cohort. Reflecting a jump in births in 1978-79 (see Figure 63 in Annex A), the size of the 1997 cohort increased by nearly 60,000 (9 per cent) compared to the 1996 cohort. This cohort also saw the largest jump – of 14,000 (8 per cent) – in the number of HE entrants, showing that the HE system was able to accommodate this demographic surge almost exactly at that time, with only a small quarter point drop in the YPR(H).

The large increase in entrants in the academic year 1997-98 (mostly from the increased number of 18 year-olds from the 1997 cohort) is sometimes interpreted as young people entering at 18 rather than 19 to escape the introduction of tuition fees in 1998-99. However, in fact the rise in entrants for that year is accounted for by the demographic changes aligned to the school year.

Figure 3 **YPR(H) rates by country for 1994 to 2000 cohorts**

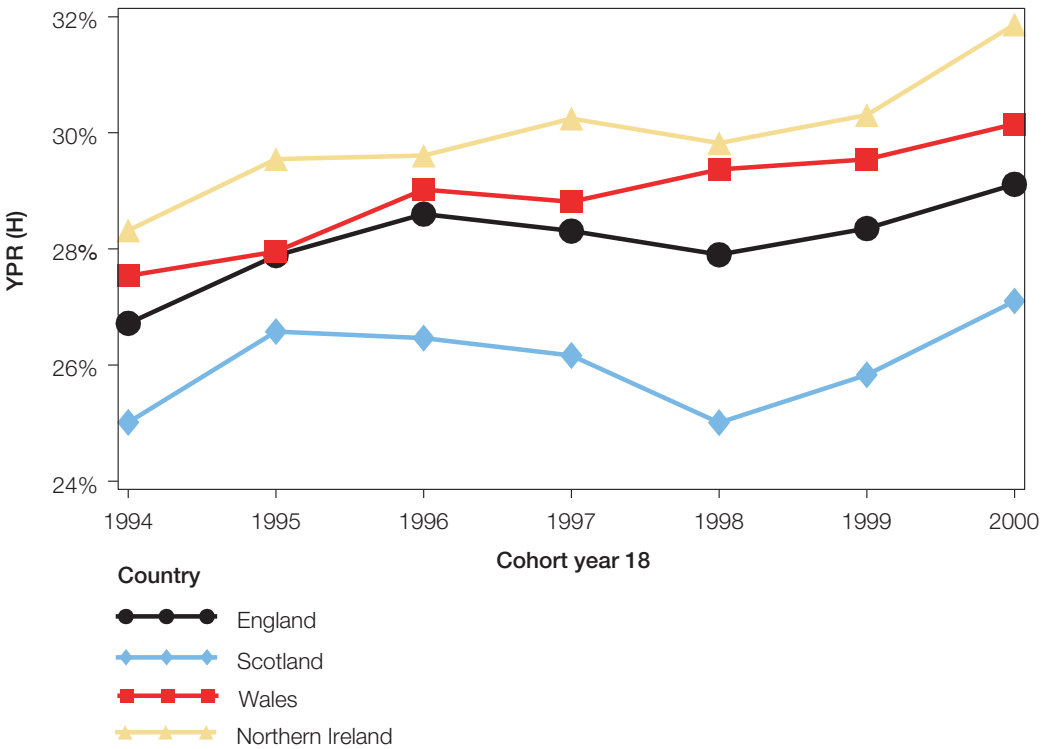


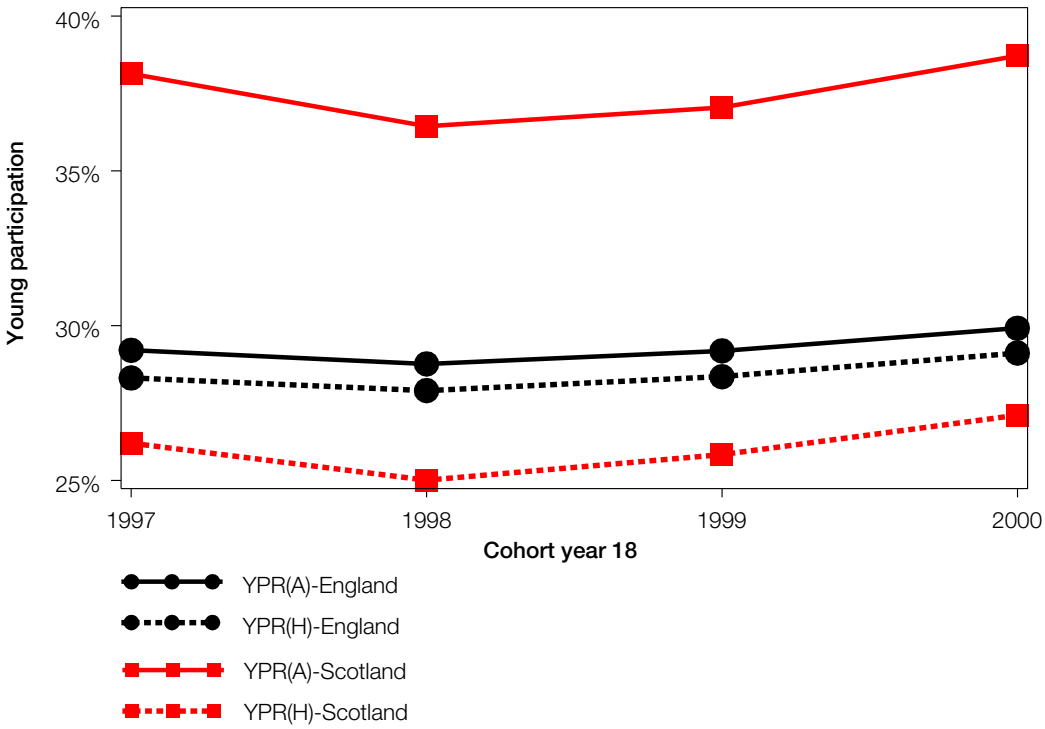

Figure 3 shows the YPR(H) rates by country for the 1994 to 2000 cohorts (these rates, together with cohort and entrant figures, are also given in Table 22 in Annex L). The country rates generally reflect the UK trend, with a small rise in the YPR(H) over

the period, concentrated in the 1995 and 2000 cohorts. Most countries show slower participation growth or declines in participation for the 1997 and 1998 cohorts. The YPR(H) rate for Scotland is lower than the other countries: this reflects a limitation of the YPR(H) measure in not including HE courses outside HEIs (this is redressed in the following section). The YPR(H) for Northern Ireland is substantially lower than the total level of young participation, as HE participation through Northern Ireland FEIs or through institutions in the Republic of Ireland is not included.

## 2.3 Young Participation Rate (All) by country

The Young Participation Rate (All) – YPR(A) – is broader than the YPR(H) in that it includes HE entrants to institutions, typically FEIs, that are not included in the HESA records. Set against this broader scope are the limitations of it only being fully available for England and Scotland and only covering cohorts from 1997 onwards. The YPR(A) is by definition higher than the YPR(H) – around 1.5 to 2.0 per cent nationally – but the difference varies by country. Figure 4 shows how the YPR(A) for England and Scotland compares to the YPR(H) over the four cohorts 1997 to 2000.

Figure 4 **YPR(A) and YPR(H) for the 1997 to 2000 cohorts (England and Scotland)**




For England the YPR(A) and YPR(H) measures give values that are very close, and there is little change over the period: the YPR(A) ranges from a low of 28.8 per cent for the 1998 cohort to 29.9 per cent for the 2000 cohort.

In Scotland the differences between the values of the YPR(A) and YPR(H) measures are very much greater. The YPR(H) for Scotland is in the range 25-27 per cent, somewhat lower than the YPR(H) for England. The Scottish YPR(A) is some 12 percentage points higher than the YPR(H), at around 36-39 per cent. The trend (a low point for the 1998 cohort, rising thereafter) is the same for both measures. This indicates that, compared to England, participation through FEIs is an important route in Scotland, leading to a total level of young participation that is some 8-9 percentage points higher (around 30 per cent higher proportionately).

The partial data series for Wales (see Table 23) shows that, like England, participation in HE courses in FEIs is of minor importance. It contributes only around half a percentage point of participation, suggesting that the Welsh YPR(A) for the 2000 cohort would be around 30-31 per cent. Although the YPR(A) is not calculated for Northern Ireland, aggregate figures suggest that a comparable measure would be similar to that shown by Scotland at around 37 per cent[6].

## 2.4 Young participation through HE courses in FEIs

Taking HE entrants only on courses at FEIs that are returned to the Scottish FES and English ISR/ILR gives the Young Participation Rate (FEIs) – YPR(F)[7]. This statistic excludes HE courses at FEIs where the course is franchised by an HEI and the students' details are returned on the HESA record by the HEI partner in the franchising agreement. For England these records can be identified and combined with the other FEI records to give the Young Participation Rate (Combined) – YPR(C) – which measures all young HE activity taught in FEIs. These measures are shown for the 1997 to 2000 cohorts in Figure 5.

Figure 5 **YPR(F) and YPR(C) for the 1997 to 2000 cohorts (England and Scotland)**

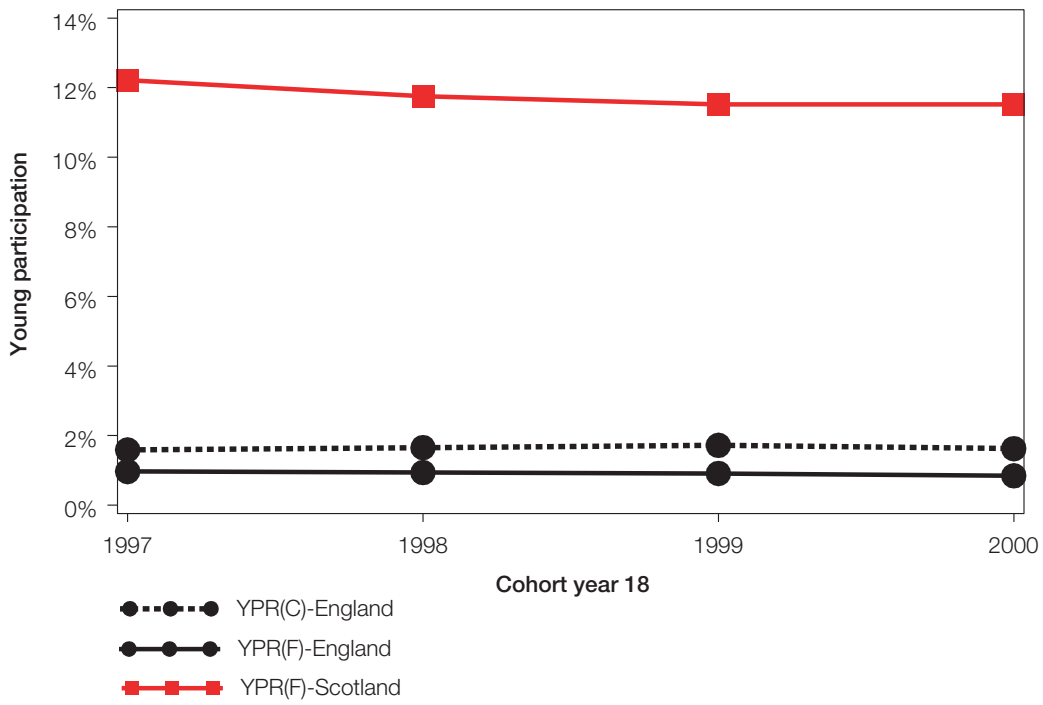


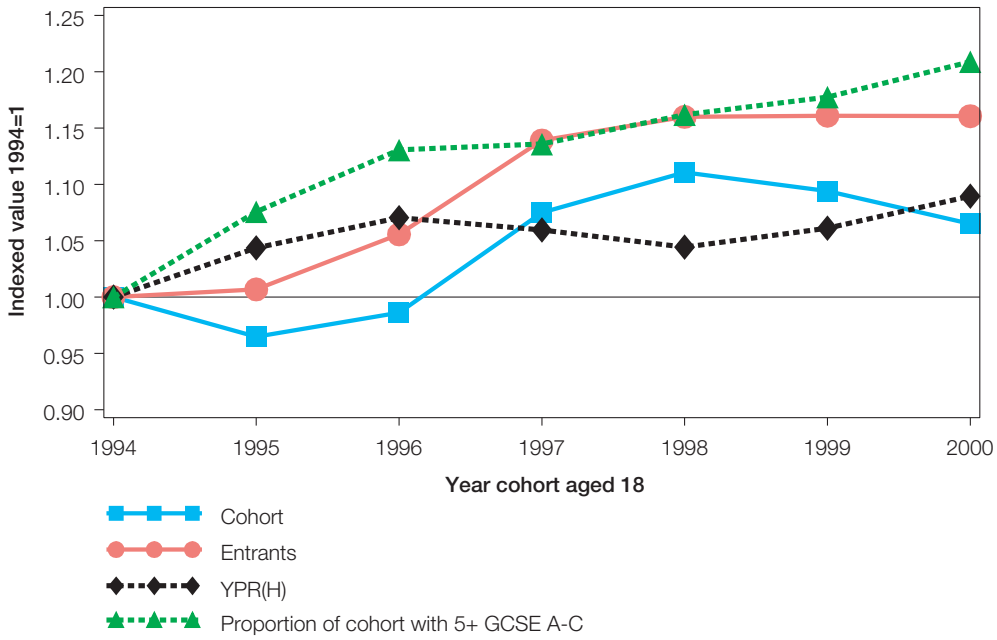
Figure 5 highlights the very different contributions made by HE courses in FEIs to young participation in England and Scotland. In Scotland the young participation rate in HE courses provided by FEIs is around 12 per cent, with around one in three Scottish young HE entrants studying in an FEI. In England participation on HE courses returned by FEIs is around 0.9 per cent, rising to 1.6 per cent when franchised courses taught at FEIs are included. This means that only around 1 in 20 English young entrants study for their HE courses in a further education institution. Wales is not shown as there is only partial data at the end of this period; the remainder of the period indicates a YPR(F) of around 0.5 per cent (see Table 23).

It is clear that participation in HE through FEIs is an important component of young participation in Scotland whereas in England and Wales it is of only minor importance. The high YPR(A) values for Scotland in Figure 4 can be attributed to these very different contributions of participation in HE courses at FEIs between Scotland and the rest of Great Britain. Both the YPR(F) and YPR(C) measures show little change over the period. This confirms the impression from Figure 4 that the dynamics of the YPR(A) series are driven by changes in the dominant YPR(H) component. The effect of young HE participation in FEIs on regional participation differences is examined later in the discussion of Table 1.

## 2.5 Participation, cohort size and GCSE results for English cohorts

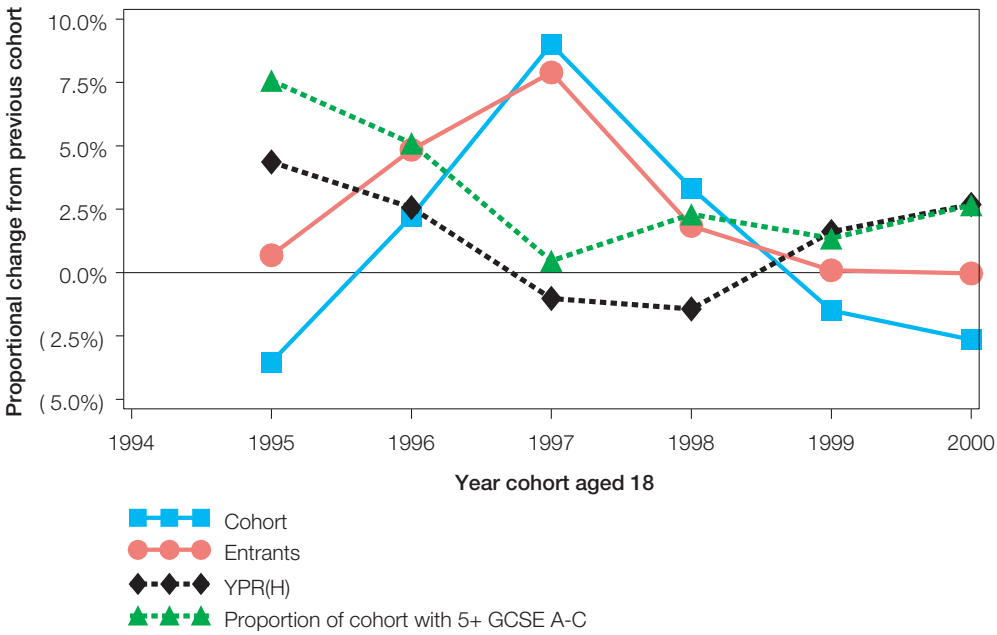
The YPR(H) trends by country showed that, for England, there has been a modest growth of 2.4 percentage points (9 per cent proportionally) in the YPR(H) between the 1994 and 2000 cohorts. Figure 6 shows the YPR(H) trend for England, together with the entrant, cohort and GCSE results[8] with all values indexed to the 1994 cohort=1.

Figure 6 **YPR(H), cohort, entrants and GCSE results for England (1994 cohort=1)**



This plot confirms that the sharp rise in entrants from the 1997 cohort was driven by a rise in the cohort size for that year. This result underlines the danger of using entrant figures alone as a proxy for participation trends. Over this period the trends in entrants are a poor indicator of participation: rises in participation often occur with no increase in entrants; and when entrants are rising participation is often static or falling. The rise in the proportion of the cohort gaining 5 or more grade A-C GCSEs is twice that of the increase in YPR(H). The largest rises in participation occur when the cohort size is falling and GCSE results are improving rapidly. This relationship is made clearer by plotting the proportional change between cohorts of these statistics; this is shown in Figure 7.

Figure 7 **Proportional change in YPR(H), entrants, cohort and GCSE results between English cohorts.**




The recasting of the results as cohort to cohort changes in Figure 7 suggests that the trends in YPR(H) can be largely accounted for by the annual changes in cohort size and GCSE performance. The largest annual rise in participation occurs for the 1995 cohort which, compared to the 1994 cohort, had both a substantially higher proportion of the cohort gaining 5 grades A-C at GCSE and a smaller cohort size. This would be expected to simultaneously increase the proportion of the cohort staying on to do A-levels and, when they had obtained these A-levels, to reduce the competition for places in HE. In contrast the 1997 cohort showed no improvement in the proportion gaining 5 grades A-C at GCSE, which would be expected to show little change in the proportion staying on to do A-levels. The 1997 cohort was also much (9 per cent) larger than the previous year, which would be expected to increase the difficulty of getting a place in HE; and, indeed, participation for this cohort was lower than the previous cohort.

Although both the GCSE performance and the cohort size have an influence, it appears that the growth in participation at the start of the sequence was mainly driven by high (greater than 5 per cent) annual improvements in the proportion of the cohort gaining the set of 5 grades A-C at GCSE that are often regarded as a

precursor for A-levels. The growth in participation is then arrested for the 1997 and 1998 cohorts by a combination of stalled GCSE improvement and a much larger cohort size increasing the competition for HE places. At the end of the period the improvement in GCSE results resumes at a modest proportional 2 per cent a year, and the size of the cohort declines by a similar 2-3 per cent annually, and modest participation growth is seen to restart.

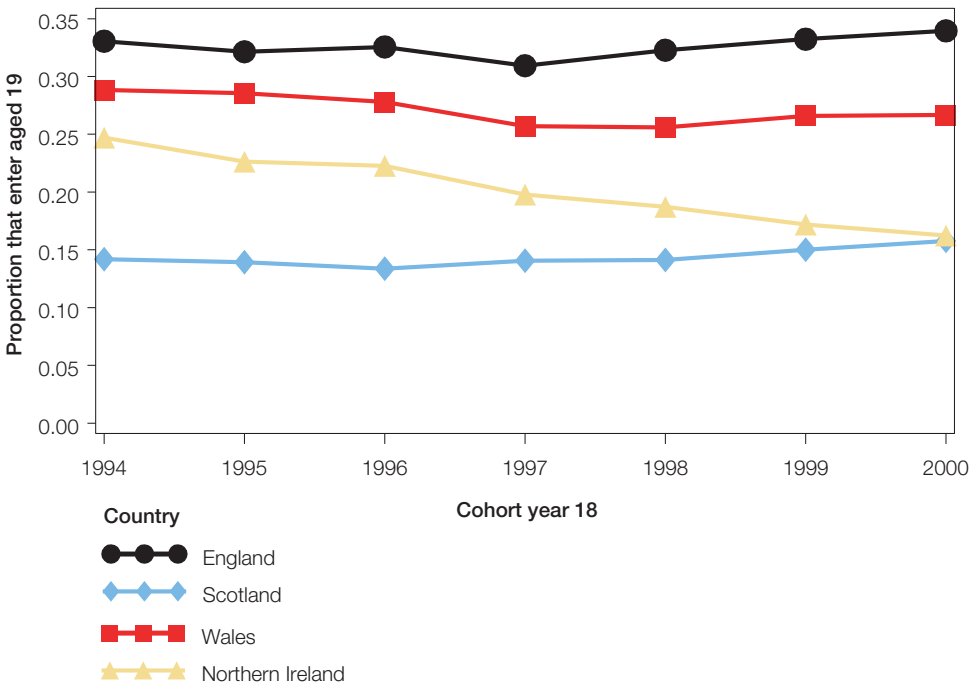
One complication to this analysis is the suggestion from the trends that the GCSE results and the cohort size may not be independent. This could occur if a particularly large school cohort strained school resources leading to, all other things being equal, a marginal negative effect on GCSE results.

The 1998 cohort is possibly anomalous in that the fall in participation is greater than that for the previous cohort despite a higher increase in the GCSE pass rate and a lower increase in cohort size. This is likely to be because 19 year-olds from the large 1997 cohort would have been in direct competition for places with 18 year-olds from the 1998 cohort. Additionally the large 1997 cohort was one factor in the over-recruitment of the English HE sector in 1997-98 against government limits[9] for *total* numbers, which would act to reduce the number of entrants they could take in 1998-99 to stay within total number controls. Alternatively, it is also possible that the marginally reduced participation for the 1998 cohort could be reflecting a negative influence from the introduction of tuition fees and replacement of grants with loans that affected that cohort. But even if this were the case the effect would be insignificantly small compared to other factors.

## 2.6 Entry age

Entrants are counted for the participation measure at country-specific school-aligned ages of 18 or 19. Figure 8 shows the proportion of total YPR(H) participation that is contributed by entrants aged 19 for each country over the period.

Figure 8 **Proportion of YPR(H) entrants that enter at age 19**



For England the ratio of 18 to 19 year-old entrants is very nearly 2:1. This ratio has been broadly constant over the period, with the proportion entering at age 19 declining from 33 per cent in 1994 to a low point of 31 per cent in 1997 and rising thereafter to 34 per cent in 2000. The proportions entering at 19 are slightly lower in Wales but show the same pattern. The proportion entering at 19 is very much lower for Scotland at around 15 per cent, which is partly a consequence of how the ages are defined for Scottish entrants (see Annex C). The share of YPR(H) entrants from Northern Ireland that enter at age 19 is lower than for England and Wales and has declined over the period. Entering at age 19 is more important for participation in HE through FEIs. Of YPR(F) entrants from the 1997 to 2000 cohorts, 46 per cent enter at 19 from England and 34 per cent from Scotland, with both proportions stable over this period.

### Entering HE earlier than planned to avoid tuition fees

One hypothesised effect of the introduction of tuition fees for entrants to the 1998-99 academic year was that young people might decide to enter HE sooner than they would otherwise have done to avoid paying the fee. The scale of any changes in behaviour may have been reduced by the policy of allowing those entrants in 1998-99 who gained a deferred acceptance from the 1997-98 UCAS admissions cycle – those taking a 'gap year' – to be exempt from the new arrangements. However, these deferred entrants form only around 20 per cent of 19 year-old entrants (a proportion that did not change for 1998-99) so some effect might be expected despite this policy. Earlier in this report it was shown that the sharp rise in entrants to the 1997-98 academic year, which might have been interpreted as evidence of bringing forward HE entry plans, is explicable by the increase in the size of the cohort and provides no evidence of any change in entry age choices. Looking at the trends in the entry age of young entrants provides a further, more sensitive, test of whether any such change in entry choices occurred.

If entrants did change their behaviour then it would be expected to show up as a higher ratio of 18 year-olds to 19 year-olds for entrants from the 1997 cohort, and a lower ratio of 18 year-olds to 19 year-olds for the entrants from the 1996 cohort (since 19 year-olds from this cohort may have decided to enter in 1997 rather than enter as 20 year-olds in 1998). The proportion of entrants at 19 is indeed higher for the 1996 cohort than the 1997 cohort but only by 1.6 percentage points, comparable to annual changes seen elsewhere in the sequence. The absence of significant disruptions in these ratios is further evidence that there was no major measurable change in students' choices about when to enter HE associated with the changes in student support and tuition fees for entrants to the academic year 1998-99. If there was a net change in entry age behaviour associated with these changes then it can only be extremely small, around a few hundred entrants. Further evidence that changes to student support and tuition fees did not affect entry behaviour is shown in the analysis of Scottish entrants choosing to study in England provided in Annex G.

## 2.7 Sex

On the YPR(H) statistic, young women have been more likely to enter HE than their male peers in each region and for every year in the time series. The participation inequality experienced by men has increased over the period. Figure 9 shows that, for England, young women enjoyed annual increases in participation of around 1 percentage point a year at both the start and end of the period, with an intervening flat period for the 1996 to 1998 cohorts. Young men fared worse. In the years when participation was rising, men experienced less than half the rise enjoyed by women. In the years when participation was flat for women, male participation fell. In combination these trends led to a steady increase in participation inequality between the sexes, from an absolute gap of 1.5 percentage points in 1994 to over 4 percentage points in 2000.

Figure 9 **YPR(H) by sex for English cohorts 1994-2000**

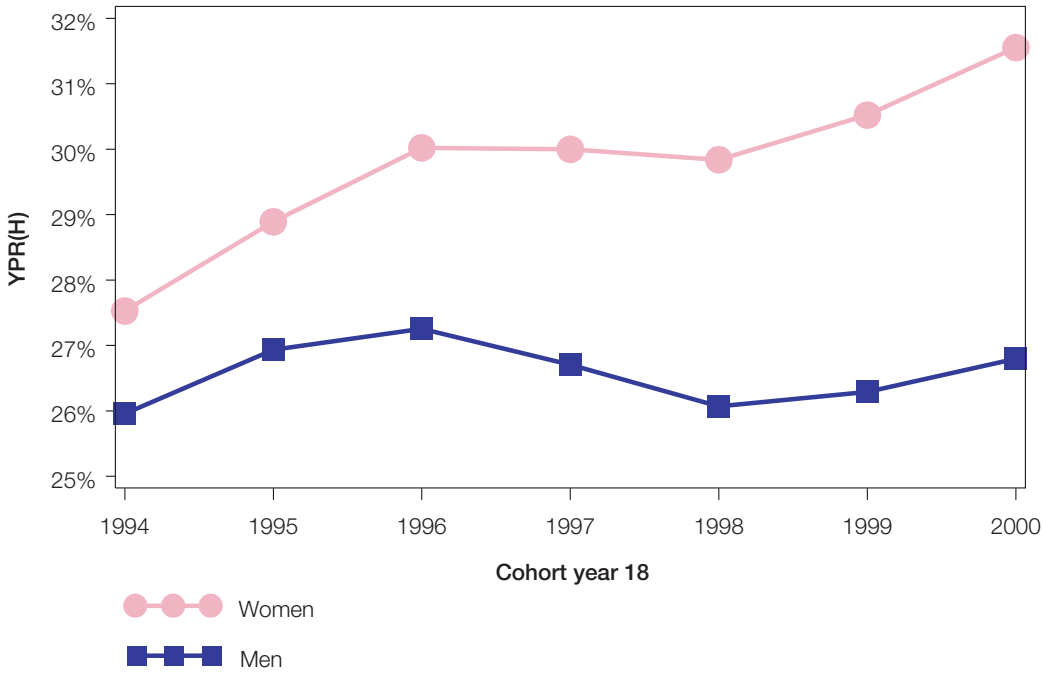



Figure 10 shows this inequality, and the situation in other UK countries, as the proportional participation advantage of young women over young men. In these terms the inequality has trebled from 6 per cent in 1994 to 18 per cent in 2000. The inequality by English regions in 2000 are similar with a narrow range of 14 per cent to 20 per cent but, as shown in Figure 10, this is not the case between the constituent countries of UK where there are marked differences in YPR(H) sex inequality.

Figure 10 **YPR(H) sex inequality by country**

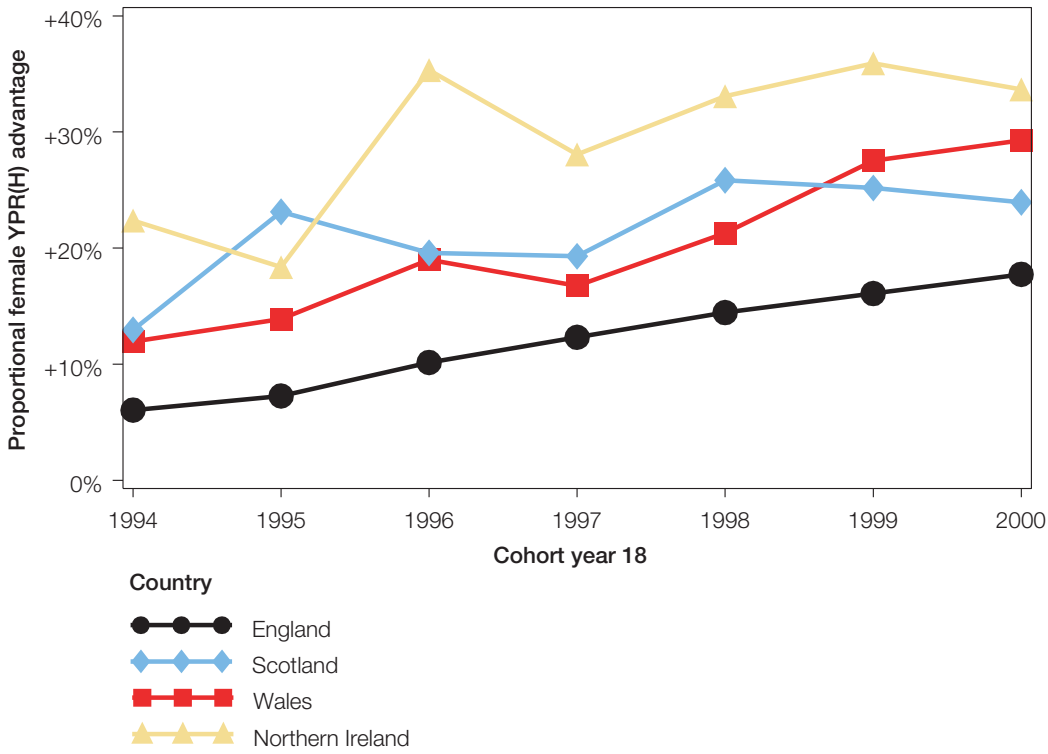



Figure 11 **YPR(H) by sex and entry age for England**

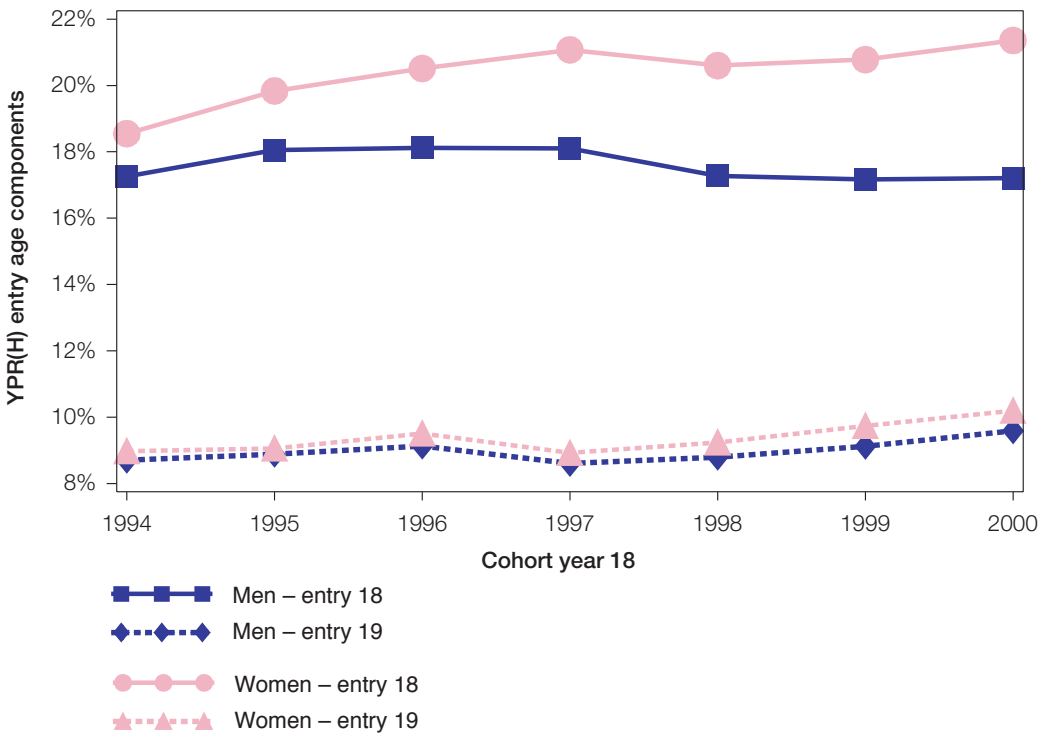


Figure 11 shows the entry age components for YPR(H) by sex for the 1994 to 2000 cohorts. This indicates that the observed increase in sex inequality results mainly from diverging participation at age 18 rather than at age 19. Participation at age 18 has increased by 3 percentage points for women between the 1994 and 2000 cohorts, whereas male participation at age 18 is the same for the 2000 cohort as it was for the 1994 cohort.

A concern with time series by sex based on the HESA record is that during the period a number of nursing colleges were added to the record, through mergers with HEIs. HE nursing students are mostly women so this could show an apparent increase in sexual inequality when, in fact, the inequality was always there but concealed, as the nursing students were not included at the start of the sequence. Annex I investigates this possibility. It concludes that if nursing students are removed from the statistic then, as expected, the sexual inequality reduces, but remains substantial (at 13 per cent for England), and the trend of increasing inequality is not altered. This indicates that the level and trend of sexual inequality measured in this section is not caused by the introduction of nursing colleges to the HESA record time series.

## 2.8 Seasonality

The strong seasonal pattern of births is shown in Figure 63 (Annex A). For later cohorts, where the estimates are based on the child benefit data alone, the individualised nature of the entrant and cohort counts allows these seasonal birth patterns to be accounted for, and young participation rates to be obtained by the time of year that children are born.

This reveals a pronounced seasonality to HE participation. This is mostly for participation at entry age 18, with relatively little variability for entry at age 19. Looking at participation patterns by individual dates it is clear that the important patterns follow month boundaries, so Figures 12 and 13 show participation by month and year of birth for England and Scotland respectively.

Figure 12 **YPR(A) by month of birth for England (18 year-old entrants only)**

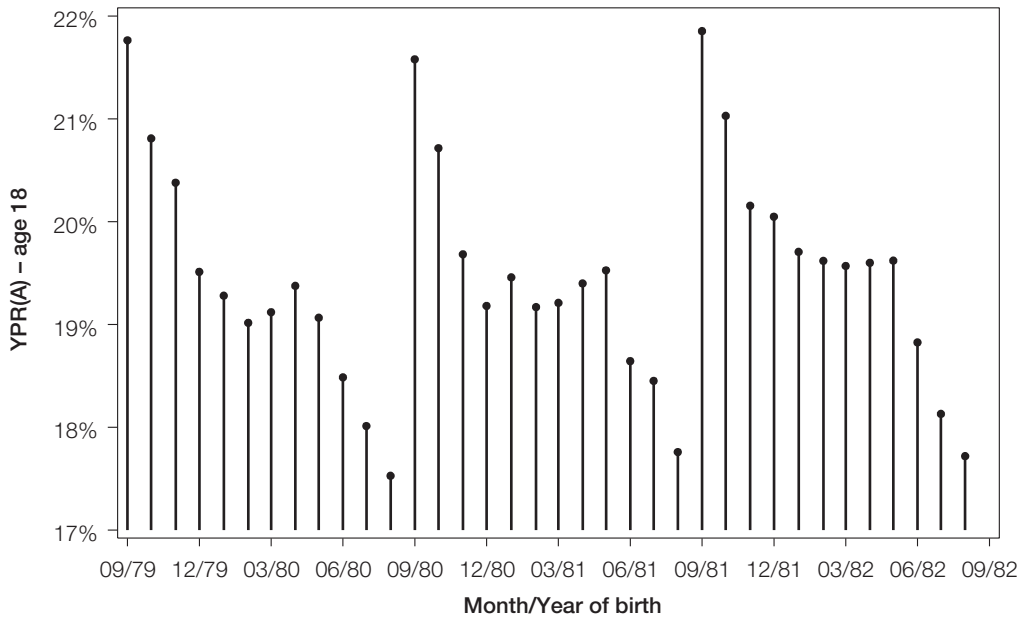
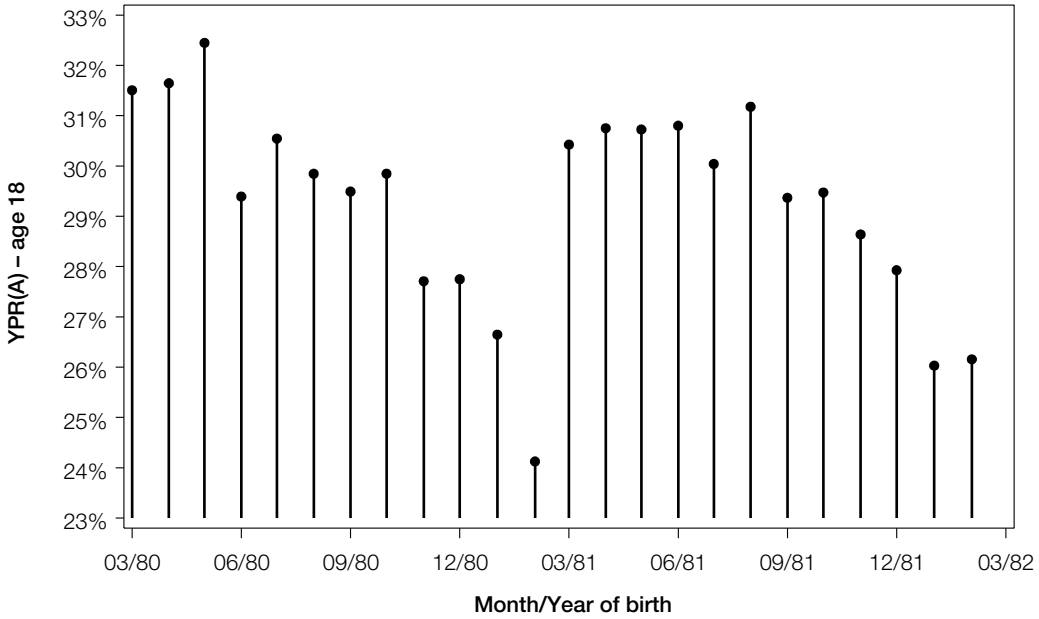


Figure 13 **YPR(A) by month of birth for Scotland (18 year-old entrants only)**




For England, those children born in the autumn (and therefore the oldest in their school year cohort) are around 20 per cent more likely to be young entrants to higher education than those born in the late summer. This is equivalent to differences in participation found between, for example, the North West and South East regions. At entry age 19 the seasonality in participation is opposite in effect to that at entry age 18, but is small (with a 0.7 percentage point difference between months compared to 4 percentage points at entry age 18). Thus it has only a limited effect on reducing the monthly differentials. This suggests that the observed seasonality is not caused by younger children in a cohort being assigned to a later cohort at school.

These results are replicated when monthly birth statistics[50], rather than the child benefit data, are used to apportion the school cohorts across months. Similar monthly patterns and absolute differences are found for each sex (shown in Table 26 in Annex L), but the lower level of participation by men at age 18 means that the proportional variation is greater. Men who were born in September are on average one quarter more likely to enter HE than those born in August.

This pattern of seasonality in HE participation is consistent with findings of seasonal effects on educational attainment in schools. In particular Alton and Massey[10] used a database of GCSE results in 1991 (that is, the cohort who would be 18 in 1993) from English, Welsh and Northern Irish examination boards which is linked to the GCE A-level results from 1993. These data show that, compared to children born in August, those born in September on average take more GCSEs and get better grades for each entry, and are 18 per cent more likely to take at least one A-level two years later. For those who do go on to take A-levels, there was no obvious seasonality in the number of A-levels taken or A-level grades achieved.

This indicates that after the selecting transition from GCSE there are no additional seasonal effects on the progression of the remaining students. This result is reflected in the absence of any pronounced seasonal effects in the leaving rates of English full-time first degree 18 year-old entrants, as shown in Figure 80, Annex C.

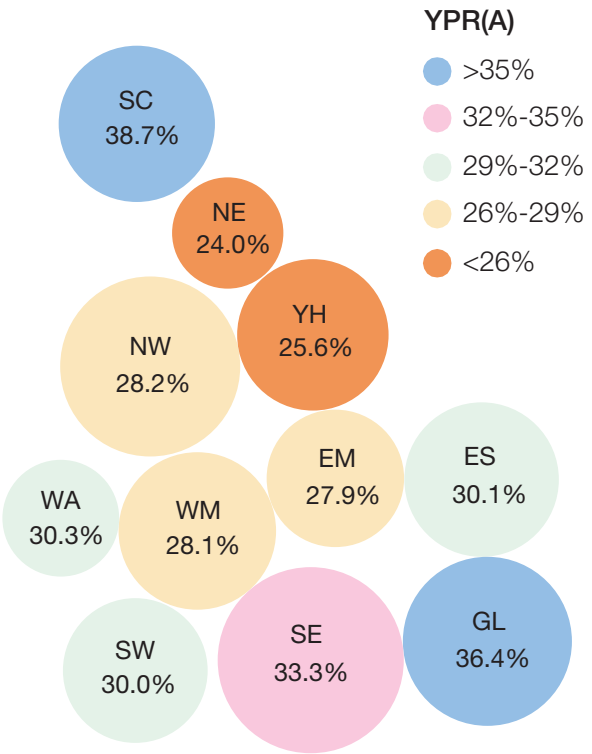
There are only two cohorts of analogous data for Scotland, which are shown in Figure 13. The picture here is more mixed, as might be expected from the partially discretional element in when to enter the school year (see Annex C). Nevertheless, there is a similar range of 20 per cent but this time it is children born in the spring who have an advantage over those born in the winter. This is consistent with the English data as the typical eligibility date for school cohort assignment in Scotland is the end of February (that is, those born in March would be the oldest in a cohort).

## 2.9 Geography of participation: regions

Regions are too large to describe the local geography of high and low participation. Nevertheless, the varying shares of high and low participation areas that form the character of regions, together with the differing nature of participation between regions, do lead to some pronounced regional patterns in participation which are described in this section.

## 2.10 Differences in regional participation rates and trends

Figure 14 **YPR(A) by region, 2000 cohort**

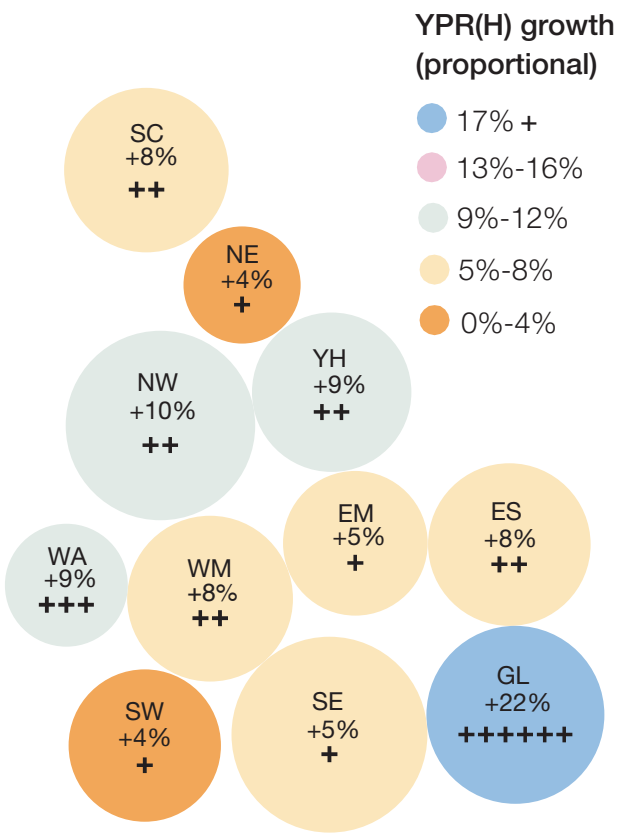



| Code | Region, country |
|---|---|
| NE | North East |
| NW | North West |
| YH | Yorkshire and the Humber |
| EM | East Midlands |
| WM | West Midlands |
| ES | East of England |
| GL | London |
| SE | South East |
| SW | South West |
| WA | Wales |
| SC | Scotland |

The YPR(A) measure, which includes HE entrants to both HEIs and FEIs, gives the most comprehensive picture of regional participation. Figure 14 plots the 2000 cohort YPR(A) rates for each region as a cartogram, where each region is represented by a circle whose area is proportional to the cohort size for that region.

The highest young participation rates are found in London, the South East of England and in Scotland, which all have YPR(A) values of 33 per cent or more for the 2000 cohort. Participation is lower in the northern half of England, particularly in Yorkshire and the Humber and the North East which have YPR(A) values of 26 per cent and 24 per cent respectively. Within England this translates into young people in London being more than 50 per cent more likely to enter university than their peers in the North East, a substantial variation for such large units. As noted in the country results, the very high YPR(A) value for Scotland benefits from a large contribution from participation in HE courses not provided at HEIs, as indicated by its much lower YPR(H) value.

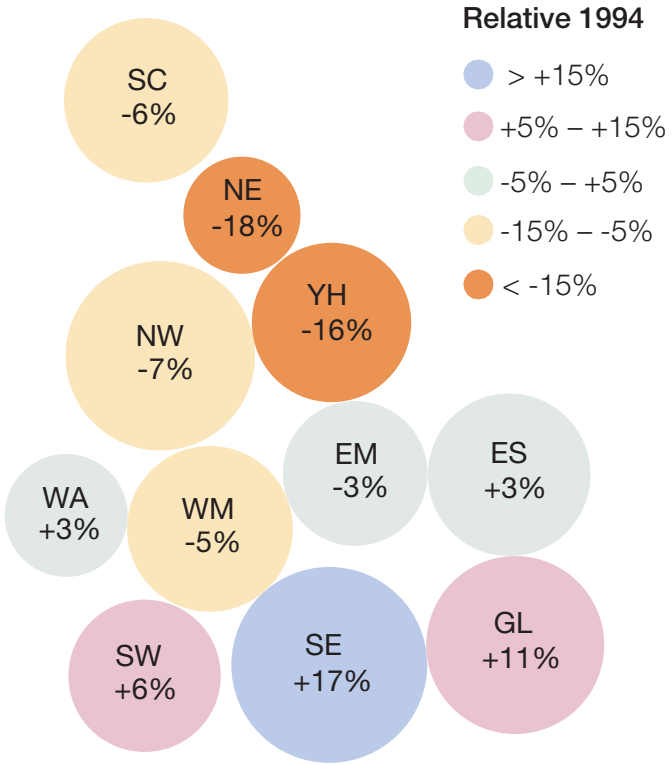
Figure 15 **YPR(H) proportional and absolute growth by region (1994 to 2000 cohorts)**




*Note: Within each region the percentage shows the proportional increase and the number of black crosses indicates the absolute percentage point increase. This figure uses the alternative adjustment for unmapped entrants from the 1994 cohort that is described in Annex C.*

Young participation in HEIs alone – the YPR(H) measure – is not as comprehensive as the YPR(A) measure but for England and Wales it captures the overwhelming majority of young participation (though it understates the level of all HE participation in Scotland where the YPR(A) is a better measure, see Figure 14). The advantage of the YPR(H) measure is that it allows trends in regional participation to be followed in a consistent manner from the 1994 to 2000 cohorts. Figure 15 shows the proportional and absolute YPR(H) growth of Great Britain regions between the 1994 and 2000 cohorts. All regions have shared in the national growth in participation over this period though this has not been evenly distributed. The North East and the South West show low proportional increases of 4 per cent over this seven cohort period. In contrast London has seen exceptional proportional growth of 22 per cent, resulting in a 6 percentage point absolute rise in YPR(H).

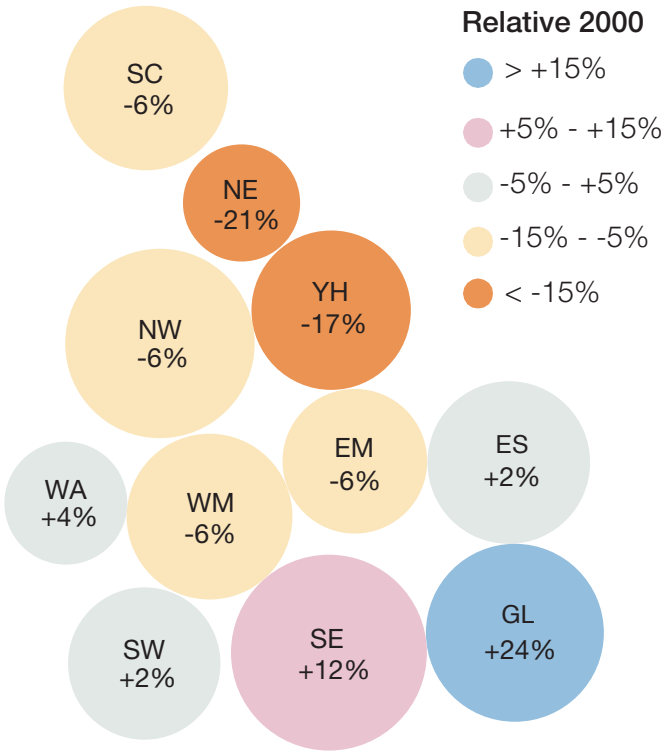
Figure 16 **Regional YPR(H) relative to the GB mean by region, 1994 cohort**




*Note: This figure uses the alternative adjustment for unmapped entrants from the 1994 cohort that is described in Annex C.*

The pattern of regional participation growth shown in Figure 15 is reflected in the cartograms of Figures 16 and 17, which show the YPR(H) of each region relative to the Great Britain average for the 1994 and 2000 cohorts. This removes the effect of the general growth in participation over this period so that the relative changes between regions can be seen. The general regional geography of above and below average participation regions has remained similar. Most striking of the changes is the doubling of London's relative advantage from 11 per cent above average for the 1994 cohort, to 24 per cent above the higher average in 2000. This rise, coupled to the relative decline of participation in the South East (the highest participating region for the 1994 cohort) and the South West, leaves London markedly higher than all other regions. The two lowest participating regions have seen their relative disadvantage increase over the period. Yorkshire and the Humber was 16 per cent below average for the 1994 cohort and 17 per cent below average in 2000; the North East has seen its relative participation slump from 18 per cent to 21 per cent below average in a steady decline over the period.

Figure 17 **Regional YPR(H) relative to the GB mean by region, 2000 cohort**



## 2.11 Differences in the nature of young participation between regions

Regions differ from each other not only in their levels and trends in young participation but also in the nature of that participation. This section looks at the influence of HE participation outside of HEIs and the pattern of young entry ages in relation to regional participation inequalities. Table 1 shows several measures of young participation for the 2000 cohort that illustrate some of these differences.

Table 1 **Different measures of young participation by region and country (2000 cohort)**

| Region | Cohort | YPR(A) | YPR(A) age 18 | YPR(A) age 19 | YPR(H) | YPR(F) | YPR(C) |
|---|---|---|---|---|---|---|---|
| North East (NE) | 32,000 | 24.0% | 17.7% | 6.3% | 22.8% | 1.2% | 1.4% |
| North West (NW) | 85,900 | 28.2% | 20.3% | 7.8% | 27.1% | 1.1% | 1.6% |
| Yorkshire and the Humber (YH) | 59,900 | 25.5% | 17.8% | 7.7% | 24.2% | 1.4% | 1.9% |
| East Midlands (EM) | 49,400 | 27.8% | 19.0% | 8.8% | 27.2% | 0.6% | 1.2% |
| West Midlands (WM) | 65,300 | 28.0% | 19.3% | 8.7% | 27.4% | 0.7% | 1.5% |
| East of England (ES) | 61,800 | 30.0% | 19.4% | 10.5% | 29.5% | 0.6% | 1.9% |
| London (GL) | 76,500 | 36.4% | 21.6% | 14.7% | 36.0% | 0.5% | 1.3% |
| South East (SE) | 89,800 | 33.2% | 20.7% | 12.5% | 32.5% | 0.7% | 1.5% |
| South West (SW) | 55,200 | 30.0% | 18.2% | 11.8% | 29.5% | 0.6% | 1.9% |
| Wales (WA) | 35,000 | nc | nc | nc | 30.2% | nc | nc |
| Scotland (SC) | 61,100 | 38.7% | 30.6% | 8.0% | 27.1% | 11.5% | nc |

*Note: nc indicates that the statistic is not calculated for that country. Welsh YPR(A) values are calculated for some earlier cohorts, see Table 23 in Annex L. YPR(H) and YPR(F) are not always additive to YPR(A) since some entrants may be correctly counted in both YPR(H) and YPR(F) and once in YPR(A).*

### Regional differences in the contribution of HE participation in FEIs

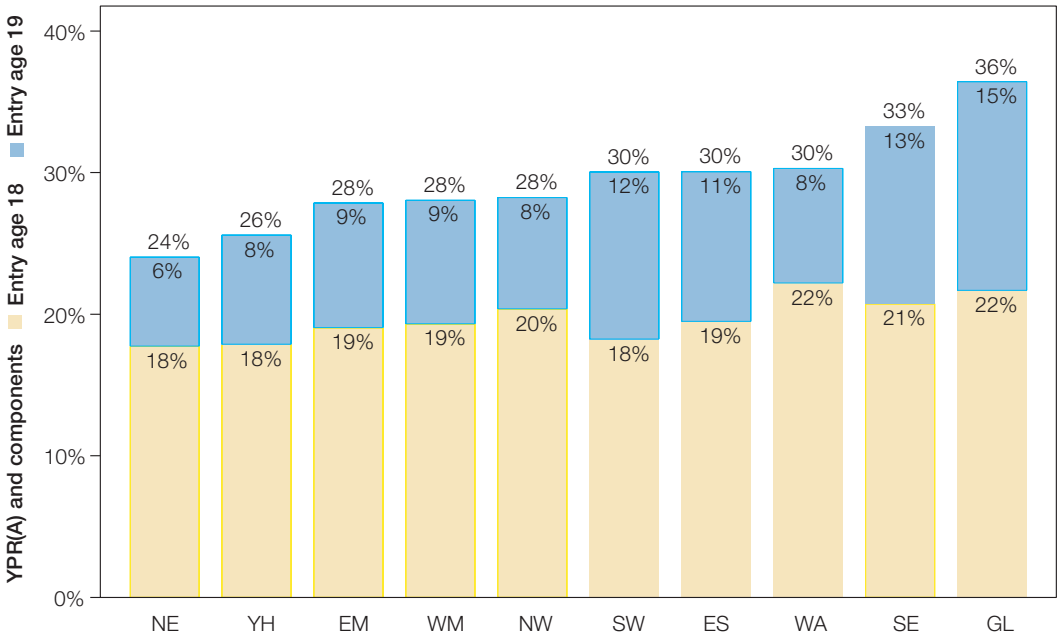
Table 1 gives the two statistics for measuring HE participation at FEIs that were introduced in the national results (Figures 4 and 5). The YPR(F) rate is for students that enter an FEI and the student record is returned by the FEI to one of the FEI data collections. The YPF(C) rate includes these YPR(F) students, and those who are studying HE on a franchised course at an FEI where the student record details are returned by the parent HEI to HESA. These rates, while both small throughout England, differ significantly from each other in their regional distribution. The participation rate for directly recorded FEI entrants –YPR(F) – is inversely related

to the overall participation, so that those regions with the lowest participation rates have the highest absolute participation through this route. Young people in the North West are three times more likely to go to HE in an FEI than those in London. However when entrants that are on franchised courses in FEIs are included, this variation in HE participation in FEIs is reduced, with all regions falling into a 1.3-2 per cent band. So although HE participation through FEIs, rather than HEIs, does not increase regional participation inequalities, its low absolute value and narrow regional range (once franchised students are included) mean that it does not reduce differentials.

### Regional differences in entry age profile

Figure 18 splits the 2000 cohort YPR(A) rate into entry at 18 and entry at 19 for regions in England and Wales. The entry at 18 component shows relatively little variation, with all regions in a narrow 18-22 per cent band. In contrast the component for entry at age 19 shows wide variation, ranging from 6 per cent for the North East to 15 per cent for London. This shows that differences in the participation rate at age 19 are the source of most of the regional young participation inequality. In the highest participating region, London, young people are nearly three times more likely to enter HE at 19 than those from the lowest participating region, the North East.

Figure 18 **Entry age components of YPR(A) by region and country (2000 cohort)**




*Note: Scotland and Northern Ireland are excluded because of their different age reference dates.*

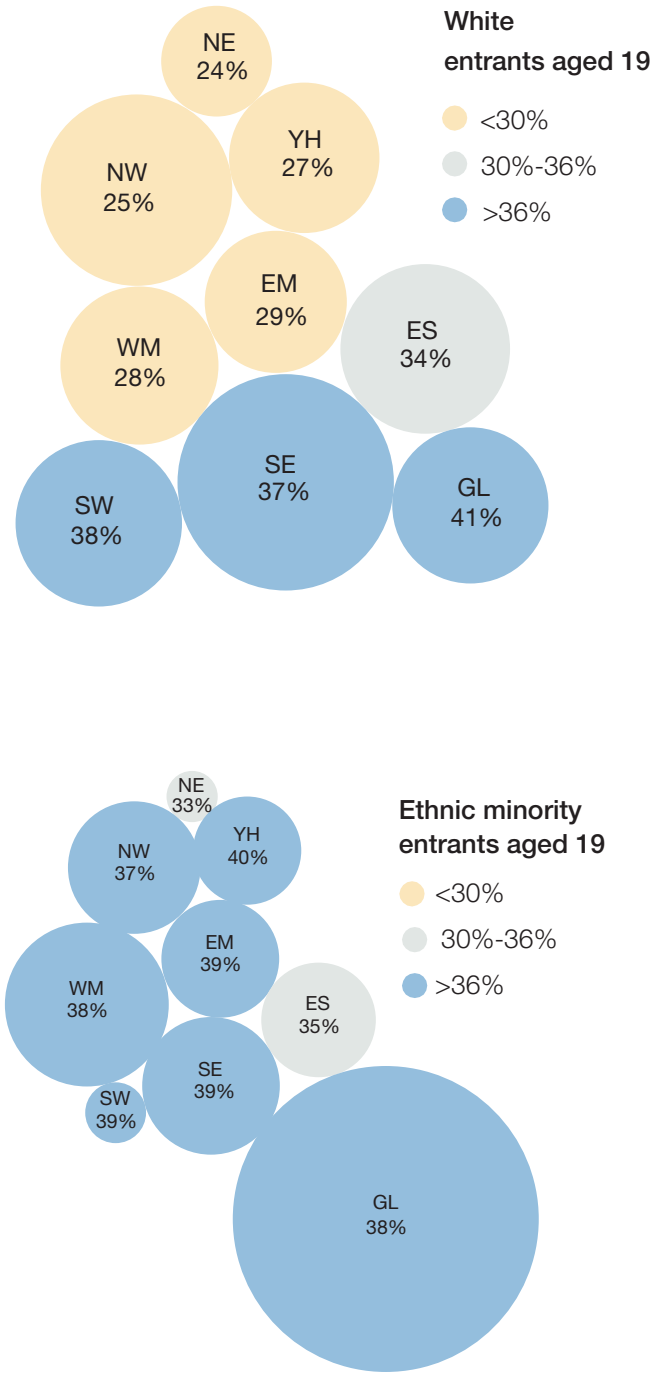
The deceptively simple split of entry at 18 or 19 shows some complex patterns that are probably related to the different reasons for deciding, or being constrained, to enter at 19 – from earning money or retaking exams to a recreational 'gap' year. Despite acknowledging this complexity, it is tempting to see a parallel between London's characteristics (high levels of young participation and a preference for entering at age 19) and the participation behaviour of most ethnic minority groups. Just under half of England's ethnic minority YPR(H) entrants originate from London (where they make up half of entrants), whereas just 10 per cent of English white entrants are from London[11]. Together these patterns suggest a possibility that age profile and perhaps the high levels of young participation in London could be a consequence of the relatively high proportion of ethnic minority children in London. This is investigated in the following section.

This work does not attempt the difficult task of estimating ethnic minority participation rates by area[12,13], so cannot directly address the question of whether higher participation in London is due to high participation by ethnic minority groups in London. However, the question of whether the high proportion of London entrants at age 19 is caused by the high proportions of ethnic minority groups in London can be examined by looking at the age profile of entrants by region and ethnic group. A simple grouping[14] of white and ethnic minority is used to look at the proportion of 2000 cohort YPR(H) entrants who enter at age 19 by region, see Figure 19.

A greater proportion of YPR(H) entrants from ethnic minority groups enter at age 19 than of white YPR(H) entrants. This proportion does not vary much across England: for most regions 38-40 per cent of their ethnic minority entrants enter HE at age 19. White YPR(H) entrants are less likely overall than ethnic minority entrants to have entered at age 19, but this is not true across the regions of England. In the North and the Midlands only between 24 and 29 per cent of white YPR(H) entrants entered at age 19, contrasting with the much higher proportions (around 10 percentage points higher) for ethnic minority entrants in these regions. In the four regions that make up the southern half of England the proportion of white entrants who enter at 19 is higher, and similar to the proportions from ethnic minorities. The proportion of white entrants from London who enter at 19 is 41 per cent, compared to 38 per cent of ethnic minority entrants from London.

This limited analysis suggests that the high proportion of entrants from London who enter at age 19 compared to other regions (Figure 18) is due mainly to the geographical variation in the propensity of white YPR(H) entrants to enter at age 19. White entrants in London, and to a lesser extent the south of England in general, are more likely to enter at 19 than their peers in the north of England. Ethnic minority entrants show a near uniformly high propensity to enter at age 19, and their lower relative share of the entrants in regions outside London acts to increase the regional difference where the proportion of white entrants entering at 19 is low.

Figure 19 **Proportion of YPR(H) 2000 cohort English entrants that enter aged 19 by region and ethnic grouping**



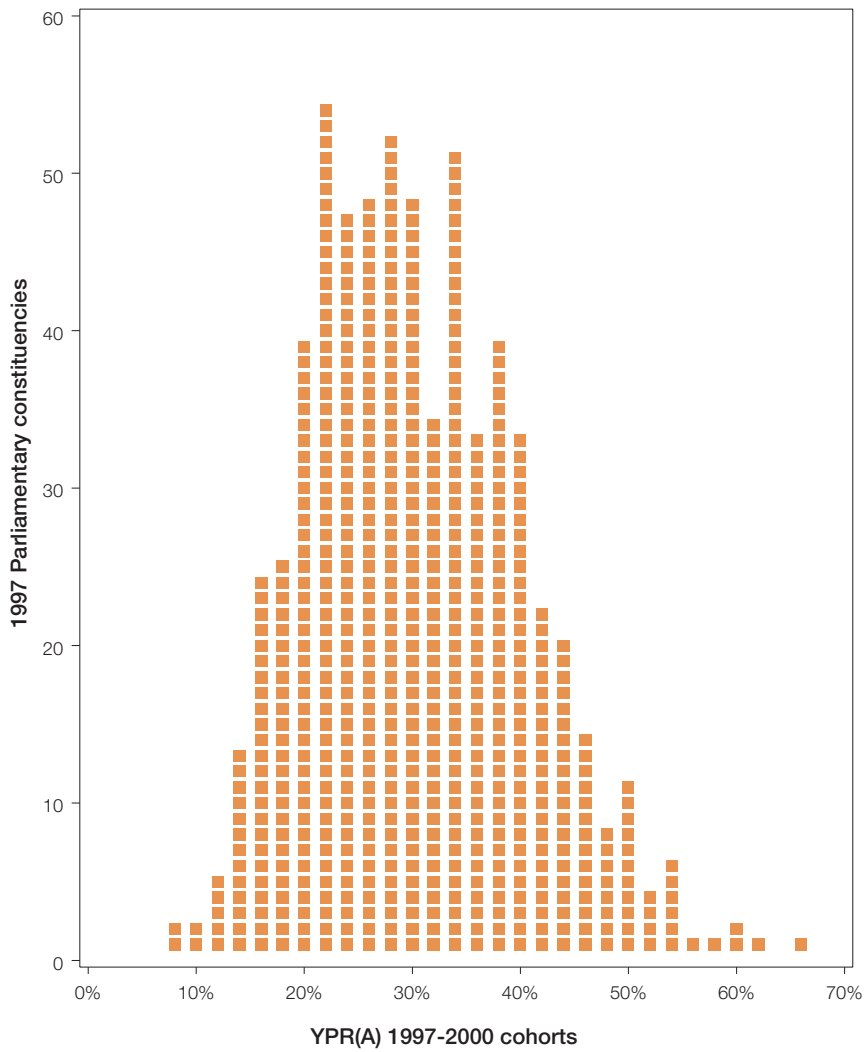

*Note: The cartogram regions are scaled so that their areas are proportional to their share of entrants (white and ethnic minority respectively) from the 2000 YPR(H) cohort.*

## 2.12 Geography of participation: parliamentary constituencies

Parliamentary constituencies have several useful properties for looking at the sub-regional patterns of participation. Reflecting their purpose as an electoral geography, they have a comparatively narrow range of population sizes with an annual cohort size close to 1,000. Although not small enough to capture the local pattern of participation, investigation shows that parliamentary constituencies do have a wide range of participation rates and are often internally fairly uniform.

Figure 20 shows the distribution of YPR(A) rates by parliamentary constituencies. This reveals a wide range of participation rates. Young people in the four lowest participating constituencies –Sheffield Brightside, Nottingham North, Leeds Central and Bristol South – have a one in ten, or worse, chance of entering HE. In contrast, in the highest participating constituencies – Kensington and Chelsea, Westminster, Sheffield Hallam and Eastwood (Scotland) – two out of three young people enter HE.

Figure 20 **YPR(A) for 1997 parliamentary constituencies (1997 to 2000 cohorts combined, Great Britain)**




*Note: Northern Ireland, for which the YPR(A) is not calculated, is not included.*
*Each square represents one of the 641 parliamentary constituencies for Great Britain.*

Figure 21 is a cartogram of the participation of parliamentary constituencies, where the area of each constituency is scaled to the cohort size and the colour indicates the participation. The scale of reproduction in this report does not allow the names to be shown (an annotated version of this, and other cartograms and maps, are provided on the POLAR service described in Annex H). Nevertheless this diagram provides useful information on the sub-regional pattern of participation.

Two dominant patterns are of note. As would be expected from the pattern of regional rates, most of the high participation areas are found in the south of England and in Scotland. London and its commuter hinterland, including Hertfordshire, Cambridgeshire, Surrey and the M4 corridor to the Cotswolds, form a large grouping of high participation areas. Notable large groupings of low participation constituencies include those around Redcar-Tyneside, Sheffield-Barnsley, Birmingham, Manchester, Liverpool and East London.

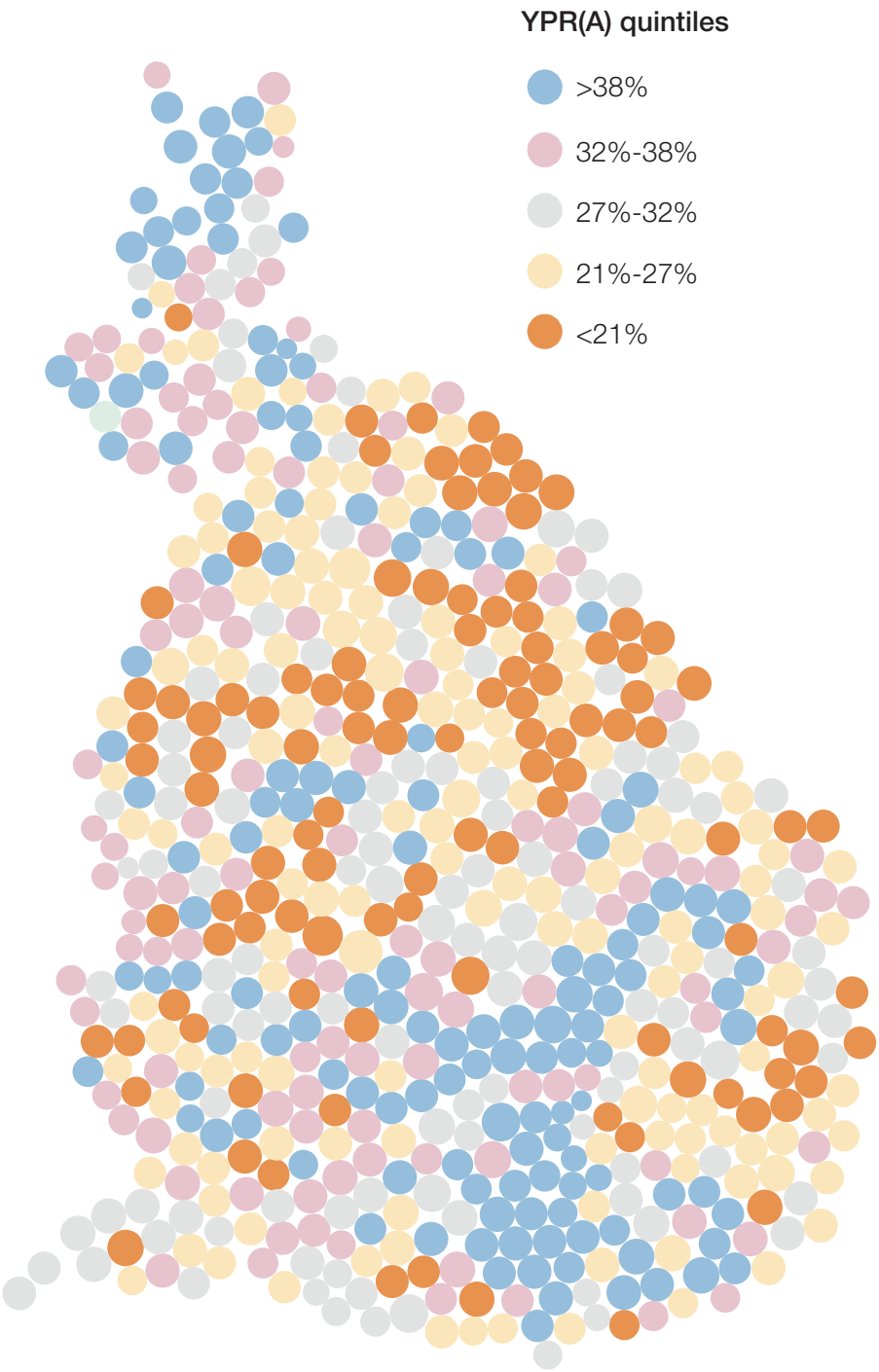
The second important pattern is that the clear regional participation division is too simplistic. All regions contain a mixture of high and low participation constituencies. Low participation constituencies are frequently found in the south of England (for example, parts of Bristol, Southampton, Portsmouth, East London and the Thames estuary). Similarly there are plenty of high participation constituencies in the north of England (for example around Leeds, Harrogate and Tatton).

Figure 21 differs from analogous mappings of advantage and disadvantage within Great Britain in not showing very low participation for central Glasgow constituencies. These areas, in particular constituencies such as Glasgow Springburn and Glasgow Shettleston, frequently appear as the most disadvantaged areas on economic and health measures in the UK. Yet these constituencies record YPR(A) values around 21 per cent, low but much higher than the 10 per cent or so observed for similarly disadvantaged English constituencies.

These findings were investigated carefully to see if they might result from errors in the entrant or cohort estimates, but these causes were ruled out. In fact on the YPR(H) measure these central Glasgow areas recorded low participation rates of around 10 per cent, comparable to similarly disadvantaged English constituencies. The higher YPR(A) rates for these areas is a consequence of the higher participation in HE courses in FEIs. This has been noted as a feature of Scottish participation (Figure 5) and is particularly marked in these disadvantaged areas.

In constituencies such as Glasgow Springburn and Glasgow Shettleston over half the young participation is through HE courses in FEIs (predominantly local) and, in total, over half the study is at HND or HNC level. By comparison, in higher participation areas of Scotland around one in four *entrants* study in FEIs; for the lowest participation constituencies in England around 1 in 10 *entrants* study in FEIs, falling to as few as 1 in 100 in the highest participating English constituencies. Therefore it appears that the relatively high (compared to English counterparts) young participation rates in these disadvantaged Scottish constituencies is genuine, and is a consequence of (though not necessarily in a causal sense) the high proportions participating in HND and HNC courses provided by local FEIs.

Figure 21 **Cartogram of YPR(A) 1997-2000 for Great Britain parliamentary constituencies (1997 boundaries)**



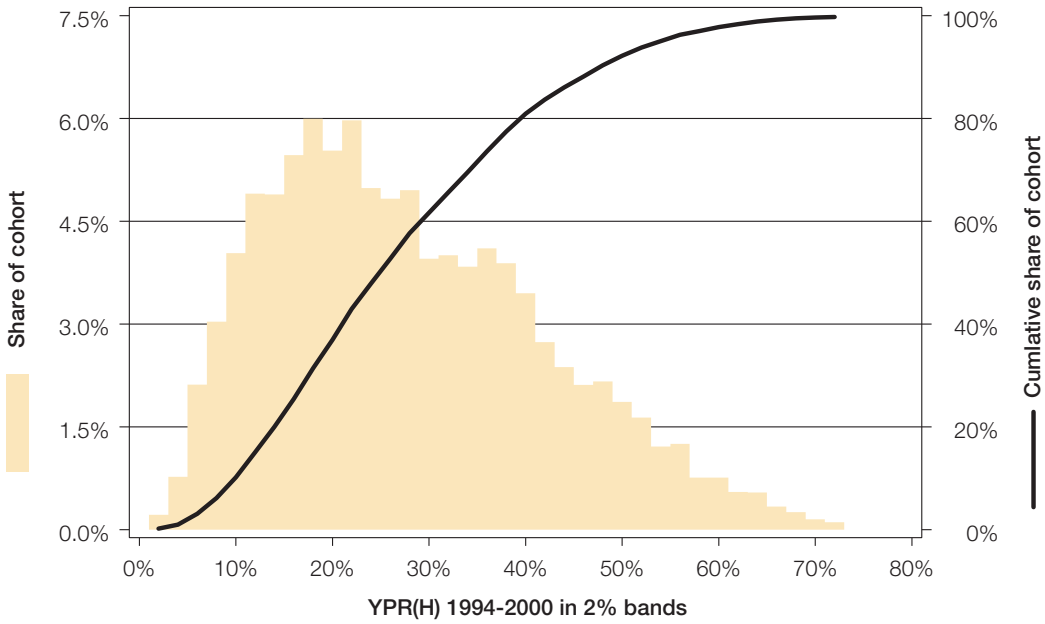

*Note: Each circle represents one of the 641 GB constituencies, with the area of the circle proportional to the combined 1997 to 2000 cohorts. YPR(A) is not calculated for Northern Ireland.*

## 2.13 Geography of participation: wards

Reducing the size of the area unit from regions to parliamentary constituencies shows that the pattern of young participation is more complex than the simple north-south division, with low and high participation areas a feature of all regions. This is a common result in this work: as the geographical units used to examine young participation become progressively smaller, previously unremarkable areas reveal marked inequalities. Unfortunately, using very small area units introduces problems relating to the small size of the cohort, so that the measured rate is not a reliable guide to the 'true' underlying young participation rate for the area. These issues are discussed in the group analysis in the next section.

Our work has indicated that using an area unit the size of wards offers a good balance between the area being too small to give reliable rates and being so large that it hides a number of very low or high participation neighbourhoods. The 8,000 wards in England are too numerous to report on individually. This section describes the distribution of participation rates that are seen for wards and shows an example of the kind of patterns that are often seen in maps of local participation rates.

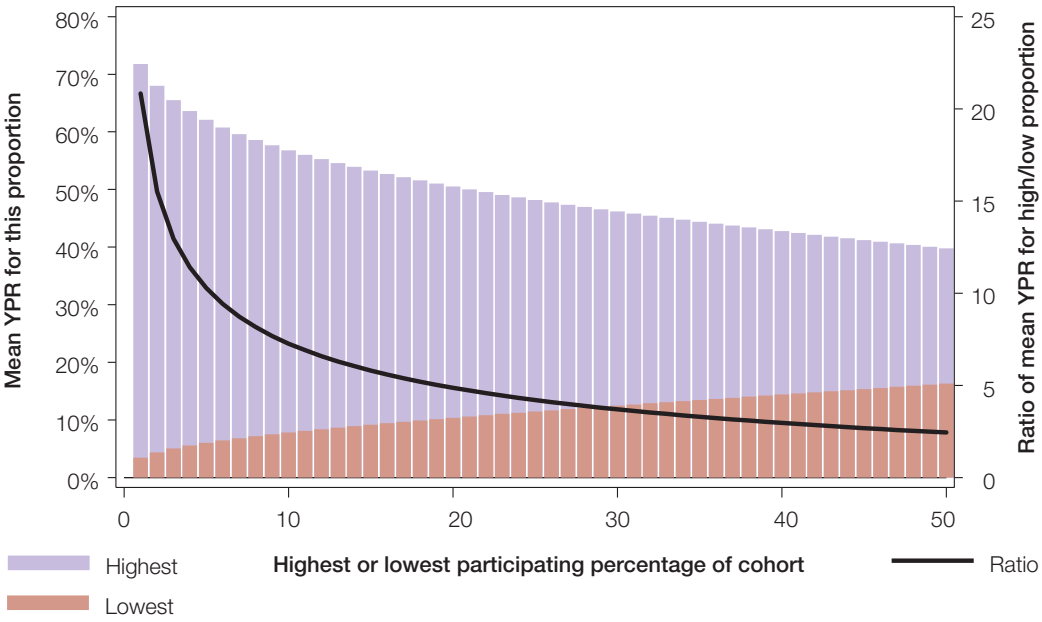
Figure 22 **Distribution of ward YPR(H) rates for English wards (1994-2000 cohorts combined)**




The distribution of ward YPR(H) rates is shown in Figure 22. This shows that young people are most likely to live in wards where the YPR(H) is around 20 per cent. A small proportion, around 1 in 10, live in wards where the participation rate is 10 per cent or below; and a quarter enjoy participation rates of 40 per cent or more. Virtually no wards have a YPR(H) over 70 per cent. There are around 40 substantial wards (taken here as the total cohort size over the period being greater

than 500 individuals) in England that have exceptionally low participation of 5 per cent or less. These very low participation wards are found in all English regions (except London), reinforcing the earlier point that low participation areas can be found within areas with high average participation.

Figure 23 **YPR(H) (1994-2000) for cumulative extreme percentiles of the cohort and the ratio of these high/low percentiles**




Inequalities in participation are often expressed in terms of a ratio of the participation rate of the highest group to the lowest group. Figure 23 shows the ward YPR(H) distribution in a way that allows the calculation of these ratios. The low and high bars give the YPR(H) of the indicated cumulative percentile of the cohort; the ratio shows the YRR(H) of the indicated highest cumulative percentile divided by that of the indicated lowest cumulative percentile. This shows, for example, that the (mean) YPR(H) of the highest participating 20 per cent of wards is just over 50 per cent, and that of the lowest participating 20 per cent is 10 per cent. This gives an inequality ratio of 5, showing that young people in the highest participating 20 per cent of wards are, on average, five times more likely to enter HE than their peers in the lowest participating 20 per cent of wards. Comparison of the highest and lowest 10 per cent and 5 per cent of wards gives ratios of 7 and 10 respectively. This variation shows the importance of specifying the size of groups when doing such a comparison.

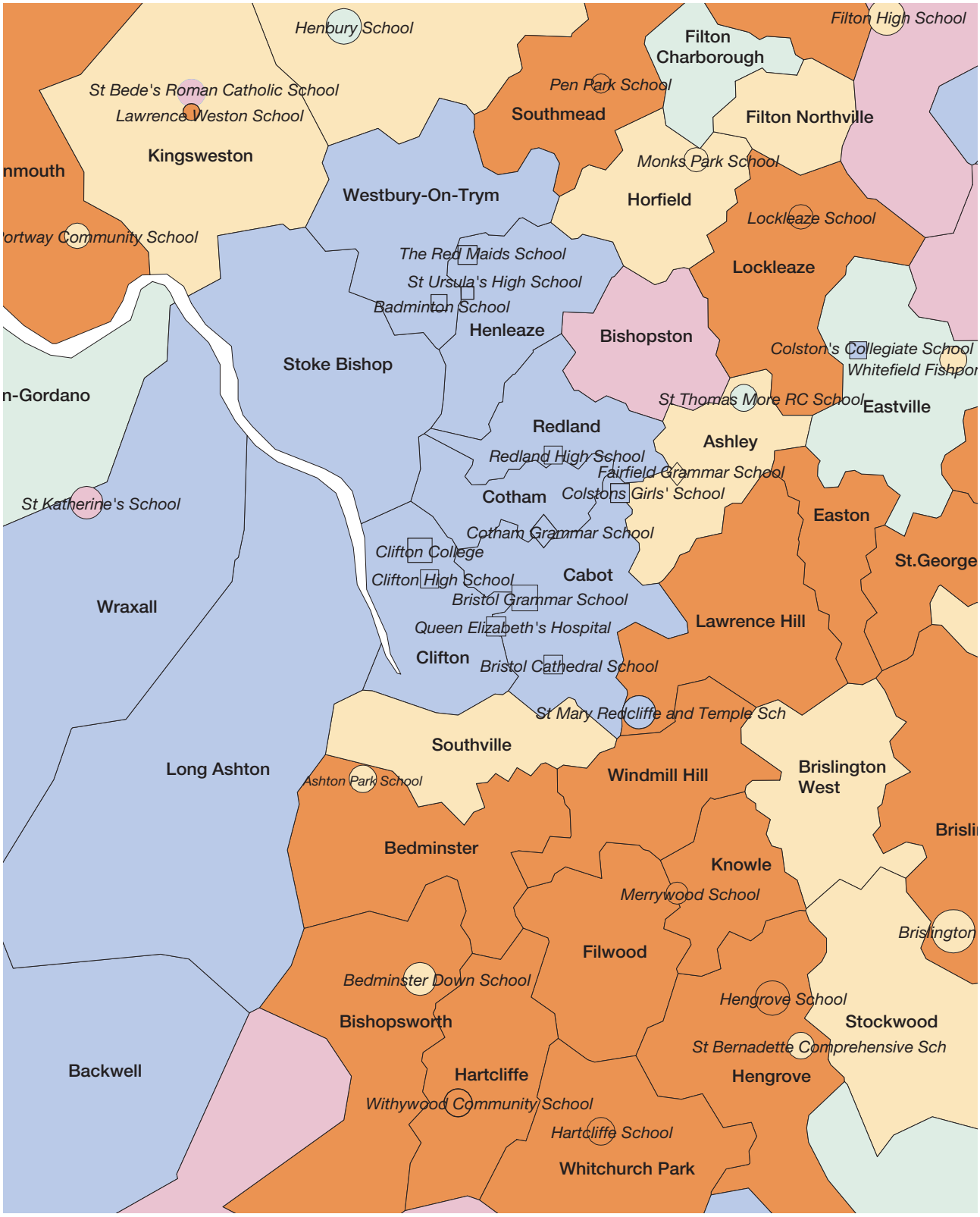
## 2.14 Local patterns of participation

Wards are a good unit for mapping local patterns of participation: they capture a wide range of participation; there is relatively low random error in the estimates of ward participation rates (when cohorts are aggregated); and further work indicates that they are acceptably internally uniform in terms of young participation (covered

in Annex F). The POLAR service (see Annex H) provides a set of ward-based maps that are too large to reproduce in this report. As an example Figure 24 shows an extract from one of the POLAR ward-level maps for Bristol. The ward participation rates are shown as a choropleth, with colours denoting the participation quintile of each ward. Secondary schools are shown in a similar manner, with the colours denoting quintiles of school performance at GCSE for the same cohorts included in the participation measure. Across the country the local geography of participation is complex and resistant to simple generalisation. This extract shows examples of some patterns that are often observed.

- In larger cities, such as Bristol, low (or high) participation wards often occur near to each other to form extensive areas of similar participation. Extremes of ward participation (high or low) are frequently found in the cores of such groups. For example, the ward of Filwood, in the centre of the large low participation area in the south of Bristol, is one of the wards with exceptionally low participation rates noted earlier.
- Extremes of participation can often be found next to each other spatially. This was observed with parliamentary constituencies and the pattern is repeated at local level. For example, in this extract the ward of Southmead, with a YPR(H) of under 10 per cent, is adjacent to the ward of Westbury-on-Trym which has a YPR(H) of around 60 per cent.
- In this particular extract there is a clear spatial association between the performance of secondary schools (measured here by the proportion of children gaining 5 or more GCSEs at grades A-C) and the level of young participation of the surrounding neighbourhoods. For other areas, where a single school serves a small town or patterns of travel to school are complex (such as inner London), this relationship can be less marked.

Figure 24 **Extract of a POLAR ward participation map for Bristol**




**Young participation**

- <16%
- 16% to 24%
- 24% to 32%
- 32% to 43%
- >43%

**School 5AC GCSE**

- <27%
- 27% to 38%
- 38% to 48%
- 48% to 60%
- >60%

*Note: Extract from the POLAR ward-level map of the West of England Learning and Skills Council area (see Annex H). Boundaries derived from data provided with support of ESRC/JISC copyright ED-LINE consortium.*

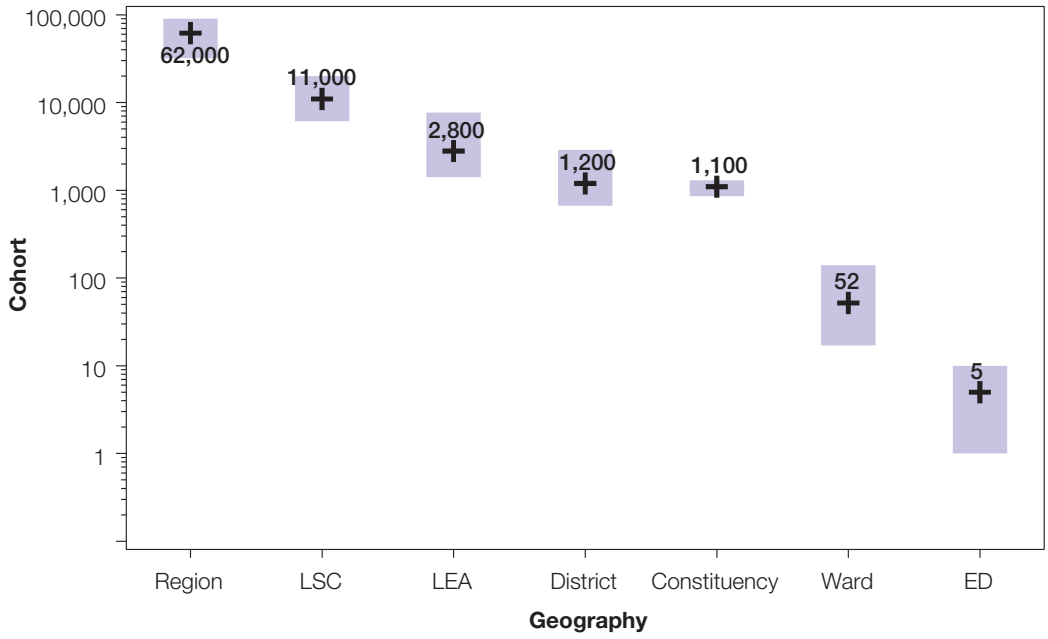
# 3 Results: trends in young participation for small area groupings

The national results have shown the general trend in young participation for cohorts in recent years. The mapping of young participation at different scales has suggested that there is a pronounced geographical inequality in young participation. This section uses methods based on groupings of small areas both to quantify the degree of that inequality and to see how it has changed over the 1994 to 2000 cohorts.

## 3.1 Using small areas to identify disadvantage

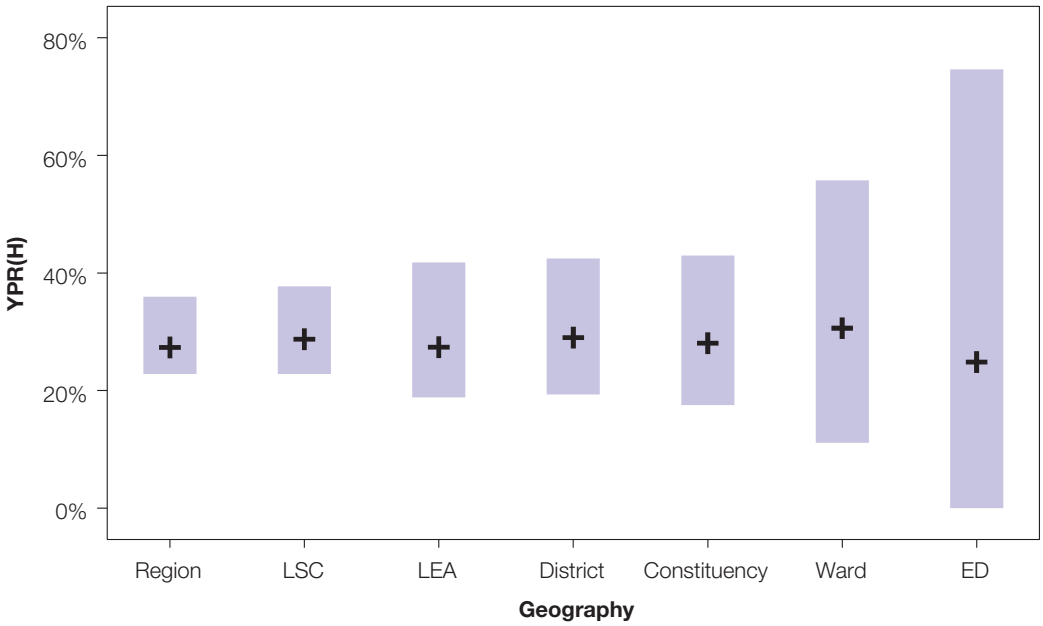
The geographical progression from large regions to small wards in the preceding results section showed that large geographical units usually contain a mixture of high and low participation areas. In these cases the overall participation rate will mostly reflect the division of the population between the advantaged and disadvantaged areas within the larger geography. This leads to two main disadvantages in using these large units to measure trends in young participation through time. First, because the overall rate is an average of high and low participation areas, there will be only limited discrimination between the larger units. Second, if a trend in participation is detected it will be unclear if the changes are a result of changed participation rates or a shift in the balance of population between the advantaged and disadvantaged components of the larger areas. Both of these problems can be reduced by using a finer geography to better identify areas of advantage and disadvantage.

Figure 25 **10th, 50th and 90th percentile cohort size values by geography for England (2000 cohort)**




*Note: Shaded box indicates 10th to 90th percentile range. The crosses show the position of 50th percentile (median). Cohort scale is logarithmic. There are 47 local Learning and Skills Councils (LSCs) in England.*

Figure 26 **10th, 50th and 90th percentile YPR(H) values by geography for England (2000 cohort)**




*Note: Shaded box indicates 10th to 90th percentile range. The crosses show the position of 50th percentile (median).*

Figure 25 shows the distribution of annual cohort sizes for a range of area units, and Figure 26 reports the corresponding range of participation rates observed. These data, and statistics for other geographies, are tabulated in Table 28 in Annex L. It is clear that as the area units become smaller, and increase their potential to identify homogeneous areas of advantage or disadvantage, then their discrimination (indicated by the range of participation rates observed) increases. This suggests that using the smallest possible units will give the greatest precision in partitioning advantaged and disadvantaged areas. Unfortunately there are a number of disadvantages associated with using very small areas.

The most important of these is the problem of the result signal being lost in increasing random noise when the area statistics are formed from very small bases. As the geographical units become smaller, then the mean size of the cohort living in each area decreases. With very small cohort counts, the proportional random variability of the participation rate measurement becomes very large. This means that the measurement of participation becomes an increasingly poor guide to the underlying participation rate in the area. The effect of this can be seen for Census enumeration districts (EDs) in Figure 26. These units are very small, typically having only 5 cohort members a year. This means that, even if the underlying participation rate for an area is 30 per cent it is quite likely (about one instance in six) to measure a participation rate of 0 per cent. This is one of the reasons why the ED participation range in Figure 26 is so wide: it is not only reflecting the range of underlying participation differences but also the substantial random variations caused by the small numbers in each unit.

The level at which this small number randomness becomes tolerable depends on the application. For broad groupings of wards into high or low participation

categories, several cohorts of ward data (giving a typical combined cohort size of around 150) are adequate. To determine if the relative participation rates of high and low participation areas have changed over time requires units with much larger cohort sizes. This is because any change in the relative participation rates of high and low participation groups is likely to be gradual, with very small annual changes. These small changes would be obscured by random variations for individual small units, such as wards, that do well at partitioning advantaged and disadvantaged neighbourhoods. Using the larger contiguous geographical areas – such as regions – provides the required cohort size to detect small changes, but their mixture of advantaged and disadvantaged areas (and the possibility of their relative shares changing) means they cannot adequately discriminate between advantaged and disadvantaged groups.

## 3.2 Grouping small areas – quintile analysis

A compromise solution to these problems is to construct large groups by aggregating a collection of much smaller areas (such as wards or geodemographic groupings of enumeration districts). This combines the discrimination between advantaged and disadvantaged neighbourhoods offered by small areas, with the large cohort size required to detect small participation changes[15]. The method used for this set of results is based upon grouping the small areas to form five quintiles each holding 20 per cent of the cohort. This has four main stages.

a. The first step is to choose the small geographical unit. This can be a contiguous physical area, such as a parliamentary constituency or ward, or a pre-aggregated collection of small areas that need not be contiguous, such as the clusters from a geodemographic classifier.

b. These geographical units are then ranked by the value of a continuous variable. Usually if the cohort size for the units is adequate then the young participation rate will be used for the ranking. With very small cohort sizes this participation rate will have a high proportion of random variability, which will decrease the discrimination between areas (though, if the cohort base is the entire period, no bias for measuring group trends will be introduced). Other area statistics, such as a deprivation index, may be used to produce a ranking that is not directly dependent on the participation measure.

c. The ranked areas are then assigned to quintiles so that each quintile holds 20 per cent of the cohort.

d. The young participation rate for each quintile is then calculated, and the differences between the quintiles and any trends are examined.

The choice of the number of groups used is pragmatic. Many of the trends in the report remain when just three groups are used. Using more than five groups gives extreme groups that are further polarised, but results can become more confusing to interpret. Using five groups means that each group represents a substantial share of children and allows the groups to be thought of as a simple series – very low, low, average, high, very high. People working with disadvantaged areas report that this classification is useful.

The interpretation of the quintiles depends on their formation. If the ranking and quintile assignment is based on a ranking measure that is fixed for the whole period, such as the period participation rate or a fixed area statistic (for example, from the 1991 Census) then the grouping of areas is also fixed for the period. The interpretation is then, for example, to see how the participation of that set of areas with the lowest participation over the period has changed relative to the set of areas with the highest participation over the period. One disadvantage of this is that although the quintiles contain equal shares of the cohort for the whole period this may not be true for any particular cohort (this is examined in Annex B).

If the ranking statistic is available for each cohort (for example, young participation) then there is an alternative of forming the quintiles within each cohort. In this case the interpretation is that the quintiles represent the most advantaged or disadvantaged 20 per cent of areas for each cohort. The advantage of this is that the quintiles always have the same share of the cohort, and the results track any change in the geographical location of advantage and disadvantage through time. The disadvantage is that the set of areas forming each quintile is not constant through time so that the results cannot be readily mapped or corrections calculated for cohort estimate bias (see Annex B). Further, for smaller units such as wards these *per cohort* quintiles can exaggerate the underlying inequality compared to the period quintiles, since the smaller annual cohort base means that the greater random variation will make the quintiles more extreme. If the cohort size changes dramatically during the period, the resulting change in unit cohort size can potentially affect the apparent participation inequality as the scale of the random variability changes across the time series.

## 3.3 Choice of ranking measure

In general this report uses whole period participation quintiles. The reason is that this work, through the measure of HE participation rates, looks at the distribution of educational advantage. Given a concern about the inequality of this distribution, it is reasonable to be most concerned about those areas experiencing the greatest educational disadvantage and how this degree of disadvantage is changing through time. In this case, using young participation as the area ranking measure identifies the most disadvantaged areas directly and consistently. Using another ranking measure – such as a deprivation index – on the assumption that it is a proxy for educational disadvantage, may not identify the most disadvantaged wards (depending on the strength of the assumed relationship) or may have, for example, a regional bias (explored in Annex J).

However, there are particular questions where the ranking by participation may not be the best solution. Suppose that the *only* research interest was to see whether the replacement of student support grants with loans had affected the relative participation of two distinct groups in the population: namely those who would have been eligible for grants and those who would not have been eligible. The best area grouping to use for this question is one that offers the greatest partition

between the eligible and ineligible cohorts. If the only criterion for eligibility for a grant was to receive means-tested benefits, then ranking areas by, say, a measure of the proportion of children in households supported by means-tested benefits should provide a better partitioning, and therefore greater resolution, of eligible and ineligible groups than the whole period participation rate. Note that in this example we are no longer concerned with inequalities in participation (indeed the two groups could have identical participation rates), only in the relative changes experienced by these groups through time.

To provide this kind of perspective on the participation results, measures from both the 2000 Index of Multiple Deprivation (measuring adult and child material deprivation) and the 1991 Census (measuring parental educational level) are used in the results.

## 3.4 Choice of geography

The choice of geography is a balance between resolution in identifying advantaged and disadvantaged areas and the reliability of the ranking statistic. When the ranking statistic is not young participation itself, then the level of geography at which the ranking statistic is available may dictate the choice (for example, the 2000 Index of Multiple Deprivation is not available below electoral ward level). If the results are to be used in practical situations, such as targeting initiatives to increase participation, then larger contiguous geographies such as wards or local education authorities (LEAs) may be more suitable than very small areas, such as EDs or their non-contiguous aggregates to geodemographic groups. There are no definitive answers to the choice of geography. This section uses a range of discrete and aggregate geographies to avoid the results being a product of a particular grouping. In general census wards ranked by young participation for the whole period appear to offer a good balance between the competing requirements of geographical resolution and ranking statistic reliability. This grouping is used to examine, for example, the differing nature of high and low participation areas later in the report.

## 3.5 Choice of participation measure

The group participation trends mainly use the YPR(H) statistic. A key aim of the group analysis is to detect any changes in participation through time; the YPR(H) results are best suited to this as they cover seven cohorts (1994 to 2000). The main disadvantage of not using a broader measure, such as the YPR(A), is that changes in participation at institutions other than HEIs might be missed. To guard against this potential misinterpretation, some results are also reported for the YPR(A) series. These confirm the findings of the national results, that for England participation trends can be adequately measured using the YPR(H) statistic. The main concern of this report is participation inequality in England so all the group results refer to England unless otherwise stated. Some group results for Scotland are included, primarily for the contrast of the different student support arrangements for Scottish students in later cohorts (described in Annex G). The small adjustment

(described in Annex B) that corrects residual bias in the cohort population model for groups is applied to the results unless otherwise stated.

One concern with interpreting results of area analysis through time is that some areas may have changed substantially over the period, so that observed changes in participation are caused by a change in the nature of the residents of an area rather than in participation behaviour. The most significant changes in an area are large new residential developments. The method for estimating the cohort (see Annex A) provides for identifying areas that have experienced large changes in the number of children since 1991; such areas are removed from all the group analyses.

The trends reported in the group results were tested for their sensitivity against changes to the method – such as using a different number of groups, using the mid-year controlled cohort estimates, and not applying the population correction. Aside from the expected effects (for instance, using a larger number of groups results in a greater inequality ratio) none of the general trends or results shown were significantly affected by these variants. As noted earlier, five groups are used because they mostly capture the patterns shown by larger numbers of groups (which would result in more confusing graphs) and give a readily interpretable classification. The effect on the group trends of using broader measures of entrants (for example including part-time and diploma students) is investigated in Annex C with the conclusion that the group trends shown by the YPR(H) statistic are not significantly changed when using these broader measures.

## 3.6 Format of the quintile analysis results

As noted earlier, one advantage of this method of group analysis is that a range of area unit and classification schemes can be used, and the results are directly comparable because they always refer to the same shares (quintiles) of the cohort. To take advantage of this comparability, the results are presented in the following standardised format.

a. Absolute rates for the quintiles through time. This shows the range of rates by this grouping and whether these relationships are changing in a material way across the cohorts.

b. Absolute increases in group rates through time. This plot sets the participation rate for each group as zero for the first cohort, and shows for subsequent cohorts the absolute difference, in percentage points, of the participation rate from the first cohort base. For the main YPR(H) results covering the 1994 to 2000 English cohorts, this chart uses a constant 0 to 5 per cent increase scale to allow direct comparison of the magnitude of changes between grouping systems.

c. Proportional increase in group rates through time. The participation rate of the first cohort for each group is defined as 1, and the rates for subsequent cohorts indexed against this. The vertical axis on these plots is adjusted to the scale of the proportional changes to magnify any trends over the period, so that they can be seen (regardless of whether they are practically significant or not). This measure needs to be considered together with (b) as it frequently shows that

substantial *proportional* rises in the rate for the lowest participating groups can be very small in *absolute* terms (much smaller than lesser proportional changes in high participation groups).

d. Ratio of highest and lowest quintile rates ('inequality ratio'). This is an indicator of the participation inequality recorded by the particular grouping used and how it is changing through time. This simple ratio is used because it captures the relative inequality between the highest and lowest participating groups (together representing a substantial 40 per cent of the cohort), and because it is sensitive without being unstable and is directly interpretable.

The lowest participating quintile is referred to as the first quintile, the highest as the fifth quintile. For uniformity when other ranking measures are used (such as child poverty) the first quintile becomes 'most disadvantaged' and the fifth quintile is the 'least disadvantaged'.

## 3.7 Index to quintile analysis results

The group results start by using parliamentary constituencies to look at changes in large area inequalities. This is followed by a series of results using small areas (census and electoral wards) and small area aggregates (geodemographic classifiers).

| Participation statistic | Geographical unit | Ranking variable | Country | Section |
|---|---|---|---|---|
| YPR(H) | 1997 parliamentary constituencies | Period YPR(H) | England | 3.8 |
| YPR(H) | 1991 Census wards | Period YPR(H) | England | 3.9 |
| YPR(H) | 1991 Census wards | Cohort YPR(H) | England | 3.10 |
| YPR(H) | 1991 Census wards | Period YPR(H) | Scotland | 3.11 |
| YPR(A) | 1991 Census wards | Period YPR(A) | England | 3.12 |
| YPR(A) | 1991 Census wards | Period YPR(A) | Scotland | 3.13 |
| YPR(H) | 1991 Census wards | 1991 Census HE-qualified adults | England | 3.14 |
| YPR(H) | 1998 Electoral wards | IMD2000 | England | 3.15 |
| YPR(H) | 1998 Electoral wards | IMD2000 – child poverty | England | 3.16 |
| YPR(H) | 1991 Census EDs | Period YPR(H) | England | 3.21 |
| YPR(H) | 1991 Census EDs | 1991 Census HE-qualified adults | England | 3.22 |
| YPR(H) | ACORN clusters | Period YPR(H) | England | 3.18 |
| YPR(H) | MOSAIC clusters | Period YPR(H) | England | 3.19 |
| YPR(H) | Super Profile clusters | Period YPR(H) | England | 3.20 |
| GCSE 5AC | Secondary schools | Cohort GCSE 5AC | England | 3.23 |
| YPR(H)-Women | 1991 Census wards | Period YPR(H) – Women | England | 3.24 |
| YPR(H)-Men | 1991 Census wards | Period YPR(H) – Men | England | 3.25 |

## 3.8 Parliamentary constituencies (1997) ranked by YPR(H) – England

Figure 27(a) **YPR(H) period participation quintiles on parliamentary constituencies**

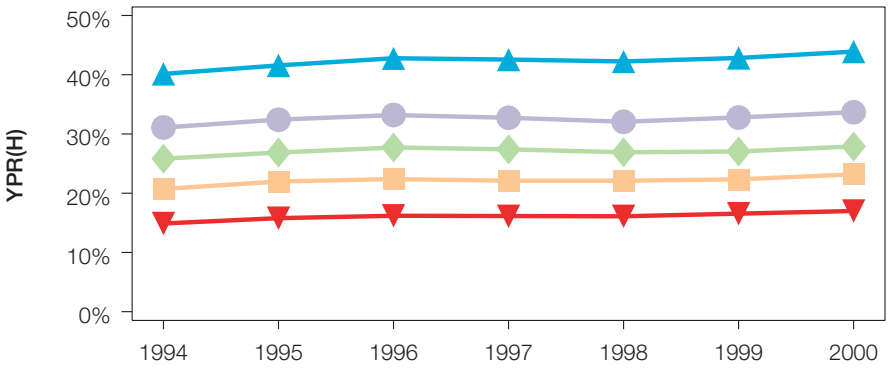



Figure 27(b) **Absolute change since 1994**

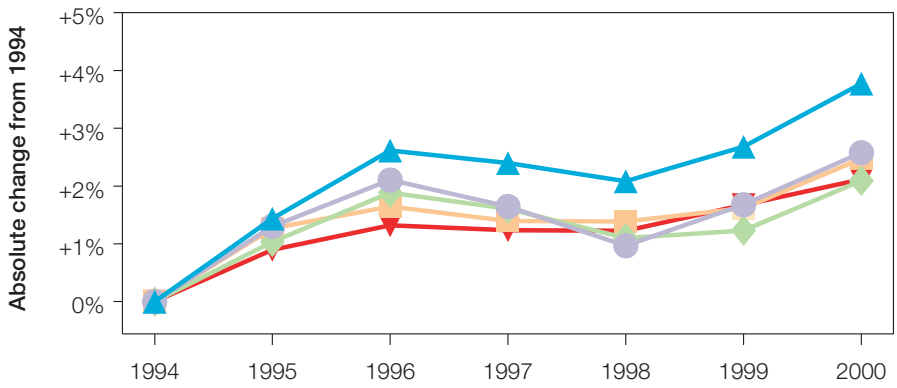



Figure 27(c) **Relative change since 1994**

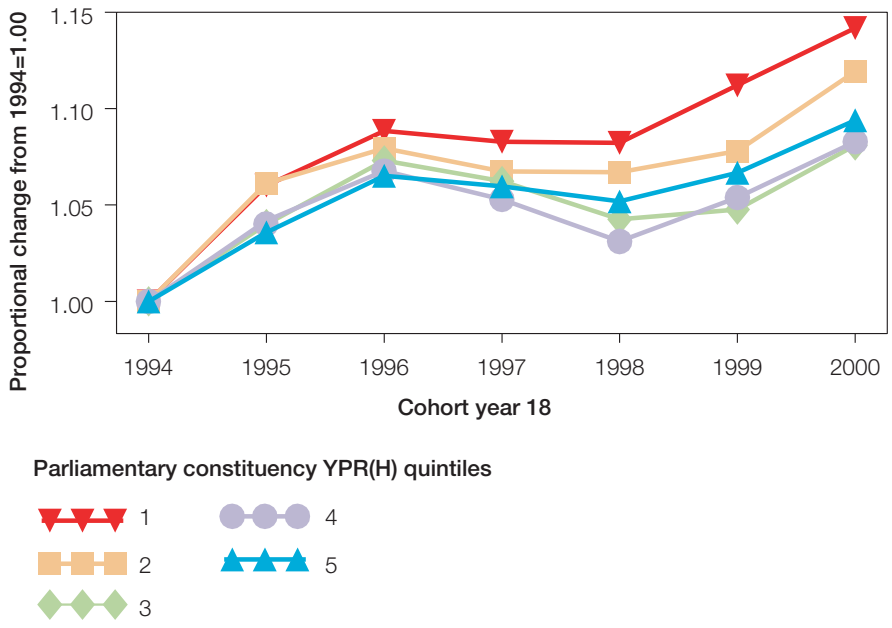
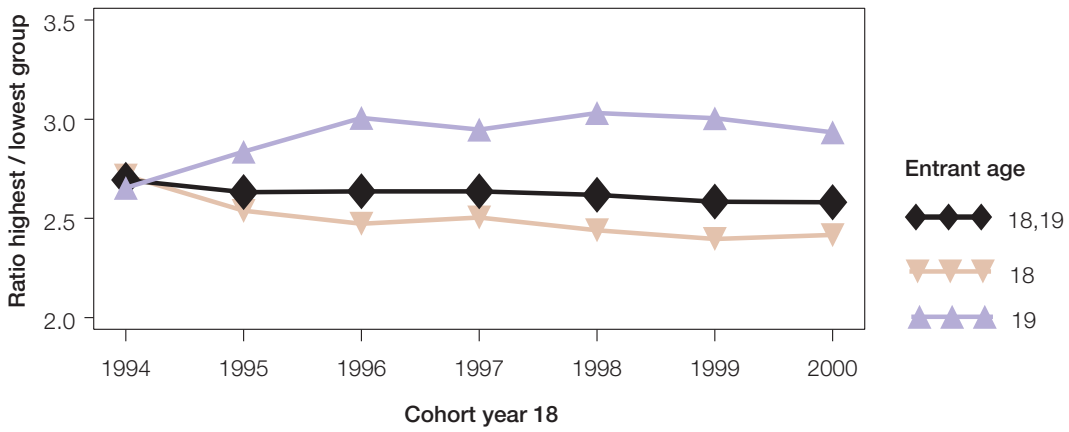


Figure 27(d) **Ratio of YPR(H) of fifth to first quintile**




The usefulness of parliamentary constituencies in mapping the large scale geography of participation was shown earlier (see Figure 21). Given that the neighbourhoods of local participation inequalities appear to be of the size of wards (for example, see Figure 24) we would not expect large geographical units such as parliamentary constituencies to be particularly homogeneous or to offer good discrimination between high and low participation areas. Nevertheless they do exhibit a wide range of participation rates (see Figure 20). When formed into participation quintiles this is reflected in an average YPR(H) for the first quintile of 16 per cent compared to 42 per cent for the fifth quintile, giving an inequality ratio of 2.7, with very little change over the period.

Figures 27(a)-27(d) show that the ordering and participation inequality of the quintiles have not changed much over the period. The participation of the third to fifth quintiles experienced modest absolute declines for the 1997 and 1998 cohorts. In proportional terms the first and second quintiles have experienced rises of 12-14 per cent since 1994, more than the 8-9 per cent seen by the third to fifth quintiles. Most of the quintiles have averaged absolute increases of 2-2.5 percentage points, with the exception of the fifth quintile which saw absolute growth of nearly 4 percentage points.

## 3.9 Census wards (1991) ranked by YPR(H) – England

Figure 28(a) **YPR(H) period participation quintiles on 1991 Census wards**

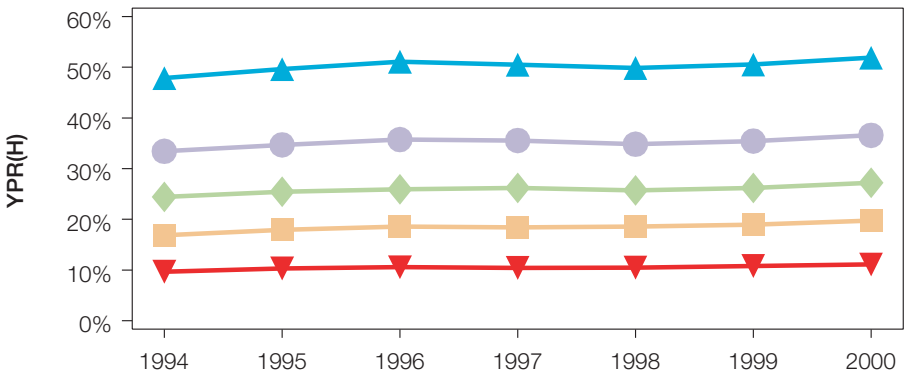



Figure 28(b) **Absolute change since 1994**

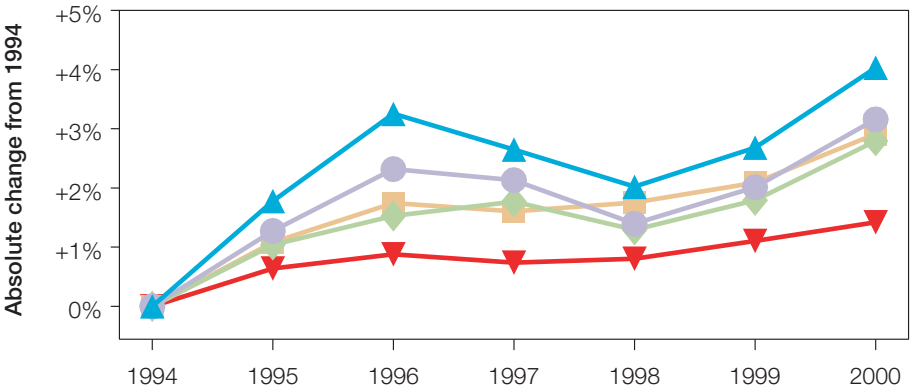



Figure 28(c) **Relative change since 1994**

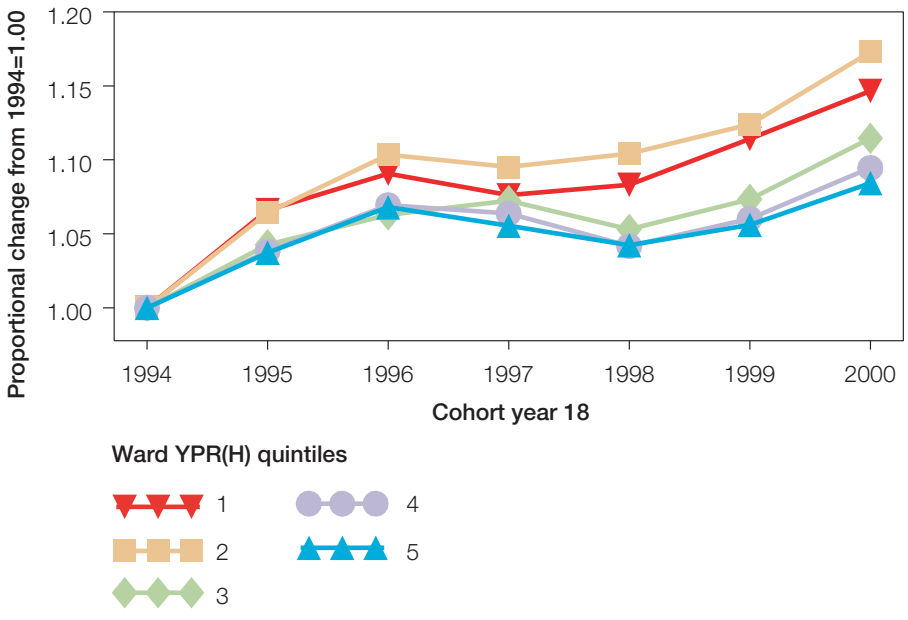
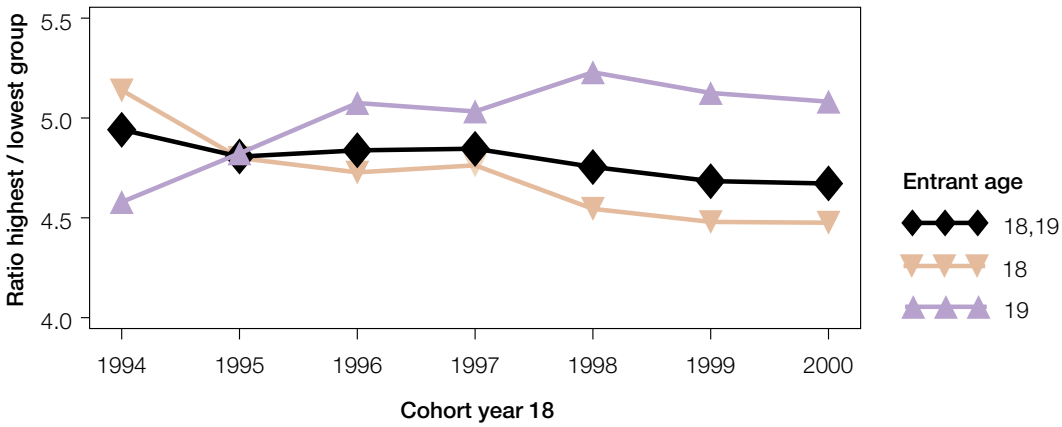


Figure 28(d) **Ratio of YPR(H) of fifth to first quintile**




Census wards have a wide distribution of participation rates (Figure 22) and a good combination of precision, internal homogeneity and practical utility that makes them useful for mapping local patterns of participation. The discrimination between high and low participation areas using wards is reflected in the YPR(H) quintiles: the first quintile has an average rate of around 10 per cent and the fifth quintile averages around 50 per cent. This gives an inequality ratio averaging 4.8, with a slight downwards trend over the period. This decline is driven by entry at 18 (inequality at entry 19 has actually increased over the period) and is concentrated in the 1995, 1998 and 1999 cohorts.

Figure 28(a) shows that overall both the rates and relative position of these groups has stayed broadly constant over the period. With the magnification afforded by the plot of the small absolute percentage point changes in Figure 28(b), some differences in participation trends between the quintiles become evident. Participation for the fifth quintile grows very rapidly for the 1995 and 1996 cohorts, at just under 2 percentage points per cohort. Had this participation growth continued at this pace then the fifth quintile for the 2000 cohort might have had a YPR(H) of nearly 60 per cent, a 10 percentage point increase over the period. However, this did not occur: the 1997 and 1998 cohorts show a reversal of this growth with a reversion to a more modest rate of growth for the 1999 and later cohorts, leading to an absolute increase over the period of 4 percentage points.

This 4 percentage point rise is nearly three times that of the 1.4 percentage point absolute growth seen by the first quintile which, in contrast to the fifth quintile, experienced stalled growth for the 1997 and 1998 cohorts rather than a decline. The first and second quintiles show greater proportional growth, of 15-17 per cent compared to 8-11 per cent for the upper three quintiles. On this grouping the second quintile shows a particularly strong rise of 17 per cent, to end the period 3 percentage points higher. Tabular results for these quintiles are given in Table 29 (Annex L).

## 3.10 Census wards (1991) ranked by per cohort YPR(H) – England

Figure 29(a) **YPR(H) cohort participation quintiles on 1991 Census wards**

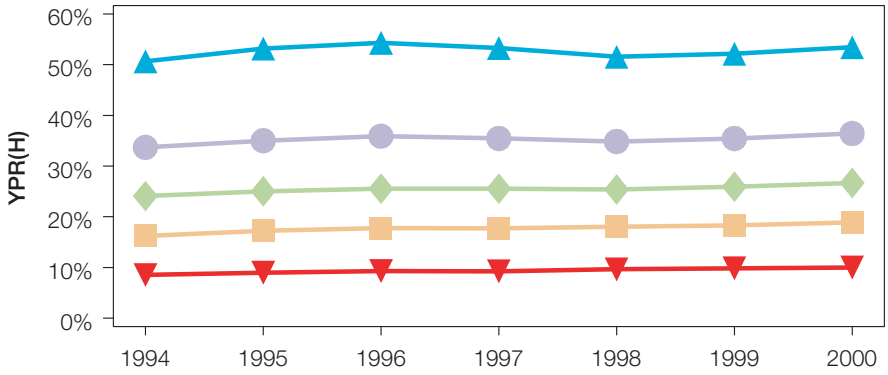



Figure 29(b) **Absolute change since 1994**

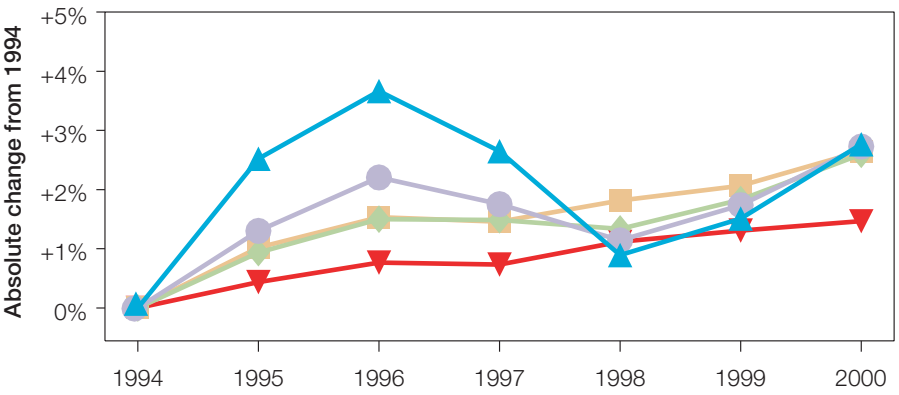



Figure 29(c) **Relative change since 1994**

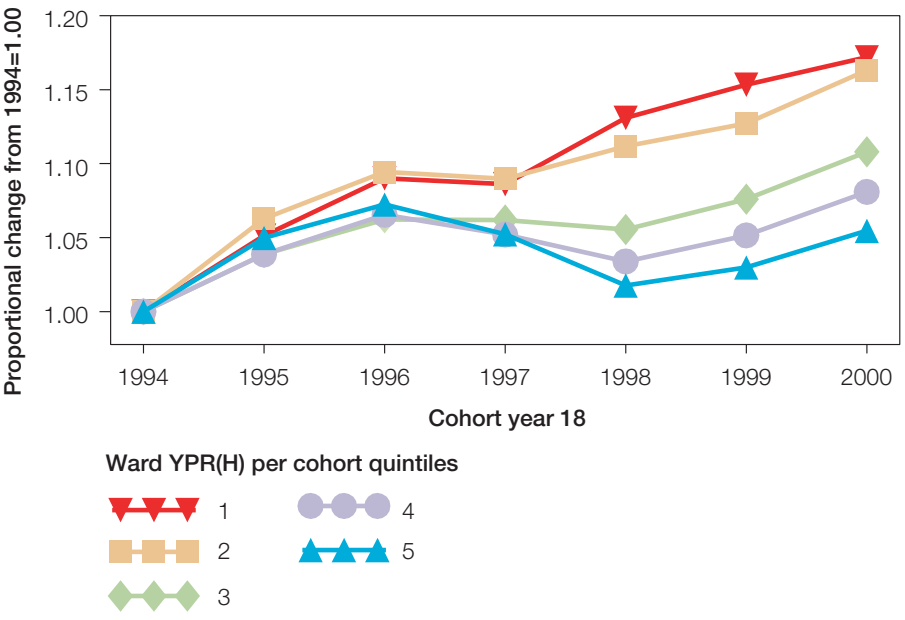
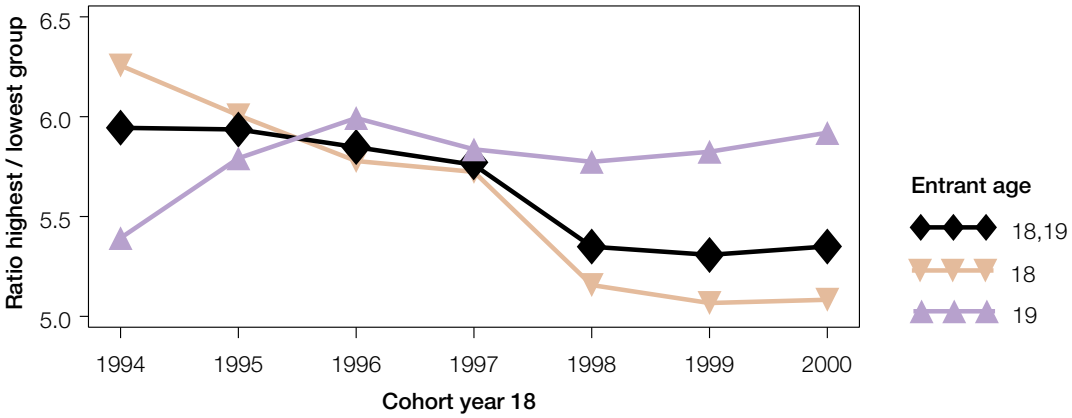


Figure 29(d) **Ratio of YPR(H) of fifth to first quintile**




A concern with using a fixed grouping of areas (such as the all-period YPR(H) quintiles) to look at participation trends is that the nature of these fixed groups could be changing. For instance, suppose that the overall degree of real inequality did not change, but some low participation areas improved and an offsetting number of average participation areas deteriorated. Then, by using fixed area groupings, there would be an apparent diminution of overall inequality whereas the true situation is that the geography of participation inequality has changed while the degree of participation inequality has remained constant. A related concern is that the relative cohort share of the quintiles could be changing through time[16].

Both these concerns can be partly addressed by constructing quintiles of the cohort for each cohort year. By having a different set of areas for each cohort, the first quintile always refers to the most disadvantaged 20 per cent of the cohort. One drawback of this approach is that because the quintiles are formed on a (seven-fold) smaller cohort, random fluctuations become more important and will exaggerate the participation extremes. Additionally because the set of areas is not fixed it is not possible to apply the post-grouping corrections to cohort estimates.

Figures 29(a) to 29(d) show the pattern of cohort YPR(H) ward quintiles for England that are exactly analogous to the whole-period quintile results – Figures 28(a) to 28(d)) – except that the quintiles are formed discretely for each cohort rather than for the period as a whole. As expected from the smaller cohort counts, these cohort quintiles are more extreme: the first quintile is at 9 per cent (around 1 percentage point less than before) and the fifth quintile is at 53 per cent (3 percentage points higher). This gives an increased inequality ratio of 5.6 (from 4.8 previously), which falls from 5.9 to 5.4 over the period. The major patterns seen for the whole-period quintile groupings are replicated in the per cohort quintile results. This suggests that the trends observed in the whole-period quintiles are not caused by the changing nature of some areas or different quintile sizes between cohorts. The cohort quintile results do differ in that they record a more extreme inequality and show a marked divergence in proportional growth rates for the 1998 cohort. Both these differences are to be expected from the smaller cohort size and absence of post-grouping cohort estimate corrections.

## 3.11 Census wards (1991) ranked by YPR(H) – Scotland

Figure 30(a) **YPR(H) participation quintiles on 1991 Census wards (Scotland)**

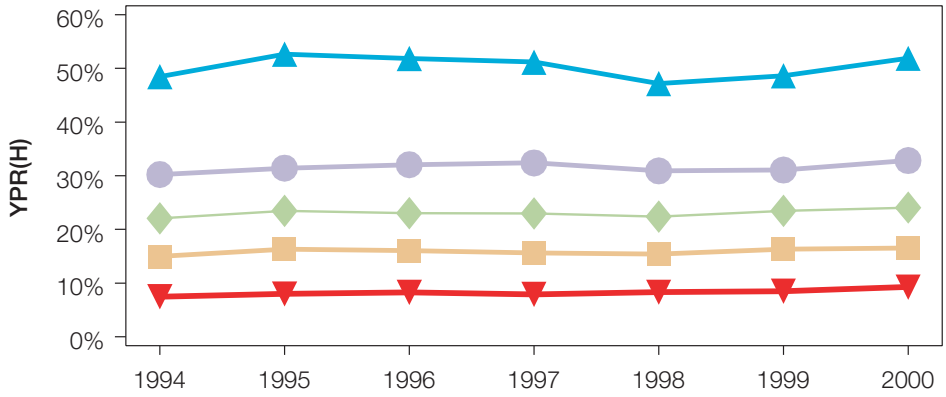



Figure 30(b) **Absolute change since 1994**

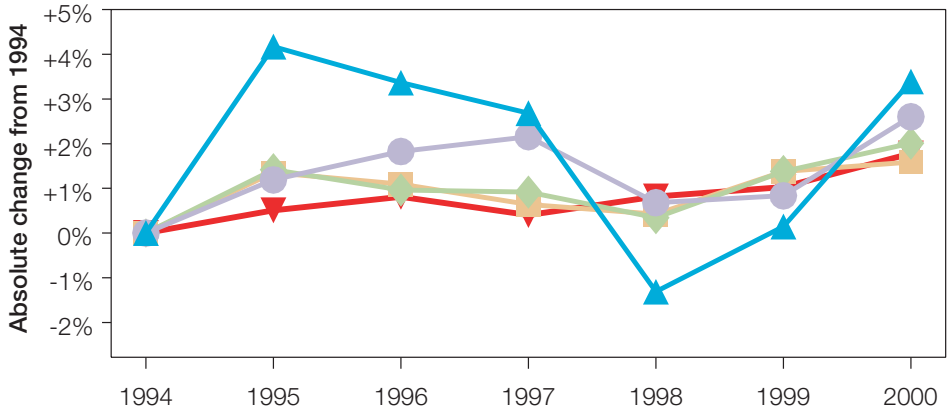



Figure 30(c) **Relative change since 1994**

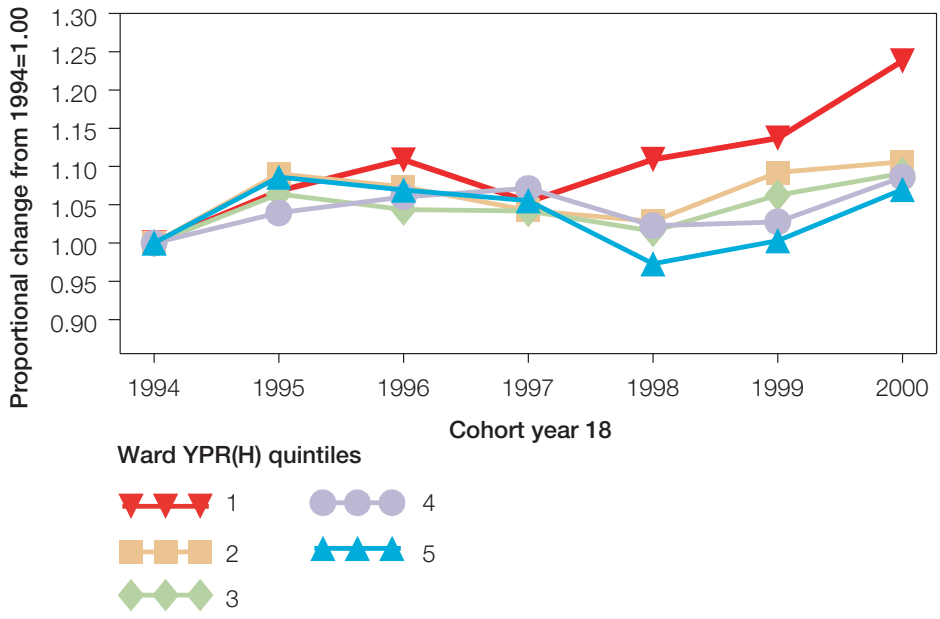
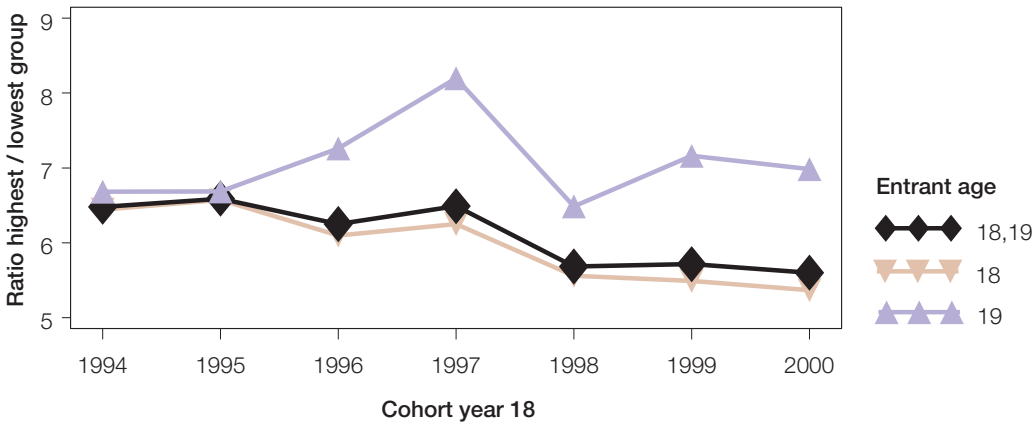


Figure 30(d) **Ratio of YPR(H) of fifth to first quintile**




The typical cohort size for Scotland is around 60,000 – much smaller than the 500,000 to 600,000 cohort in England and comparable to regions such as Yorkshire and the Humber. This smaller cohort makes the results more variable and the post-grouping correction of cohort estimates cannot be successfully applied. For these reasons, and because the YPR(H) only accounts for about two-thirds of the participation activity in Scotland (see Figure 5), this Scottish YPR(H) analysis should be regarded cautiously.

Despite excluding the substantial number of HE entrants to FEIs in Scotland, the YPR(H) rate for the fifth quintile averages 50 per cent, the same as England. The YPR(H) for the first quintile is lower at 8 per cent (compared to 10.5 per cent for England). This leads to a greater average inequality ratio of 6.1, which falls noticeably from 6.5 to 5.6 over the period. Figure 30(a) emphasises that the very high YPR(H) of the fifth quintile puts it notably clear of the other groups. The rank order of the groups has stayed constant.

The fine detail figures show a noisy picture compared to England, probably reflecting the smaller cohort size. Two features stand out. The advantaged fifth quintile peaks early (1995 cohort) in the period and then experiences a decline, especially sharp for the 1998 cohort, before recovering from the 1999 cohort onwards. This is similar to what was seen for England in Figure 28(c), though the Scottish rise is earlier and the swings greater. Proportionally all the Scottish quintiles behave in a similar fashion until the 1998 cohort, which sees the first quintile gain and the fifth quintile decline, resulting in a drop in inequality in that year (likely to be due, at least in part, to the absence of the post grouping cohort correction). The first quintile continues to rise, with a particular jump for the 2000 cohort, to end proportionally around a quarter higher than in 1994. However, underlining the need for caution with these data, the small cohort size and low participation rate, the dramatic rise for this quintile equates to only an average extra 30 entrants per cohort.

## 3.12 Census wards (1991) ranked by YPR(A) – England

Figure 31(a) **YPR(A) participation quintiles on 1991 Census wards (England)**

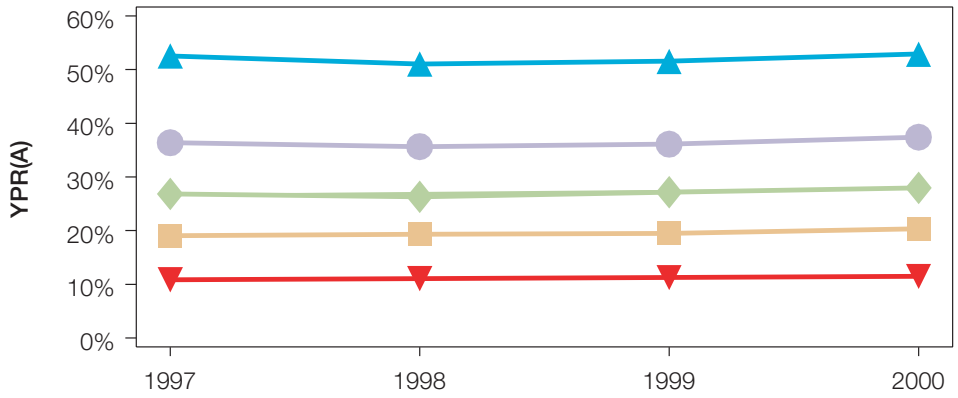



Figure 31(b) **Absolute change since 1997**

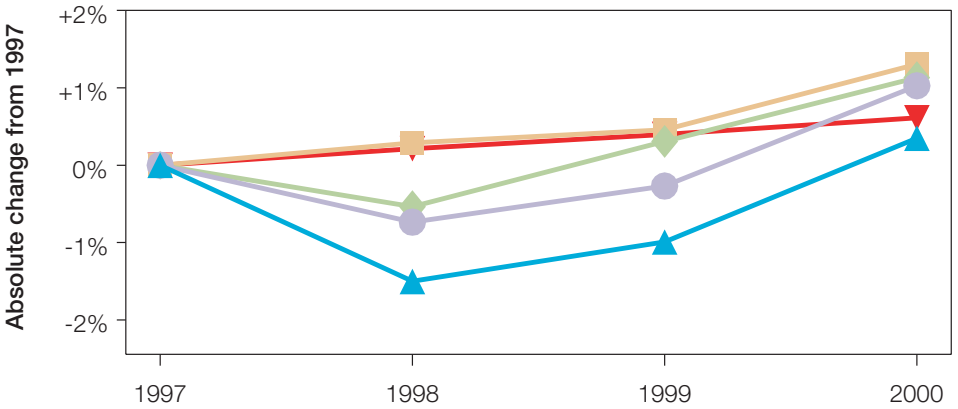



Figure 31(c) **Relative change since 1997**

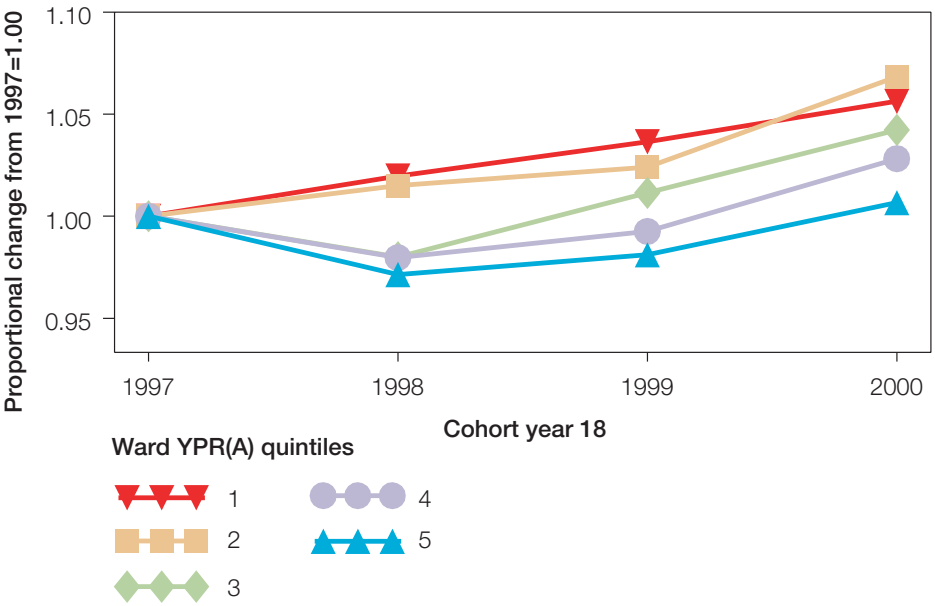
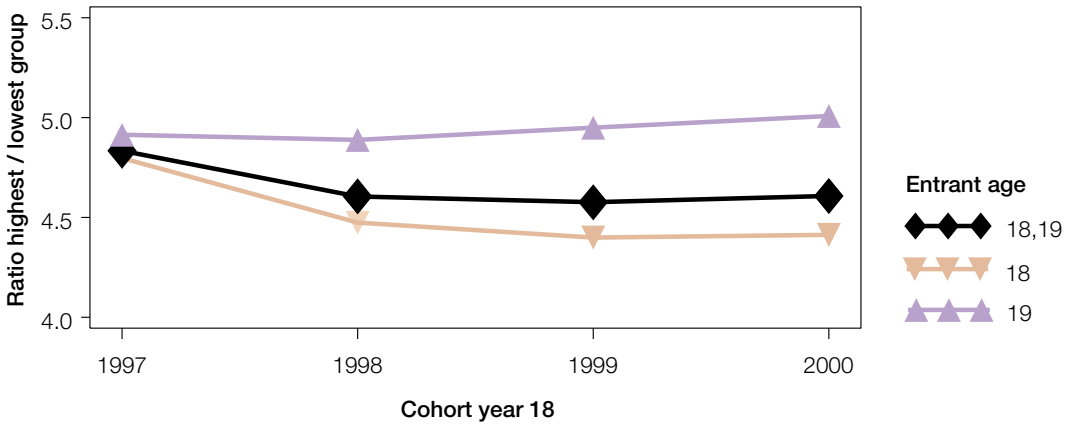


Figure 31(d) **Ratio of YPR(A) of fifth to first quintile**




In England young HE participation at institutions not recorded on the HESA record forms a very small part of overall young participation (see Figure 5). Therefore, as expected, the YPR(A) quintile results for England show a very similar pattern to the quintile results using the YPR(H). Compared to the YPR(H) results, the YPR(A) is around half a percentage point higher for the first quintile and 1 percentage point higher for the fifth quintile. This does reduce the inequality ratio (4.6 for the 2000 cohort compared to 4.7 for the same cohort on YPR(H) quintiles) but not by much. The detailed charts show that the reduction in inequality ratio for the 1998 cohort is caused by an apparent relative decline in participation for the higher participating quintiles, while the lower two quintiles increased at a steady pace. For the 1999 and later cohorts the participation for each group grows at approximately the same proportional rate, so that the fourth and fifth quintiles take the majority of the absolute growth in participation from that date and the inequality ratio does not change.

## 3.13 Census wards (1991) ranked by YPR(A) – Scotland

Figure 32(a) **YPR(A) participation quintiles on 1991 Census wards (Scotland)**

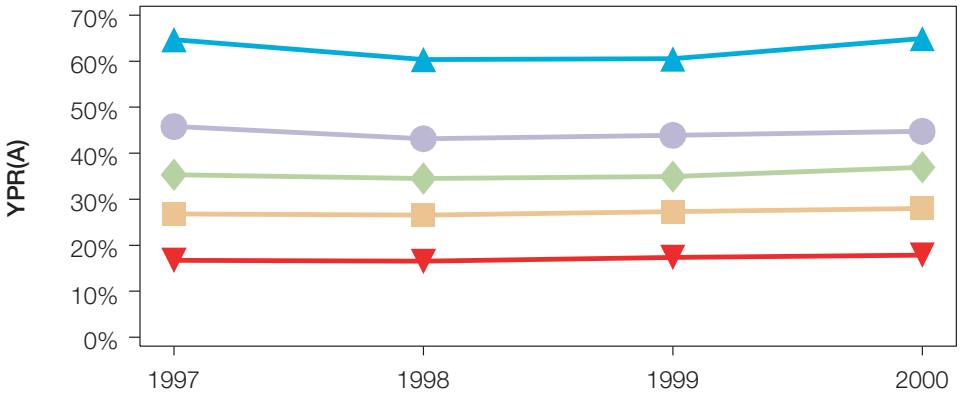



Figure 32(b) **Absolute change since 1997**

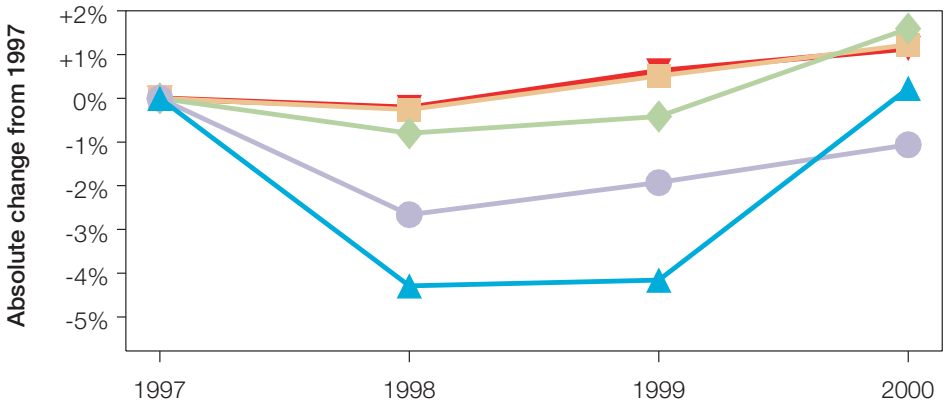



Figure 32(c) **Relative change since 1997**

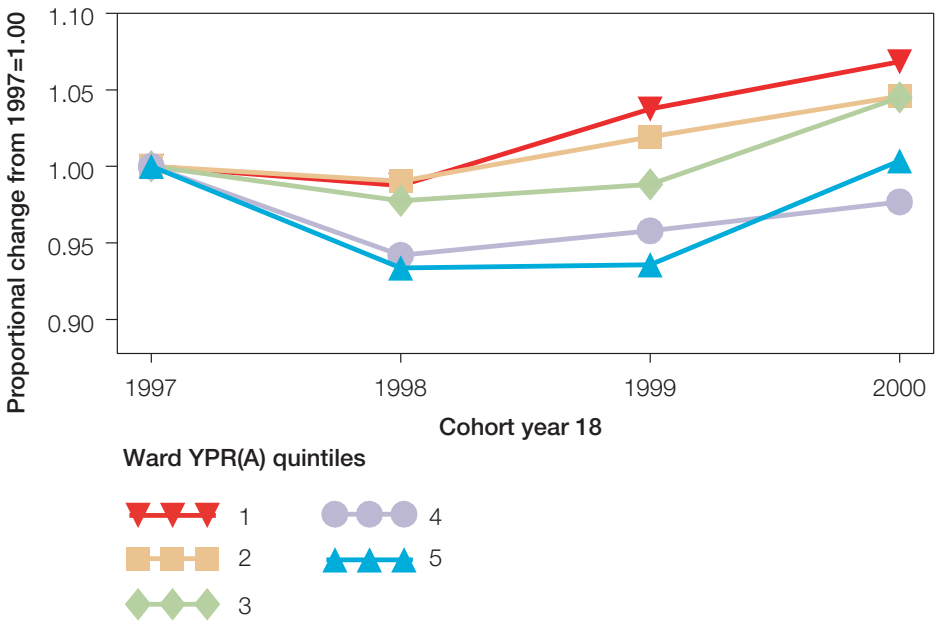
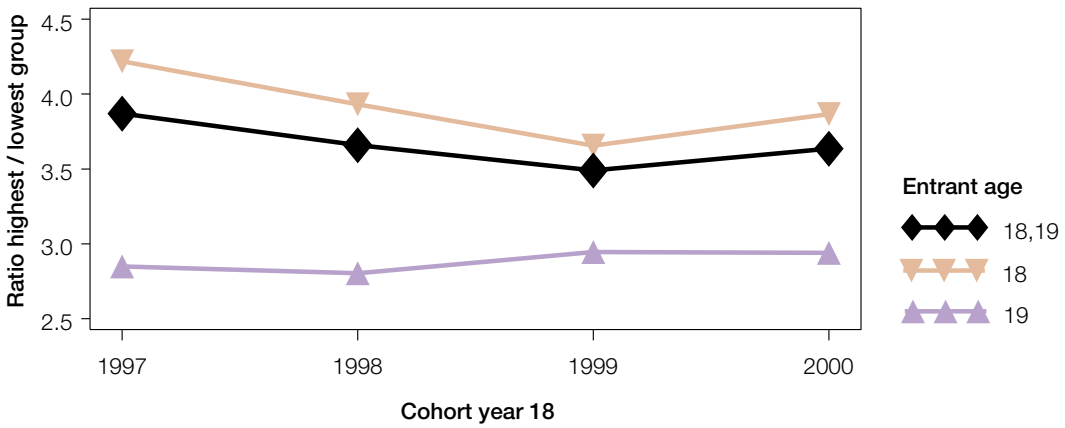


Figure 32(d) **Ratio of YPR(A) of fifth to first quintile**




In contrast to England, young participation through HE courses in FEIs is important for Scotland. Reflecting this, the YPR(A) for each quintile is substantially higher than the YPR(H), especially for disadvantaged areas.

The fifth quintile has a very high participation rate, 65 per cent for the 2000 cohort. This is 13 percentage points (25 per cent proportionally) higher than the YPR(H) Scottish fifth quintile; and 12 percentage points higher (22 per cent proportionally) than the YPR(A) English fifth quintile. For the first quintile the absolute increase from the Scottish YPR(H) quintile is smaller, at 9 percentage points, but this is a near doubling of the YPR(H) figure and over 50 per cent higher than the English YPR(A) first quintile. This shows that, in Scotland, participation through FEIs is both substantial and significantly more equitable than participation through HEIs. In England, although the participation through FEIs is more equitable (comparable in profile to that of FEI participation in Scotland), it is of minor importance so that its inclusion does not affect the quintile analysis much. Proportional increases in young participation upon moving from the YPR(H) to the YPR(A) measure range from 3 per cent for the first quintile to 2 per cent for the fifth, compared to over 90 per cent and 25 per cent respectively for the Scottish quintiles[17].

These effects lead the inequality ratio based on the combined YPR(A) measure – 3.6 for the 2000 cohort – to be much lower than for the YPR(H) quintiles, and also lower than the YPR(A) based quintiles for England (4.6). This is a reversal of the case for the quintiles based on YPR(H) alone, where Scottish participation was more unequal than English YPR(H).

The pattern of quintile participation trends over the 1997 to 2000 cohorts is similar to that observed for the English YPR(A) quintiles. The overall pattern of relative stability is qualified by substantial proportional and absolute falls for the fourth and fifth quintiles for the 1998 cohort, followed by a sharp recovery for the fifth quintile, in particular for the 2000 cohort. The first, second and third quintiles end the period a proportional 5-7 per cent higher than at the start – a similar level of improvement to that shown by the English YPR(A) quintiles.

## 3.14 Census wards (1991) ranked by the proportion of HE-qualified adults – England

Figure 33(a) **YPR(H) for 1991 HE-qualified adults quintiles on wards**

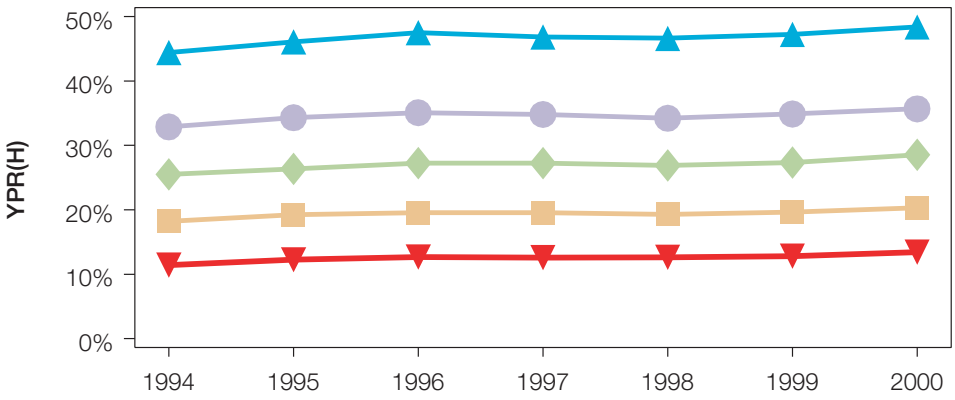



Figure 33(b) **Absolute change since 1994**

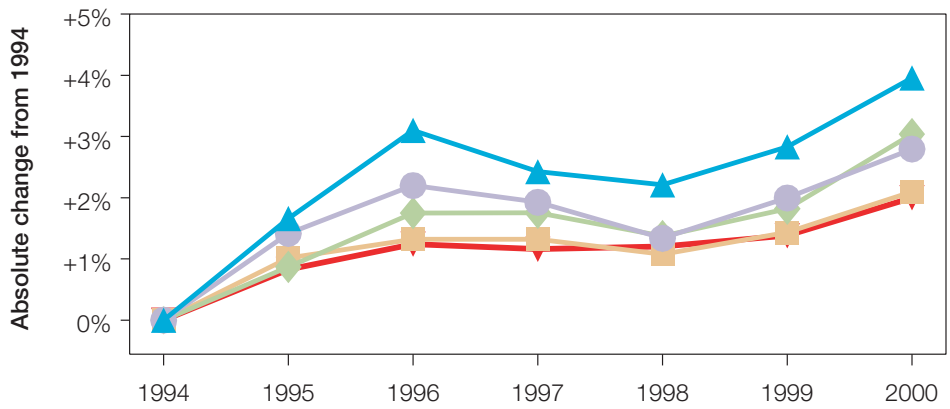



Figure 33(c) **Relative change since 1994**

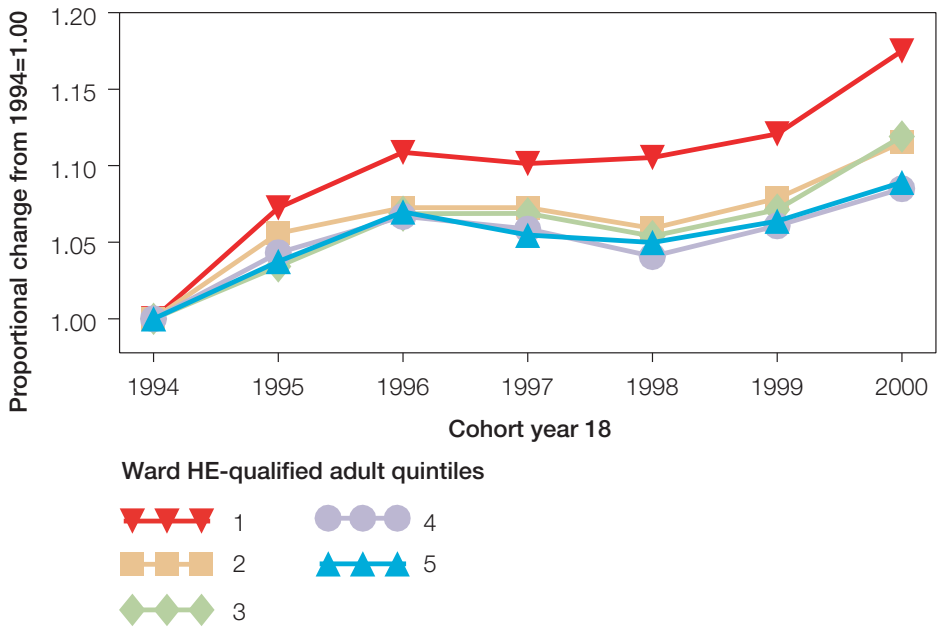
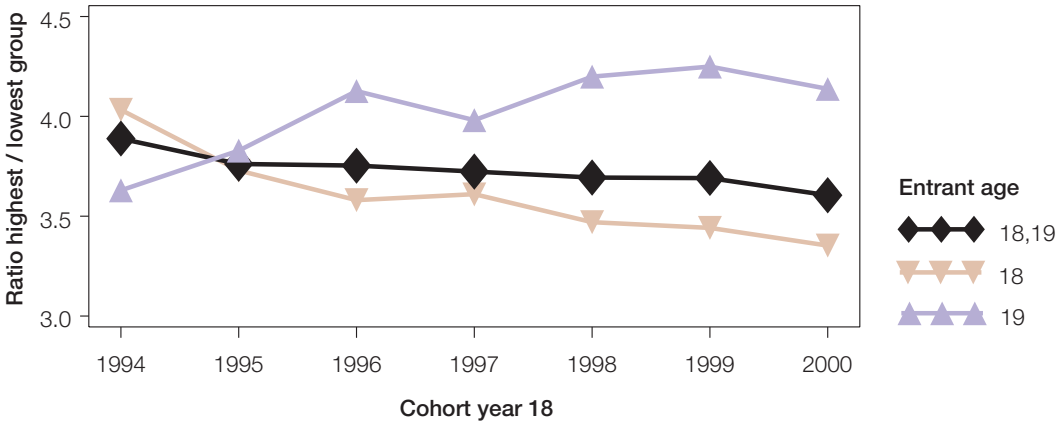


Figure 33(d) **Ratio of YPR(H) of fifth to first quintile**




Later in this report it is shown that young participation is associated with many different area statistics. The 1991 Census measure of the proportion of adults with an HE qualification[18] matches the pattern of participation particularly well (see Figure 53). Using this measure to rank the wards in the quintile formation provides a fixed grouping of areas that is independent of the participation measure, and therefore not susceptible to any exaggeration of participation inequalities resulting from the potential circularity of ranking by participation.

On this grouping the first quintile averages a YPR(H) of 13 per cent, the fifth 47 per cent, giving an inequality ratio of 3.7 which shows a steady fall from 3.9 to 3.6 over the period. Although this discrimination is necessarily less than the 4.8 obtained by ranking on participation, it is still a substantial inequality – and higher than that obtained when ranking on measures from the index of multiple deprivation.

The detailed graphs show that the first quintile has experienced proportional growth of 17 per cent (2 percentage points) since the 1994 cohort, concentrated in the 1995, 1996 and 2000 cohorts. This is slightly higher than the 15 per cent proportional increase of the first quintile when ranked by YPR(H). The other quintiles share proportional growth trajectories, with most of their total 9-12 per cent growth occurring in the first two years.

## 3.15 Electoral wards (1998) ranked by the 2000 Index of Multiple Deprivation – England

Figure 34(a) **YPR(H) IMD2000 quintiles on 1998 wards**

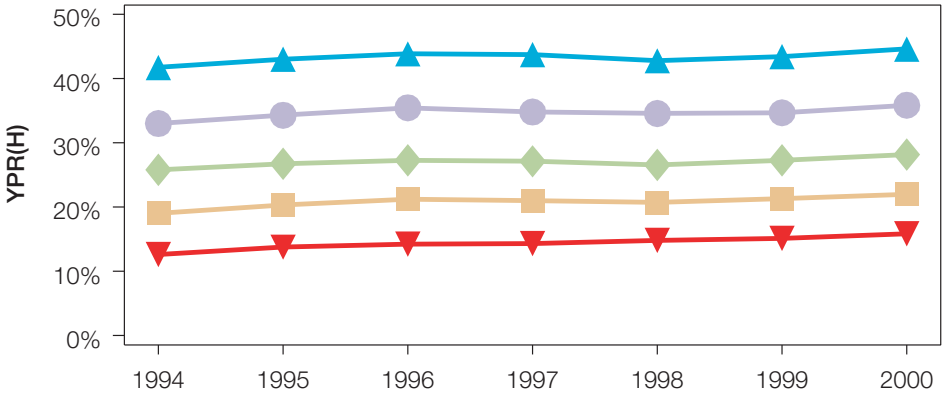



Figure 34(b) **Absolute change since 1994**

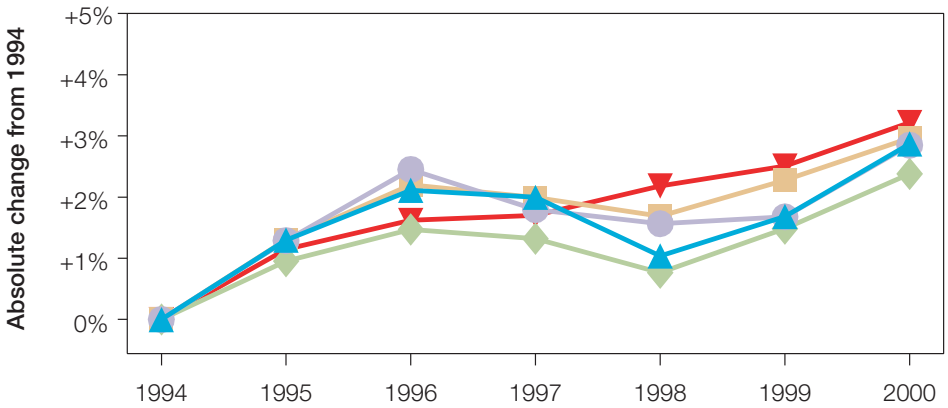



Figure 34(c) **Relative change since 1994**

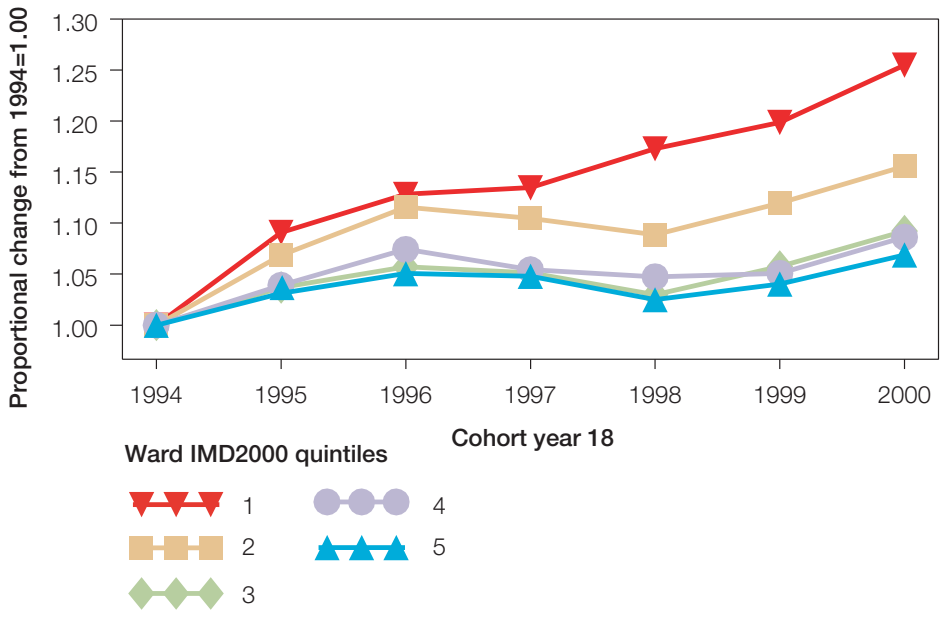
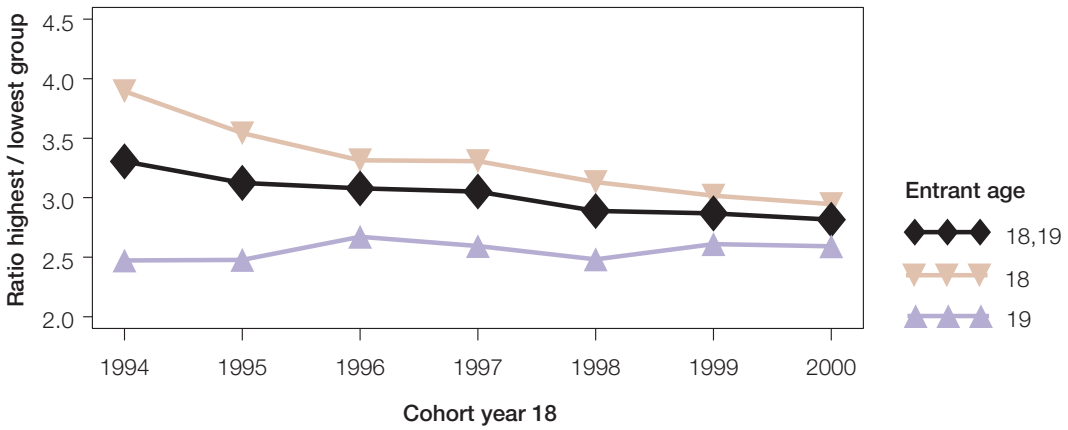


Figure 34(d) **Ratio of YPR(H) of fifth to first quintile**




The 2000 Index of Multiple Deprivation (IMD2000) was constructed for the then Department of the Environment, Transport and the Regions in the late 1990s[19]. It measured deprivation across six main domains covering income (25 per cent weighting), employment (25 per cent), health deprivation and disability (15 per cent), education, skills and training (15 per cent), housing (10 per cent) and geographical access to services (10 per cent).

The domain values are combined in the proportions shown to give the index of multiple deprivation measure, which is available at ward level (1998 boundaries). This has been widely used as a broad measure of deprivation and to define areas for special initiatives[20]. It can be used to rank wards (1998 boundaries) so that the participation patterns of quintiles of deprivation can be investigated. This is useful, as any differential effects from the financial changes to the costs of entering HE would be expected to show up through a grouping that is largely based on material deprivation (which, in turn, will reflect financial resources). The relatively small education component of the multiple index includes a crude measure of young participation derived from UCAS data, so this ranking is not entirely independent of the measured participation.

The quintiles formed using the IMD2000 show a clear but, compared to other groupings, moderate discrimination between high and low participating areas. The first quintile has an average YPR(H) of 14 per cent and the fifth quintile 43 per cent. This causes the ratio of the fifth to first quintile rates to be correspondingly reduced to 3.0 (compared to 3.7 on the ranking by the proportion of HE-qualified adults and 4.8 on ranking by participation), with a steady decline from 3.3 for the 1994 cohort to 2.8 for the 2000 cohort. Unusually on this grouping, inequality for entry at age 18 is higher than for entry at age 19, though this difference reduces across the period.

The absolute percentage point growth for the quintiles falls into an unusually narrow range of 2.4 to 3.2 percentage points with, exceptionally, the largest increase for the first quintile. These near constant absolute increases lead to dramatic differences in the proportional participation growth. The third, fourth and fifth quintiles act as a group in terms of proportional growth patterns, showing a decline for the 1997 and 1998 cohorts and a rise of 7-9 per cent overall. In contrast, the first quintile YPR(H) increases every year to give a dramatic proportional rise of 25 per cent spread fairly evenly over the period. This level of growth is much higher than the proportional 15 per cent observed for the YPR(H) ranking of wards: the role played by London in this difference is examined in Annex J.

## 3.16 Electoral wards (1998) ranked by child poverty (IMD2000) – England

Figure 35(a) **YPR(H) IMD2000 child poverty quintiles on 1998 wards**

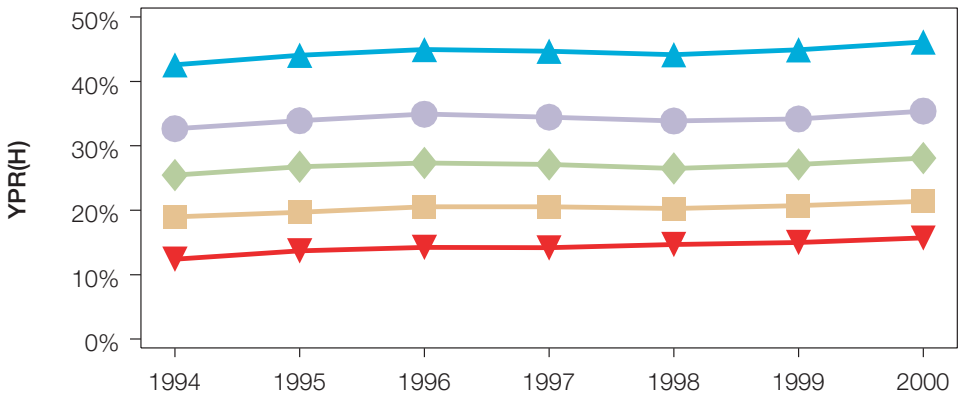



Figure 35(b) **Absolute change since 1994**

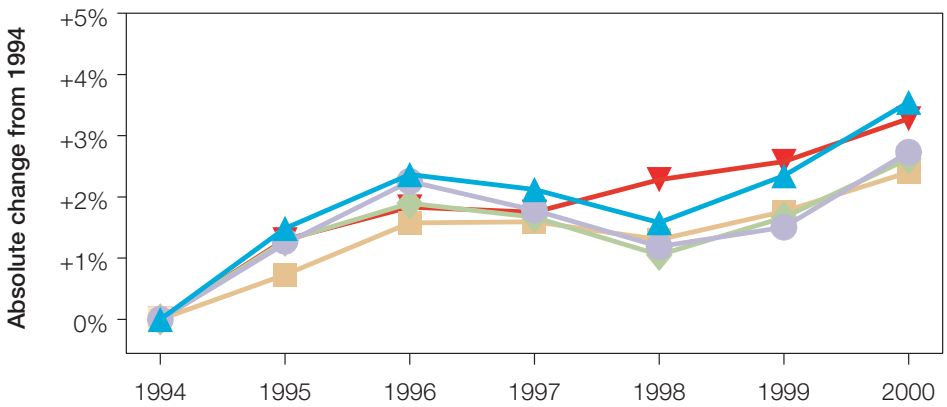



Figure 35(c) **Relative change since 1994**

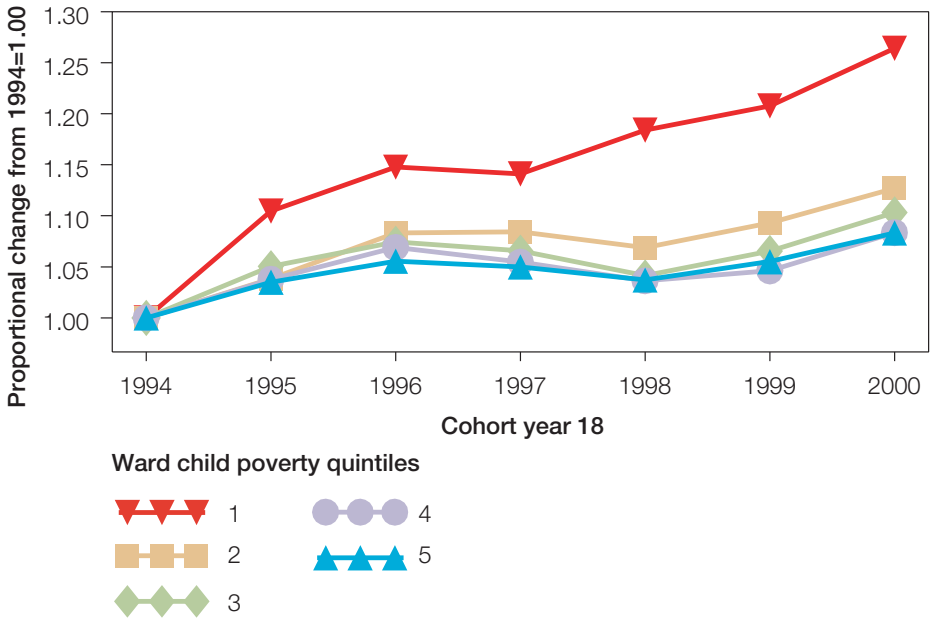
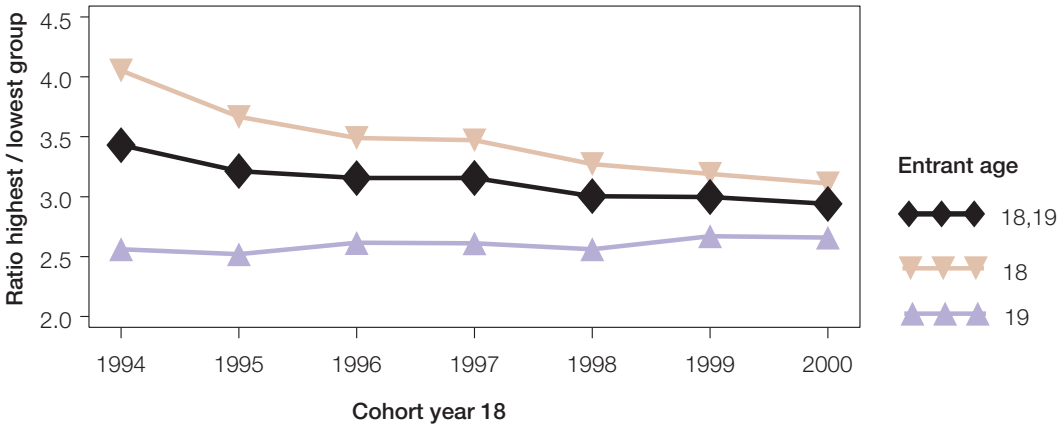


Figure 35(d) **Ratio of YPR(H) of fifth to first quintile**




There are a number of weaknesses in using the composite IMD2000 measure for looking at young participation trends. One, already discussed, is that the composite index introduces an element of circularity by including a crude measure of young participation. A different problem relates to the measure of deprivation in terms of geographical access to services, which is negatively related to young participation (that is, as access deprivation increases young participation deprivation tends to decrease). Therefore the inclusion of this component acts to weaken the discrimination of the measure. More generally, many of the index components relate to sections of the population, such as working adults, that may not reflect the circumstances of the households where the young participation cohort live. Recognising that the composite measure may not always be appropriate, the IMD2000 provides a separate 'child poverty' measure, which is the proportion of children living in households in receipt of means-tested benefits. This should be an effective area measure for partitioning children by likely parental family resources, and is used for ranking the wards to form the quintiles shown in Figures 35(a) to 35(d).

Despite the removal of the potentially circular education domain, the focus on children has resulted in a slightly better discrimination between high and low participation areas than seen for the composite IMD measure. The first quintile averages 14 per cent and the fifth 45 per cent, giving a quintile ratio of 3.1 (compared to 3.0 on the composite measure). However, like the IMD2000 quintiles, these averages conceal marked changes across the period, with the inequality ratio falling from 3.4 for the 1994 cohort to 2.9 for the 2000 cohort. This reduction in inequality is driven by high participation growth in the first quintile which increases from 12.4 per cent for the 1994 cohort to 15.7 per cent for the 2000 cohort, a proportional increase of over 25 per cent. The proportional growth for the second quintile is much less than in the IMD2000 case, so that the second to fourth quintiles all share similar proportional growth patterns to rise between 8 per cent and 13 per cent over the period.

## 3.17 Geodemographic area groupings

The preceding results have all used contiguous physical areas as the base geographical unit. An alternative is to use sets of non-contiguous micro-areas, such as census enumeration districts, that have been pre-aggregated to a small number of groups or types. One method of grouping micro-areas is provided by geodemographic classifiers.

These systems take a wide range of data for the micro-areas and then use a variety of statistical techniques, together with judgement, to group similar micro-areas together into non-contiguous groups of areas. In practice, the most important dimensions of similarity and differences used to form these groups are measures of wealth, housing type and tenure, household and family structure, and ethnic composition. The dominant factor is usually the dimension relating to wealth. This makes the groups potentially useful for participation analysis as the broad division into rich and poor areas will generally reflect the division into high and low participation areas.

Geodemographic classifiers are usually built around census enumeration districts that are typically around a tenth of the size of wards (see Figure 25). The smaller size of these base units means that there is potential for greater resolution between high and low participation areas. Set against this advantage is the fact that these very small areas are not used directly but grouped into a set of (typically) around 50 groups that share certain area characteristics. These groups, usually called types or clusters, are very much larger than wards. One drawback is that all the classification systems contain some types that are either described as 'mixed' or are primarily characterised by a dimension – such as family structure – that is not particularly related to young participation. These types are less useful for the analysis in this report as they are not homogeneous with respect to participation. A similar issue in relation to mixed wards is discussed in Annex F. Another problem in using types for quintile analysis is that some types show different participation rates in different regions. This is analogous to the problem of differing regional participation rates for deprived wards in the IMD2000, covered in Annex J.

The following results employ three commonly used classification systems: ACORN[21], MOSAIC[22] and Super Profiles[23]. The types from the classification are treated as base geographical units that are then ranked by the young participation rate of each type into quintiles. In each case the first version of the classifier built from the 1991 Census data is used[24]. Although the classifiers are often 'refreshed' between censuses (using, for example, 'lifestyle' data from consumer questionnaires), these later versions are not used. This is because, for measuring participation trends, it is more appropriate to use an area grouping that is fixed through time. The classifiers based on the 1991 Census are used in preference to those based on the 2001 Census data, as the retrospective nature of the results means that the 1991 groupings provide a better temporal match to describe the neighbourhood that the cohorts grew up in.

## 3.18 ACORN types (1991 based) ranked by YPR(H) – England

Figure 36(a) **YPR(H) participation quintiles on 1991 ACORN types**

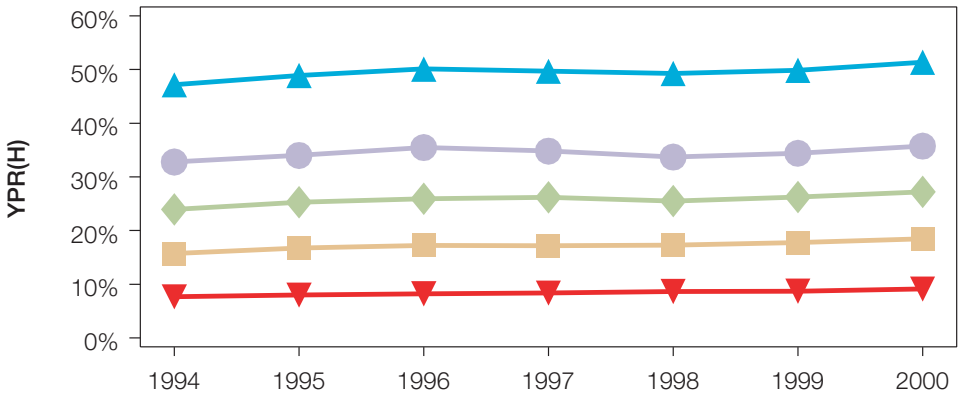



Figure 36(b) **Absolute change since 1994**

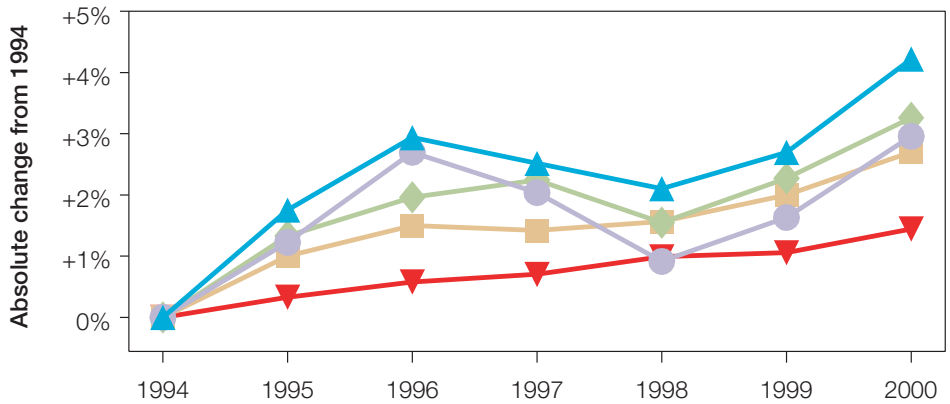



Figure 36(c) **Relative change since 1994**

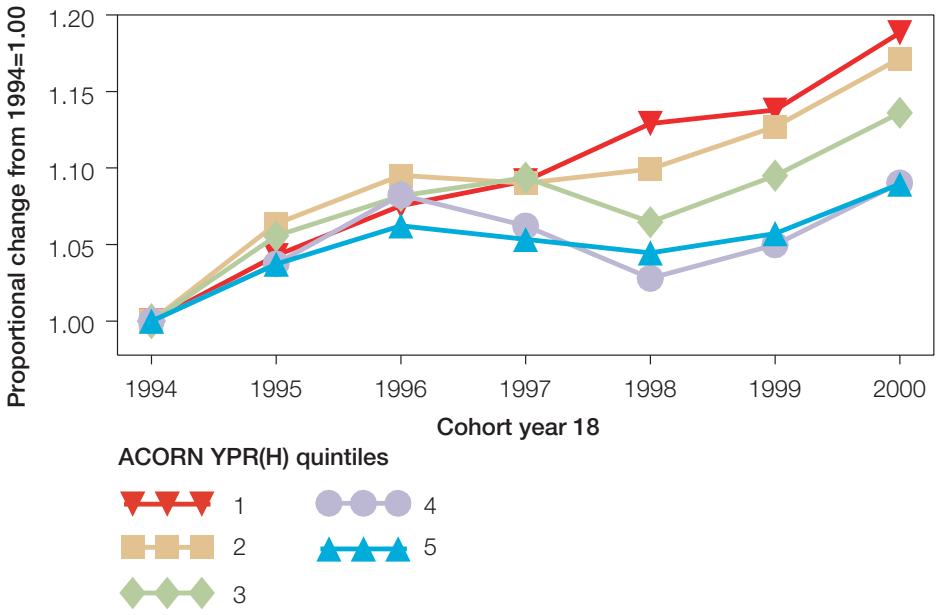
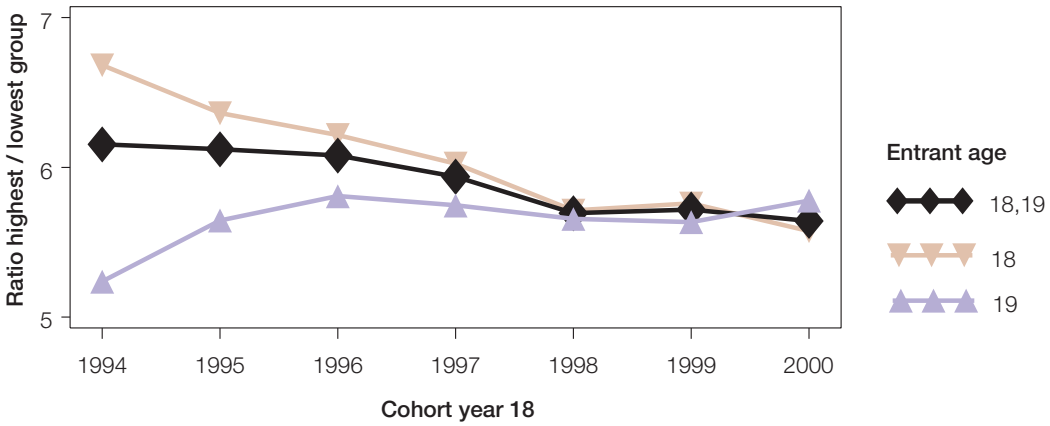


Figure 36(d) **Ratio of YPR(H) of fifth to first quintile**




There are 54 ACORN types for England, with typical cohort sizes ranging from 700 to 27,000, and YPR(H) ranging from 5 per cent to 64 per cent. The YPR(H) and quintile assignment for each ACORN type is given in Table 31 in Annex L. The first quintile has an average YPR(H) of 8 per cent, the fifth an average of 50 per cent. This gives an inequality ratio of 5.9 (higher than that seen for ward-based groupings) which shows a decline from 6.1 for the 1994 cohort to 5.7 for the 2000 cohort. The trend of increasing inequality at entry age 19 and decreasing inequality at 18 is shared with the ward classifications, but the relative values are different: inequality at entry age 18 is greater than that at 19 for the majority of the period.

The graphs show that the YPR(H) for the first quintile is particularly low, at between 8 per cent and 9 per cent, which accounts for the high inequality ratio. The fine detail picture indicates that the lower two quintiles have had steady proportional increases in participation over the period, with the 2000 cohorts showing 17-19 per cent proportional increases over the 1994 cohorts. Both the fourth and fifth quintiles show slight declines for the 1997 and 1998 cohorts (less than in other groupings, particularly for the fifth quintile), leading to a proportional 9 per cent rise overall. However the large differences in participation between the groups means that, despite its lower proportional growth, the fifth quintile has the highest absolute increase in YPR(H) of 4.2 percentage points, and the first quintile has the lowest at 1.4 percentage points.

## 3.19 MOSAIC clusters (1991 based) ranked by YPR(H) – England

Figure 37(a) **YPR(H) for participation quintiles on 1991 MOSAIC clusters**

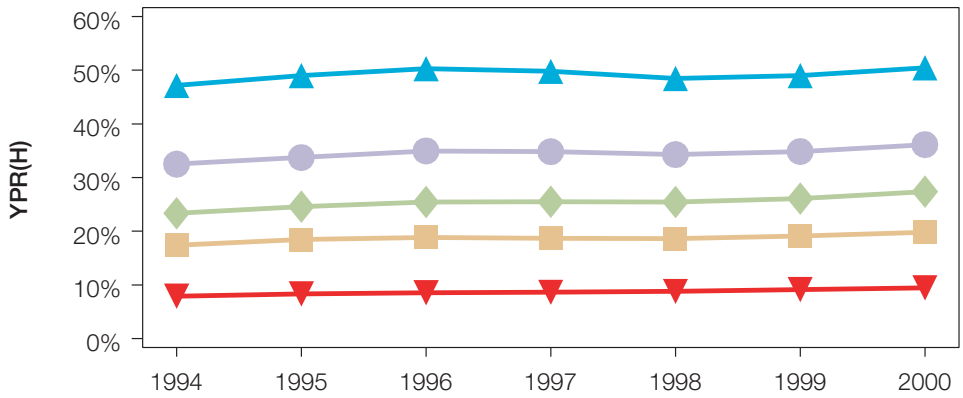



Figure 37(b) **Absolute change since 1994**

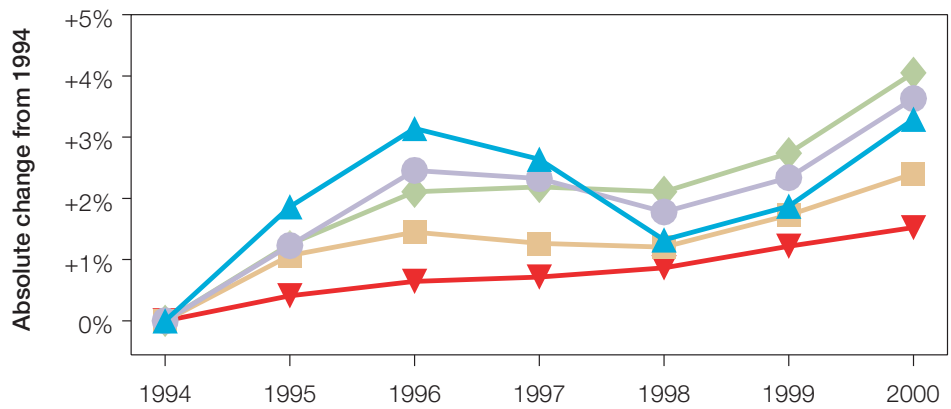



Figure 37(c) **Relative change since 1994**

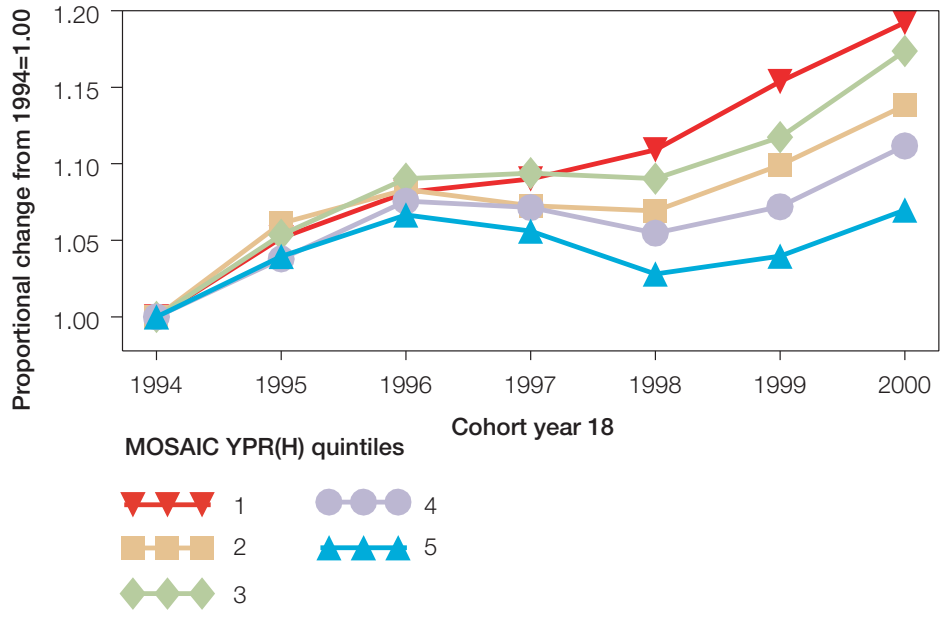
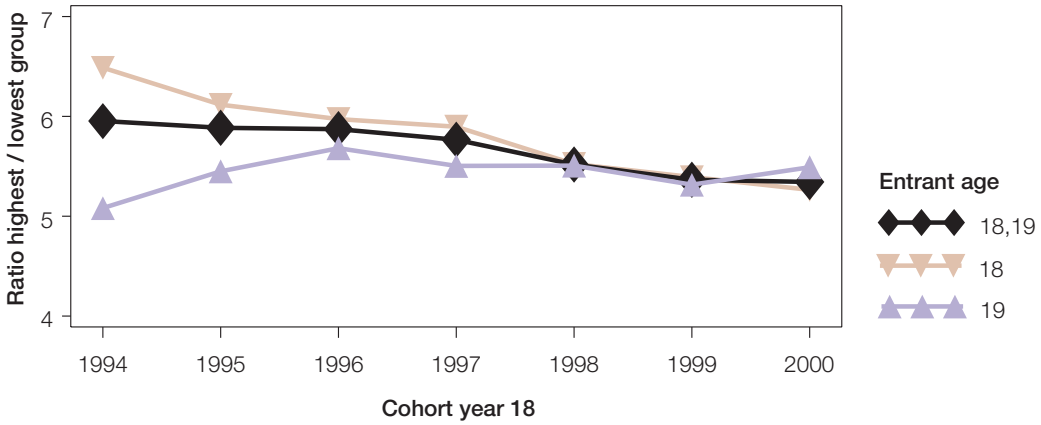


Figure 37(d) **Ratio of YPR(H) of fifth to first quintile**




There are 52 1991 MOSAIC types in England. These range in annual cohort size from 35,000 to the low hundreds (typically types that are mainly based in Scotland), and in YPR(H) from 5 per cent to 65 per cent. The YPR(H) and quintile assignment for each type is given in Table 32 in Annex L. The first quintile has an average YPR(H) of 9 per cent, the fifth 49 per cent, giving an average inequality ratio of 5.6, which has fallen from 6.0 to 5.3 between the 1994 and 2000 cohorts.

Both the absolute and proportional quintile growth figures are notable for the distinct patterns for each quintile. The fifth quintile shows very strong growth for the 1995 and 1996 cohorts, records falls for the 1997 and 1998 cohorts, and grows again for the 1999 and 2000 cohorts, to be proportionally 7 per cent higher at the end of the period. In contrast, although the YPR(H) for the first quintile increases for each cohort, amounting to a substantial proportional rise of 19 per cent over the period, the absolute rise of 1.5 percentage points is less than half that for the fifth quintile. The third quintile records the largest absolute increase, of 4 percentage points, enough to take its proportional increase to 17 per cent, unusually higher than the 14 per cent of the second quintile.

## 3.20 Super Profiles clusters (1991 based) ranked by YPR(H) – England

Figure 38(a) **YPR(H) for participation quintiles on 1991 Super Profiles clusters**

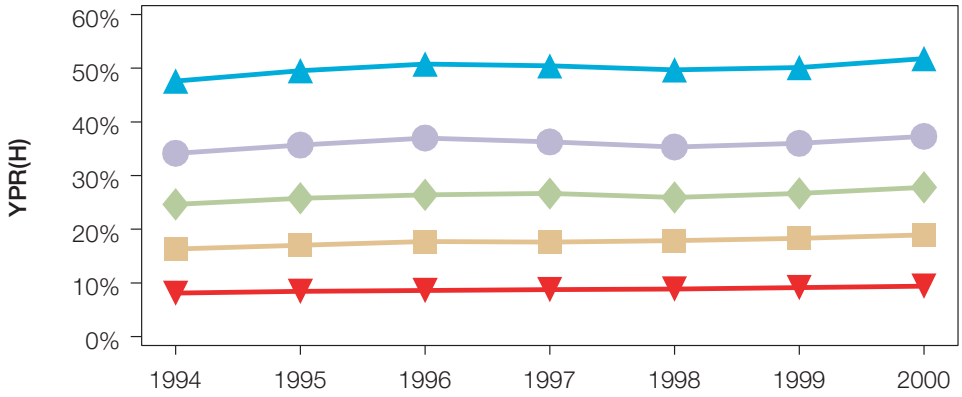



Figure 38(b) **Absolute change since 1994**

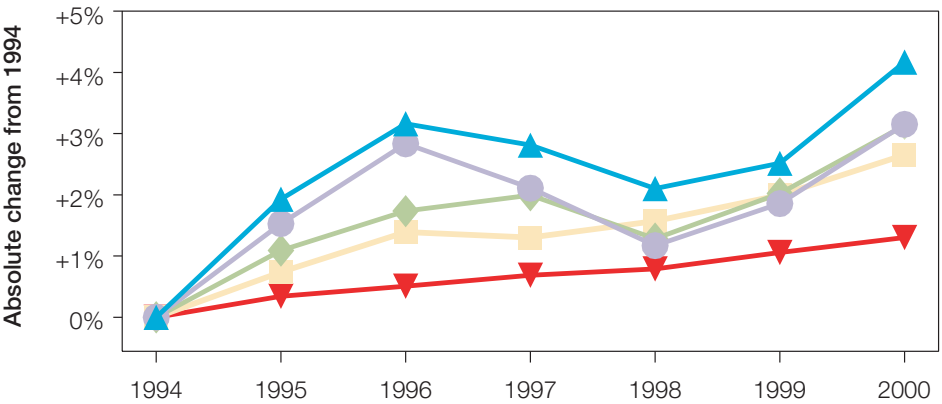



Figure 38(c) **Relative change since 1994**

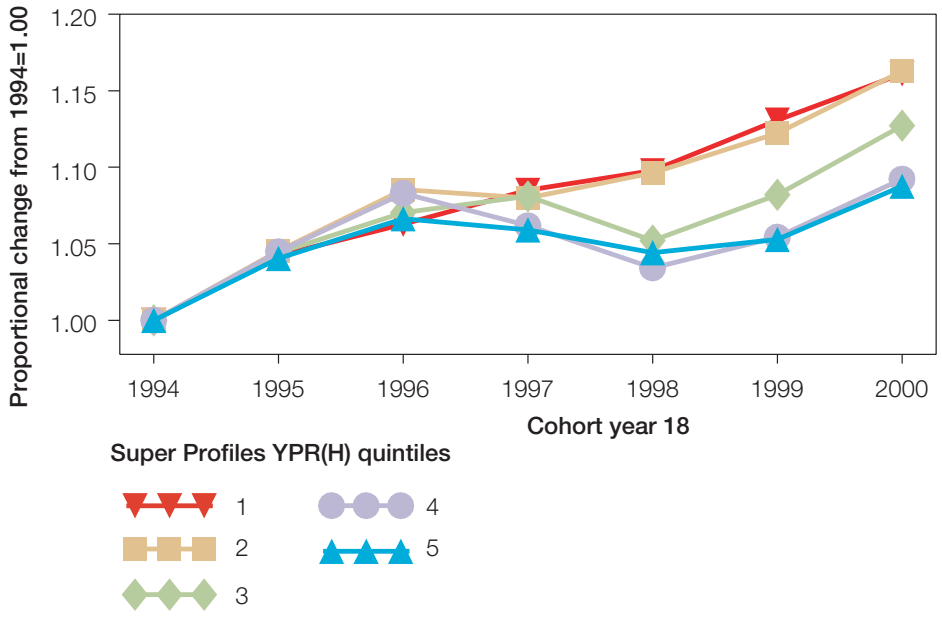
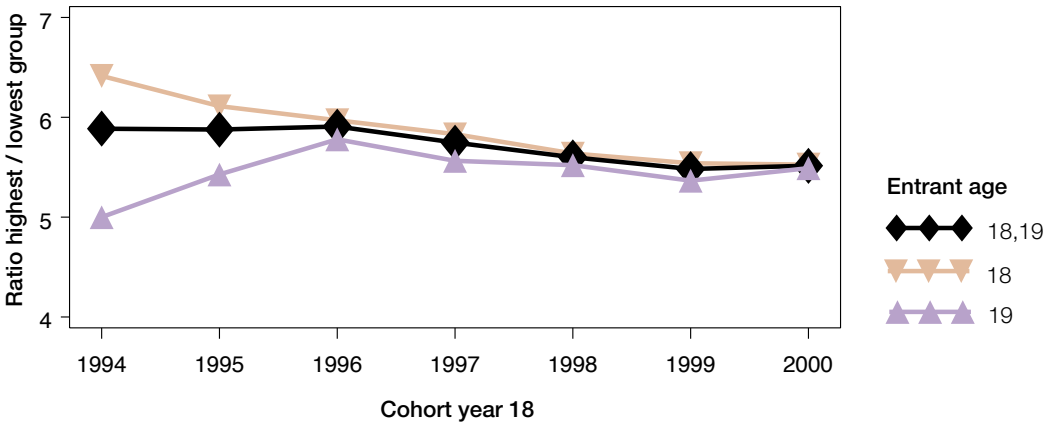


Figure 38(d) **Ratio of YPR(H) of fifth to first quintile**




With 128[25] English groups there are more than twice as many 1991 Super Profiles clusters than groups in the other geodemographic classifiers. The largest clusters have a typical annual cohort of over 20,000, but there are a number of very small clusters in England that are not much more populous than wards. The whole-period YPR(H) figures for each cluster together with the quintile assignment are given in Table 33 in Annex L. The smaller average size of the clusters compared to the other systems leads to a slightly greater range of YPR(H) rates (4 per cent to 76 per cent) but does not increase the resolution of the participation quintiles. The first quintile has an average YPR(H) of 9 per cent, the fifth 50 per cent, giving an inequality ratio of 5.7 – similar to that found with the other classifiers. The quintile inequality has declined from 5.9 to 5.5 over the period, with inequality at entry age 18 and 19 being very similar after the 1996 cohort.

The graphs show that the overall quintile participation pattern has been stable over the period. The fine detail results show that, in terms of proportional participation growth, the first and second quintiles have had identical trajectories: constant steady growth leads to participation being proportionally 16 per cent higher at the end of the period than at the start (absolute growth of 1.3 and 2.7 percentage points respectively). Similarly the fourth and fifth quintiles show paired behaviour: strong rises for the 1995 and 1996 cohorts are followed by declines for the 1997 and 1998 cohorts, with growth resuming thereafter to give 9 per cent proportional increases over the period. All the quintiles show similar proportional growth for the 1999 and 2000 cohorts.

## 3.21 Census EDs (1991) ranked by YPR(H) – England

Figure 39(a) **YPR(H) for participation quintiles on 1991 EDs**

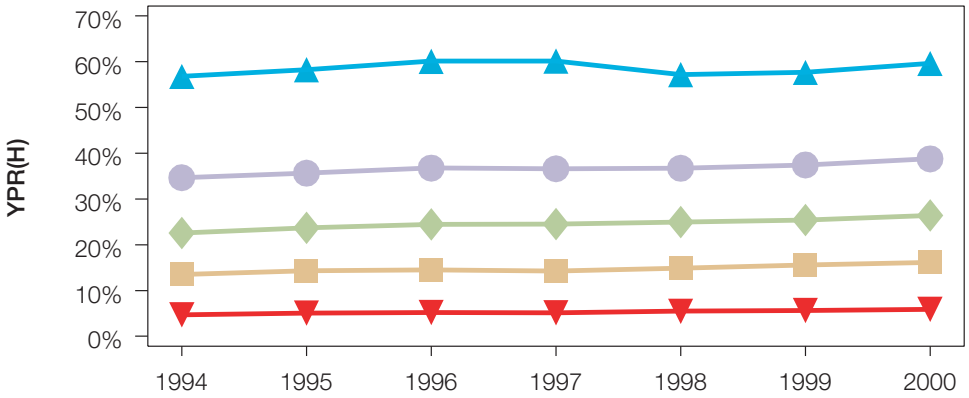



Figure 39(b) **Absolute change since 1994**

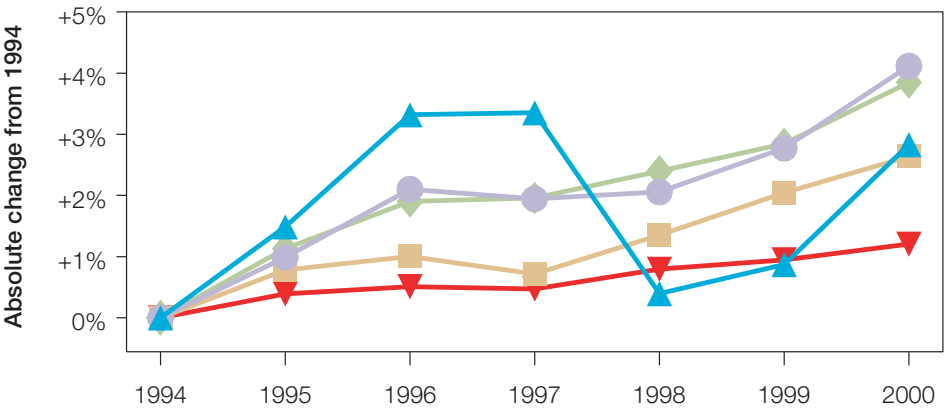



Figure 39(c) **Relative change since 1994**

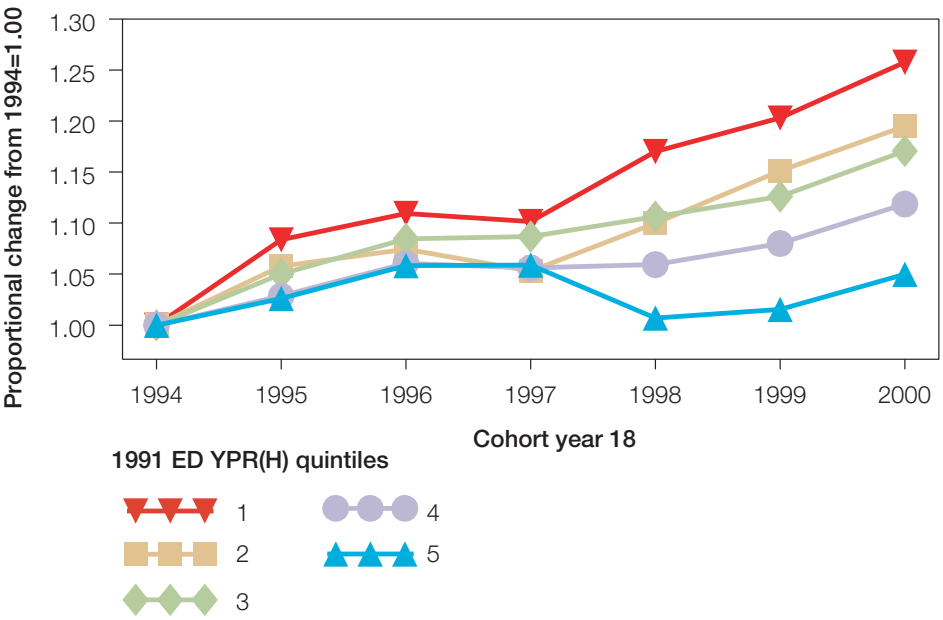
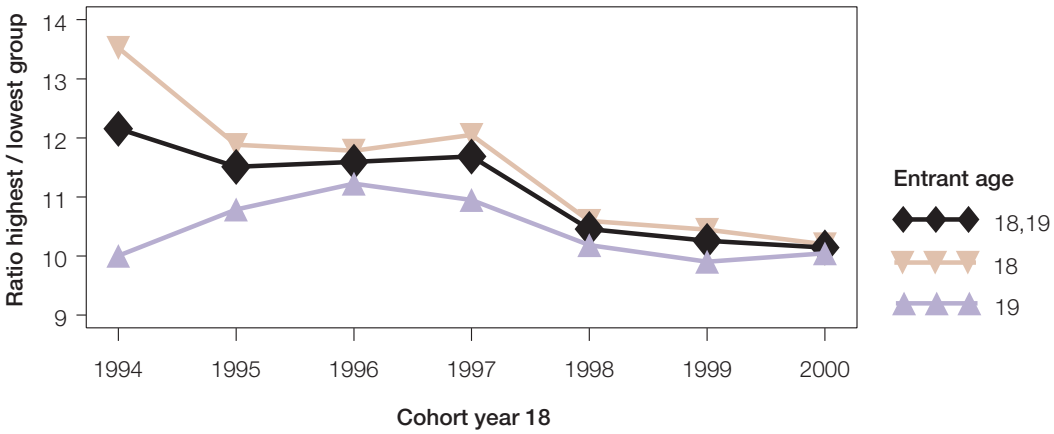


Figure 39(d) **Ratio of YPR(H) of fifth to first quintile**




Enumeration districts are very much smaller than any of the other units considered. Even with the seven cohorts of the YPR(H) series combined, the typical ED cohort size is less than 40 with, typically, eight entrants to HE. With such small numbers there will be a high random coefficient of variation in the whole-period YPR(H) rate for each ED. This leads to a higher proportion of observed extreme rates so that the resulting ranking will tend to exaggerate the underlying participation differences between the quintiles. Figure 39 has some suggestion of this, with the first quintile showing an average YPR(H) of 5 per cent and the fifth quintile 59 per cent, to give an inequality ratio of 11, very much higher than on any other ranking.

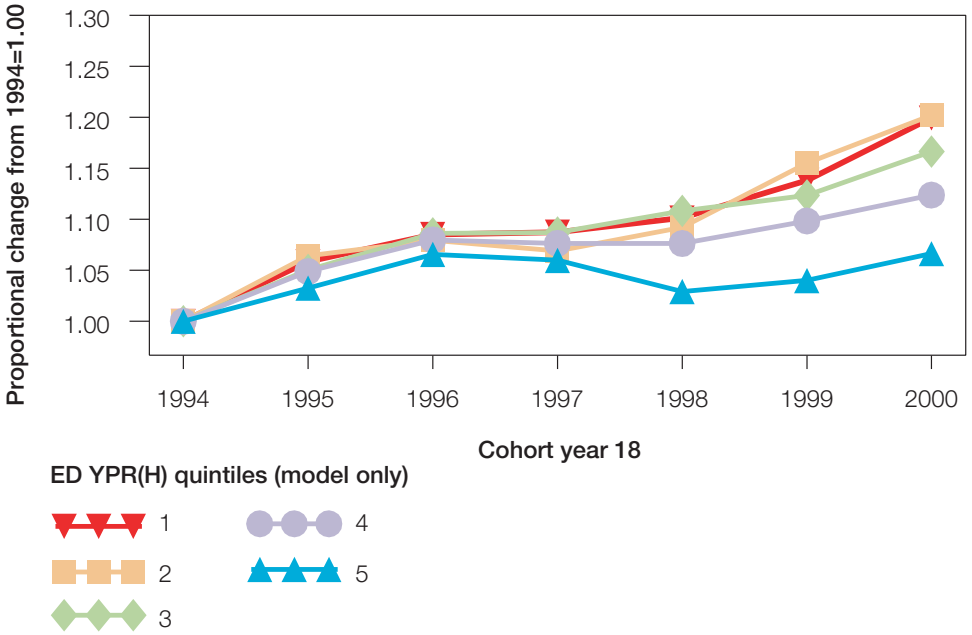
To investigate the effect of this random exaggeration, ED-based quintiles were formed using the YPR(H) data series minus the 2000 cohort. The resulting groupings of EDs were then used to calculate quintile YPR(H) rates for the 2000 cohort. These rates will be independent of random exaggeration since the 2000 cohort data were not used to form the quintiles. These quintiles were less extreme than the version dependent on the 2000 cohort. In particular the YPR(H) for the first quintile rose from 6 per cent to 9 per cent, and that for the fifth quintile fell from 60 per cent to 55 per cent. This reduces the inequality ratio for the 2000 cohort to 5.8, suggesting (using the trends from the dependent quintiles) a whole-period inequality ratio of around 6.4. This is higher than, but comparable to, the 5.6-5.9 ratio recorded using the ED aggregates in the geodemographic classifiers, suggesting that the underlying young participation inequality for micro-areas in England is close to that figure.

Although the inequality ratio is inflated by using the dependent all-period ED rates, it is not biased for any particular cohort, so the trends can be interpreted as before. The results show that these trends are similar to those seen previously. Overall the broad relativities of the quintiles stay constant. Looking closely, the first quintile has seen the largest proportional growth of 26 per cent, but from such a small base that its absolute rise over the period of 1 percentage point is the smallest. The fifth quintile shows absolute growth for the 1995 and 1996 cohorts, stalls for the 1997 cohort, falls by 3 percentage points for the 1998 cohort and then recovers.

Although evident in the quintile trends from many groupings, it is particularly noticeable with the ED based quintiles that reduction in participation inequality happens mostly in a single cohort – those that are 18 in 1998 – as the participation for the first quintile jumps and that for the fifth falls. This is the cohort where the estimate method switches from the model blend of census and child benefit data to child benefit data alone (see Annex A), so there is a concern that the divergence observed might be caused by this transition (the effect of which can be exaggerated by factors related to calculating the rates for such small units).

The influence of this transition is illustrated by Figure 40 which shows the relative changes since the 1994 cohort, based on the YPR(H) series but using only the cohort model estimate base. This removes the methodology transition for the 1998 cohort, at the expense of biased quintile estimates for the 1998 and later cohorts. In particular the first quintile cohort is over-estimated and its participation correspondingly under-estimated. The quintile pattern is less extreme but the 1998 cohort remains as a divergence point, and the relative trajectories of the first and fifth quintile are similar to the results using the standard cohort estimates. This suggests that the change in estimate methodology for the 1998 cohort does not generate the trends observed.

Figure 40 **1991 ED participation quintiles based on model cohort only**



## 3.22 Census EDs (1991) ranked by proportion of HE-qualified adults – England

Figure 41(a) **YPR(H) for HE-qualified adult quintiles on EDs**

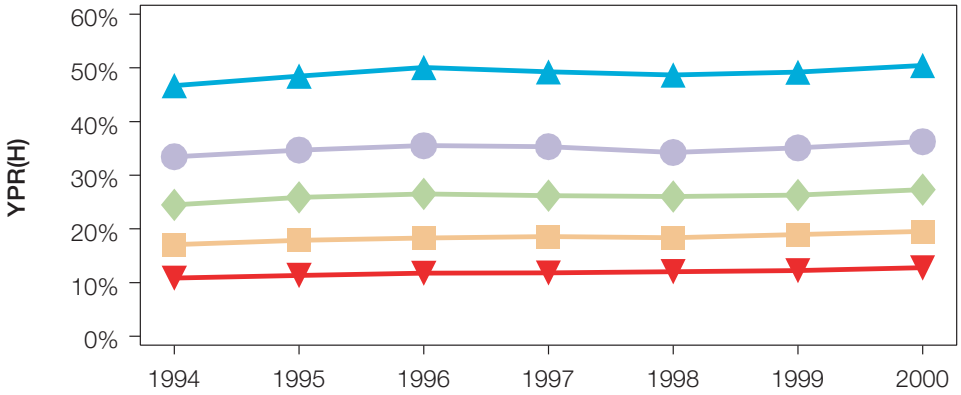



Figure 41(b) **Absolute change since 1994**

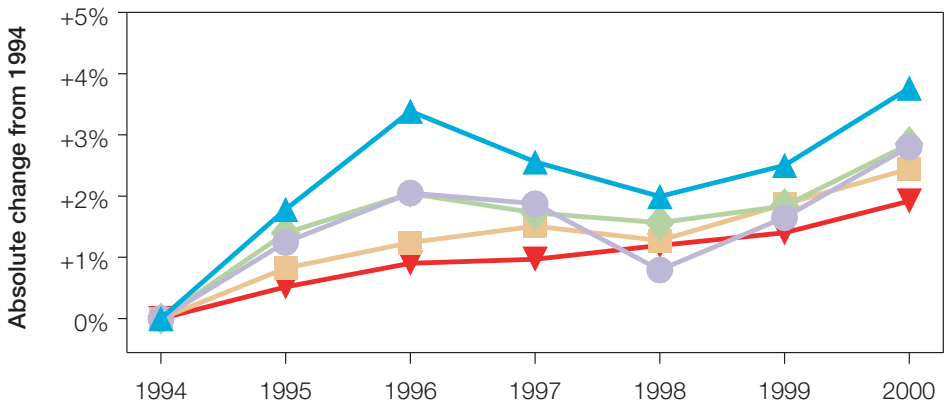



Figure 41(c) **Relative change since 1994**

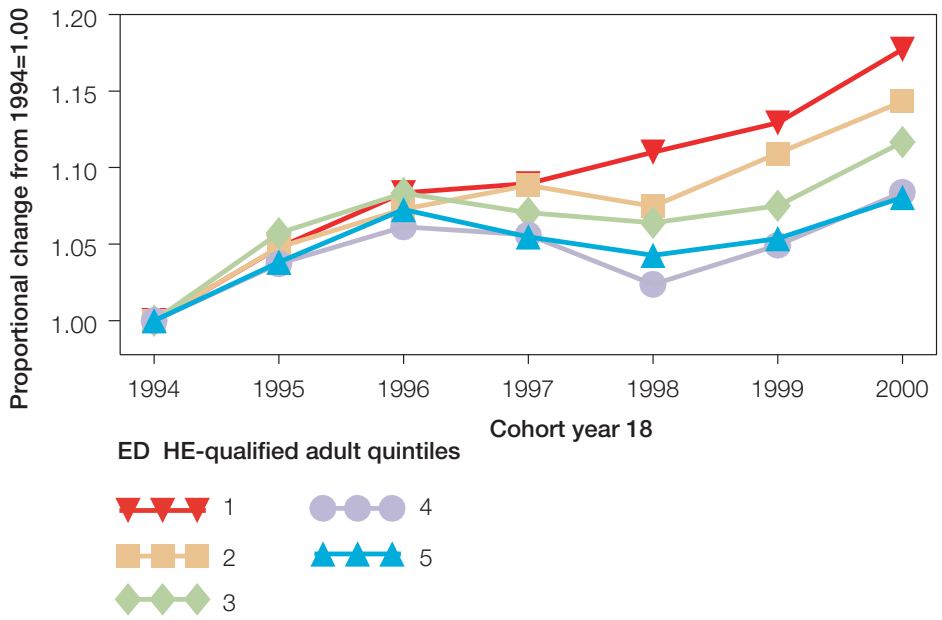
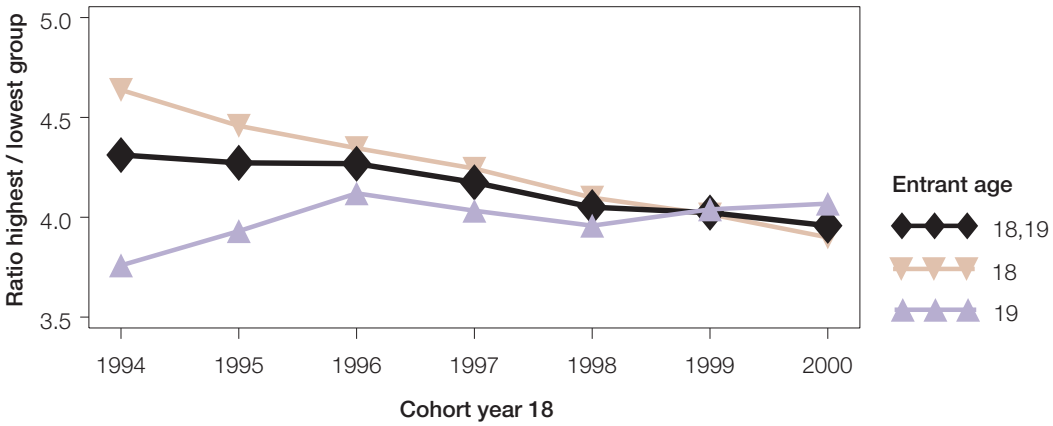


Figure 41(d) **Ratio of YPR(H) of fifth to first quintile**




Ranking the ED micro-areas using a census statistic removes the dependency problem that exaggerated the quintile differences when ranking by all-period YPR(H). In a later section (see Figure 53) the proportion of adults with an HE qualification is shown to be exceptionally strongly associated with young participation at ward level. For that reason it was used to rank wards into quintiles (see Figure 33). The 1991 Census Small Area Statistics provide for the same statistic to be calculated for EDs. This allows the ranking of EDs by this measure but, as the census statistic is a 10 per cent sample and ED populations are small, random variations and sample errors in the measure may affect the discrimination of the quintiles.

This is possibly why this ED-level ranking shows only a modest improvement on discrimination over the ward level, with a quintile ratio averaging 4.1 compared to 3.7 for the ward-based ranking. Compared to the ward-level quintiles, the fourth and fifth ED quintiles show a more pronounced decline for the 1997 and 1998 cohorts, and the first and second quintiles show slightly higher overall increases but otherwise the pattern is very similar. The YPR(H) of the first quintile increases from 11 per cent to 13 per cent, a proportional rise of 18 per cent. The YPR(H) of the fifth quintile increases from 47 per cent to 51 per cent, half the proportional rise of the first quintile but double the absolute increase.

## 3.23 School performance quintiles and ward YPR(H) – England

Figure 42(a) **Quintiles of schools by GCSE 5AC performance**

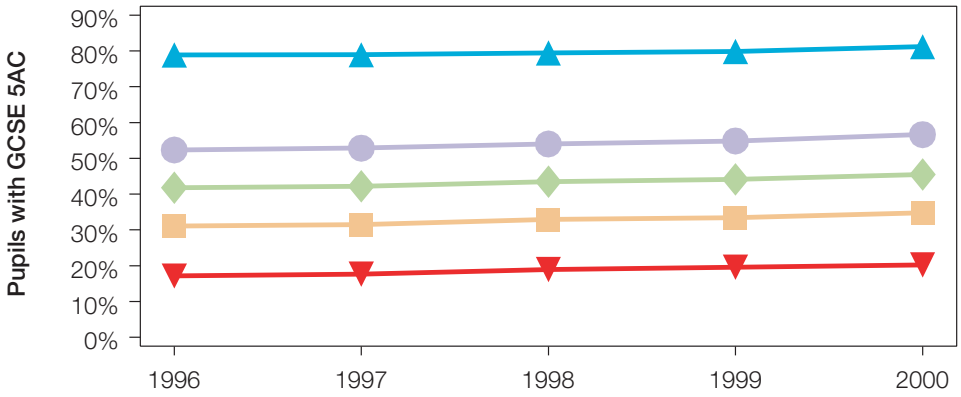



Figure 42(b) **Absolute change since 1996**

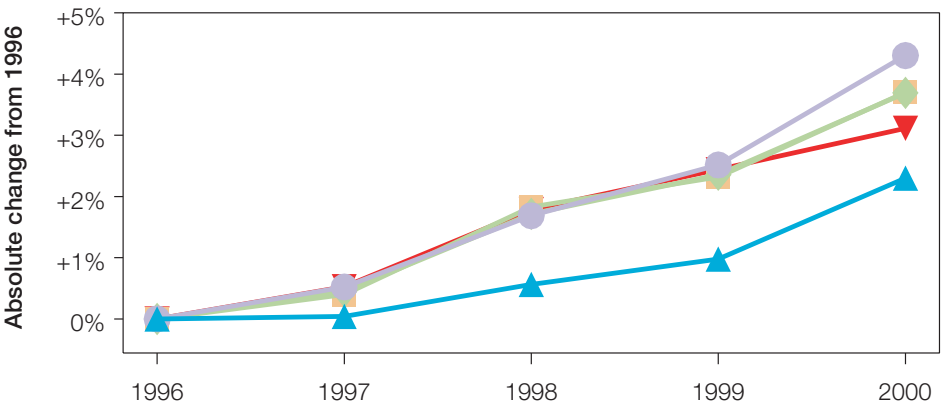



Figure 42(c) **Relative change since 1996**

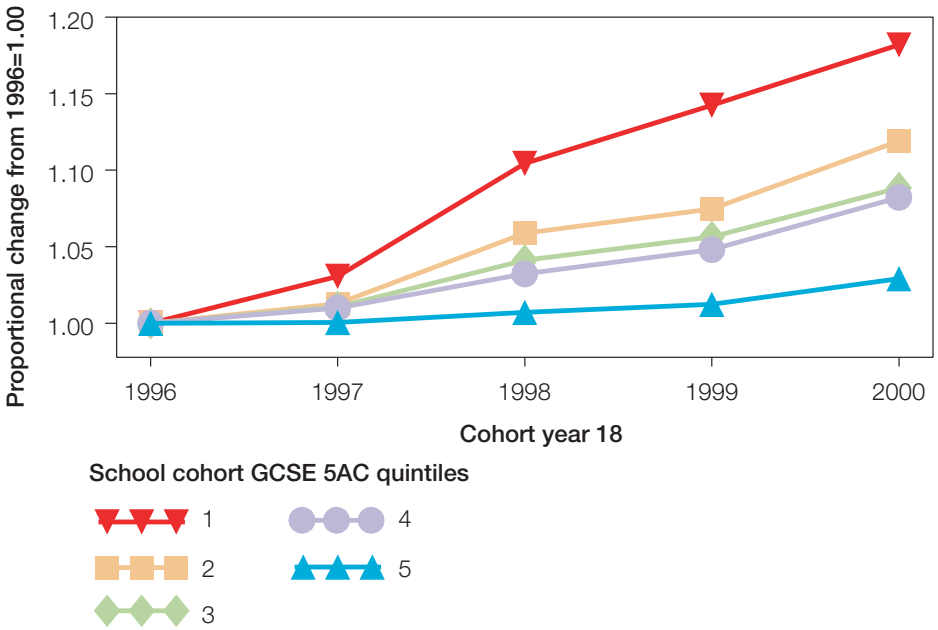
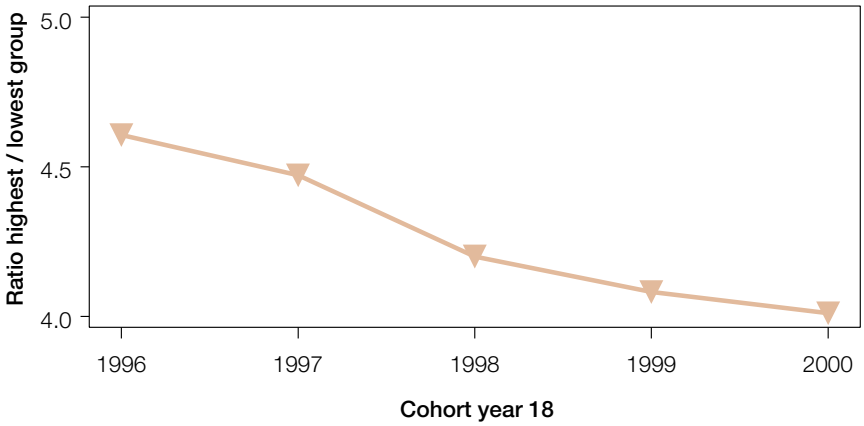


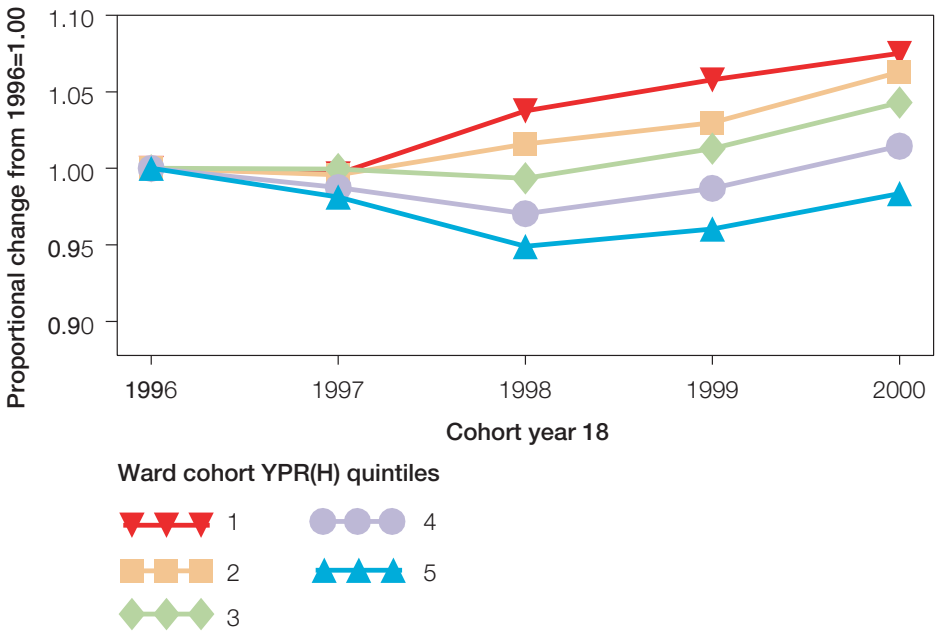
Figure 42(d) **Ratio of GCSE 5AC for fifth and first school performance quintiles**




Trends in national GCSE results were useful when examining the young participation for England (see Figure 6). The ideal analogue for the quintile analysis would be to look at the change in aggregated GCSE results for children living in each ward participation quintile, but these data are not available[26]. An alternative is to use school-level GCSE data from the DfES school performance tables[27] to create quintiles of school performance to compare against the young participation area quintiles. Although the cohort from each ward participation quintile will not exclusively attend a school from the matching school quintile, it is reasonable to assume that children living in low participation wards will generally be enrolled at schools with low GCSE results. Indeed such relationships are strongly suggested by the local participation maps (for example, Figure 24).

The English Secondary School Performance Tables start for examinations taken in the summer of 1994. These refer to the school cohort aged 15 on 31 August 1993 who would be 18 on 31 August 1996, that is the 1996 cohort in the language of this report. Special schools and those with no recorded GCSE results (usually international schools) are removed from the school results data set. The remaining 4,000 schools are ranked by the proportion of pupils achieving 5 or more grades A to C at GCSE (GCSE 5AC) to form per cohort school performance quintiles. It is more appropriate to use per cohort quintiles than whole-period quintiles as schools are generally more dynamic (in terms of opening, closing, merging and growth) than areas. The proportion of the cohort gaining GCSE 5AC by GCSE 5AC quintile and cohort is shown in Figure 42(a). The absolute and relative changes and the ratio of the quintile GCSE 5AC values are shown in Figures 42(b)to 42(d). For comparison the relative changes (1996 cohort=1) of the ward cohort YPR(H) quintiles are shown in Figure 43 (these are the same results that are shown in Figure 29(c) but rebased to the 1996 cohort =1 for easier comparison to the school results).

Figure 43 **Per cohort YPR(H) English ward quintiles relative change from the 1996 cohort**




It was noted in the national results that the proportion of children gaining GCSE 5AC at school is much higher than the subsequent level of young participation in HE. Accordingly the GCSE 5AC rates for the school quintiles are higher than the equivalent YPR(H) values for the participation quintiles, ranging from an average of 19 per cent for the first quintile to 80 per cent for the fifth quintile. This gives a mean quintile ratio of 4.3, substantially less polarised than the 5.5 recorded for the analogous ward participation quintiles (ranked by per cohort YPR(H), 1996 to 2000 cohorts). There are over twice as many wards as secondary schools in England; their median annual cohorts for this period are around 50 and 140 respectively. The smaller size of wards could mean that they are better able to discriminate educational advantage than schools. It is also possible that some schools may be genuinely less polarised than small areas, perhaps because of geographical restrictions or a deliberate policy to have pupils from a range of backgrounds. Alternatively, the apparently lesser discrimination provided by schools may be due to GCSE 5AC being an insufficiently discriminating school measure: the proportion of the cohort gaining some higher number of A-C grades may more closely relate to young participation.

The school quintile results show that, as in the area quintile results, the broad picture of inequality has persisted over the period but some of the fine details have changed. The first to fourth quintiles showed absolute growth in GCSE 5AC of 3-4 percentage points over the period. The fifth quintile lags behind with 2 percentage points of absolute growth. This may be partly explained by around one-quarter of children in this quintile being at schools where the GCSE 5AC rate

is already at 95 per cent or higher, indicating little room for substantial further improvement. The higher absolute growth for lower achieving schools translates into large differences in proportional growth: the GCSE 5AC measure for the lowest achieving 20 per cent of schools increases by 18 per cent over the period, compared to a 3 per cent proportional increase for the highest achieving schools. This differential growth is reflected in the quintile inequality ratio falling from 4.6 to 4.0 over the period.

In the analogous chart for per cohort YPR(H) ward quintiles (Figure 43), the fourth and fifth quintiles experience a decline in participation for the 1997 and 1998 cohorts followed by rises for the 1999 and 2000 cohorts. However, in the case of the fifth quintile this is not enough to reverse the previous declines, leaving the YPR(H) for this group proportionally 2 per cent lower (1 percentage point in absolute terms) than for the 1996 cohort. In contrast, the first quintile increases across the period, so that the YPR(H) for the 2000 cohort is proportionally 8 per cent higher (just under 1 percentage point in absolute terms) than for the 1996 cohort. This pattern of large proportional increases for the first quintile and a slight decline for the fifth quintile compares closely to the school quintile results, which showed much higher proportional growth for the first school quintile compared to the fifth quintile. The pattern of growth, in particular the divergence of the proportional increases for the quintiles seen for the 1998 cohort, also shows strong similarities between the two sets of results. This is particularly interesting as it suggests that the sharp decrease in participation inequality often seen for the 1998 cohort is not due entirely to the transition in the cohort methodology for that cohort, and may instead be reflecting an apparent reduction in inequalities between schools. Further investigations of the relationship between school and area quintile trends between regions are reported in Annex J.

A raw comparison of the overall YPR(H) to the total proportion gaining GCSE 5AC suggests that 62 per cent of those who gain 5 grades A-C at GCSE go on to participate in HE as defined by the YPR(H) measure (the broader YPR(A) statistic increases this proportion to 64 per cent). This proportion has declined from 65 per cent to 61 per cent over the 1996 to 2000 18 year-old cohorts. If it is assumed that the cohort from each ward participation quintile broadly attends a school from the matching school quintile, then further rough estimates of this figure for progression from GCSE 5AC to HE can be made for different quintiles. Since the inequality in school performance is not as great as that for ward participation, then this assumption would suggest that a higher proportion (around two-thirds) of those gaining GCSE 5AC in high performing schools go on to enter HE than the half or so of those who gain GCSE 5AC in low performing schools. This is not a robust result because of uncertainties in the overlap between the quintiles, but it does suggest again either that the GCSE 5AC is not the best discriminating GCSE measure for determining young participation or, if it is a good guide, that schools are less polarised than wards.

## 3.24 Census wards (1991) ranked by YPR(H) for women – England

**Figure 44(a) YPR(H) for participation quintiles on 1991 wards for women**

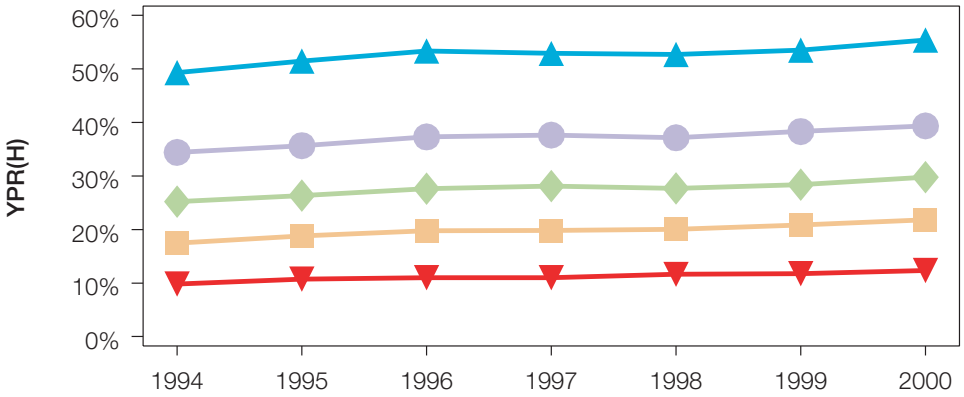



**Figure 44(b) Absolute change since 1994**

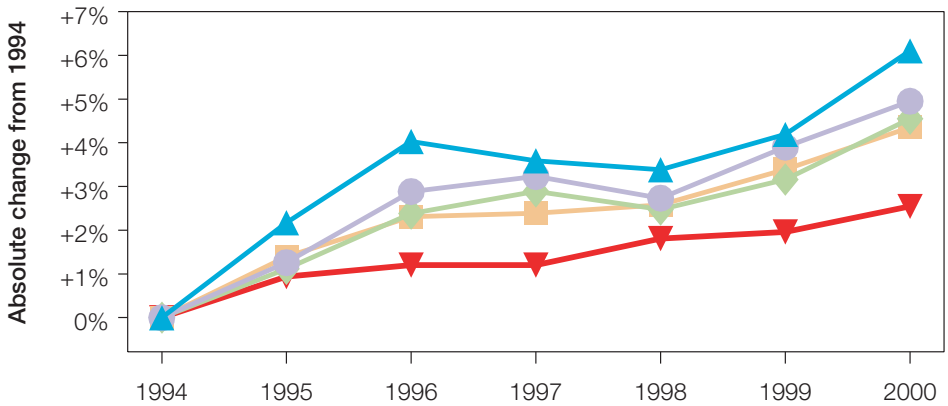



**Figure 44(c) Relative change since 1994**

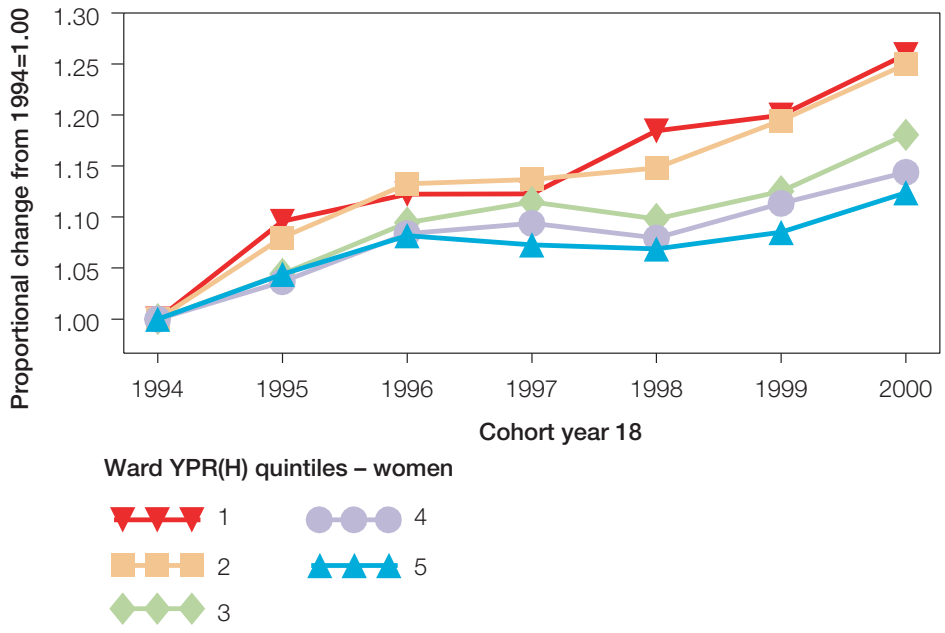
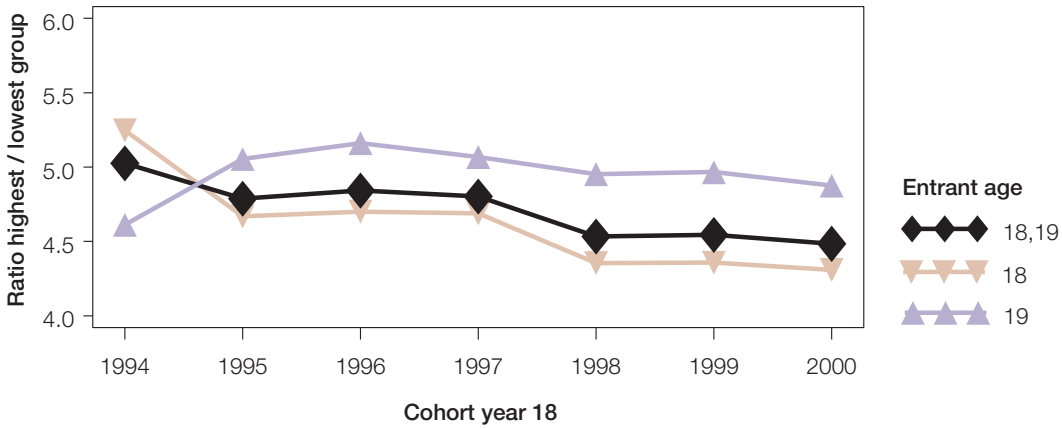


**Figure 44(d) Ratio of YPR(H) of fifth to first quintile**




Most of the national results showed no substantial changes in participation between the 1994 and 2000 cohorts. The exception to this was the analysis by sex (see Figure 9) where rising participation by young women and near static participation by young men resulted in young women from the 2000 cohort being 18 per cent more likely to enter HE than young men. It is possible that these differences in participation by sex are not constant over the participation quintiles. This section looks at the participation trends for young women by 1991 Census ward participation quintiles; the following section does the same for young men.

Figures 44(a) – 44 (d) give the quintile results for 1991 Census wards ranked by the participation of young women. The higher participation rates and greater participation growth of women are reflected in these charts, with the mean YPR(H) rates for all the quintiles being higher than for the equivalent whole-cohort results (Figure 28). The first quintile has an average YPR(H) of 11 per cent, the fifth 53 per cent, giving an average inequality ratio of 4.7. The absolute increases are high, ranging between 3 and 6 percentage points, with the highest participating quintiles having the largest absolute increases. The proportional increases are also high: the YPR(H) for the fifth quintile increases by 12 per cent, and the first and second quintiles record rises of over 25 per cent. The higher proportional growth for the first quintile reduces the inequality ratio from 5.1 for the 1994 cohort to 4.5 for the 2000 cohort.

## 3.25 Census wards (1991) ranked by YPR(H) for men – England

Figure 45(a) **YPR(H) for participation quintiles on 1991 wards for men**

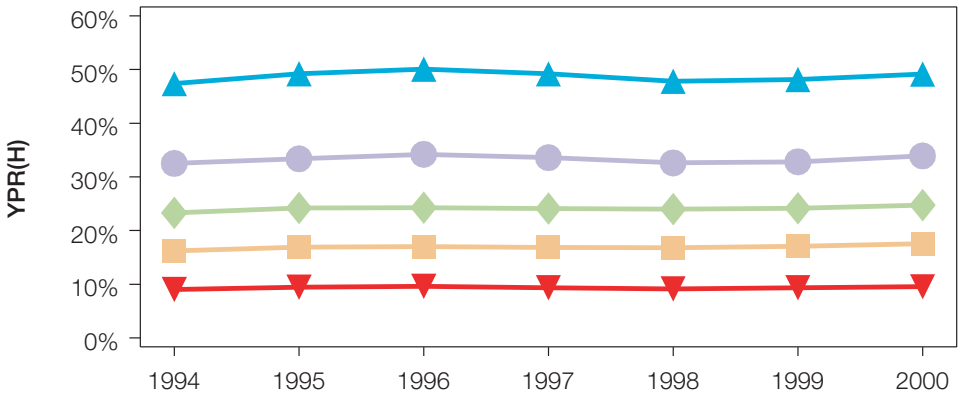



Figure 45(b) **Absolute change since 1994**

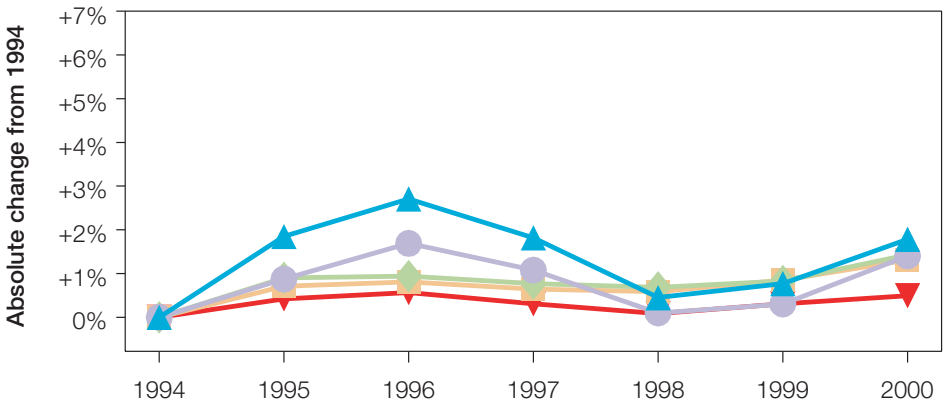



Figure 45(c) **Relative change since 1994**

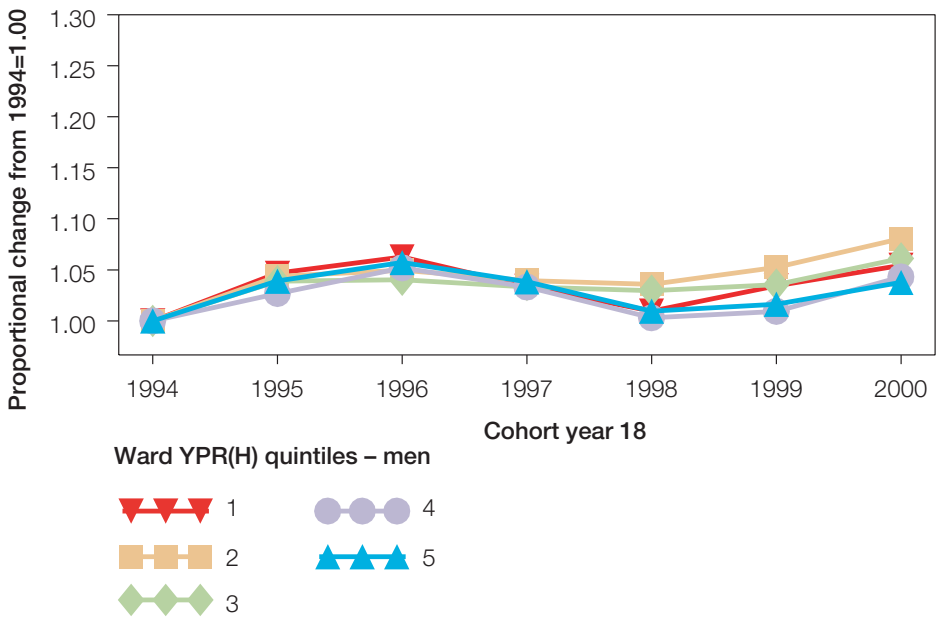
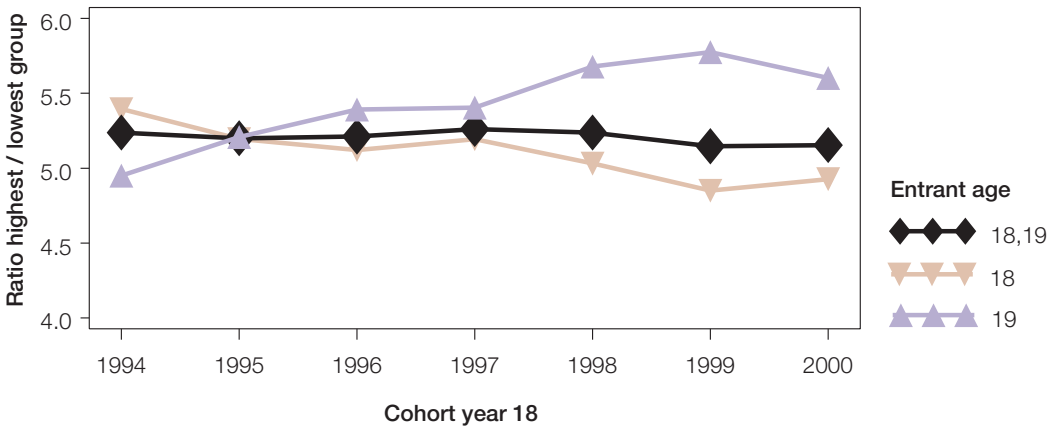


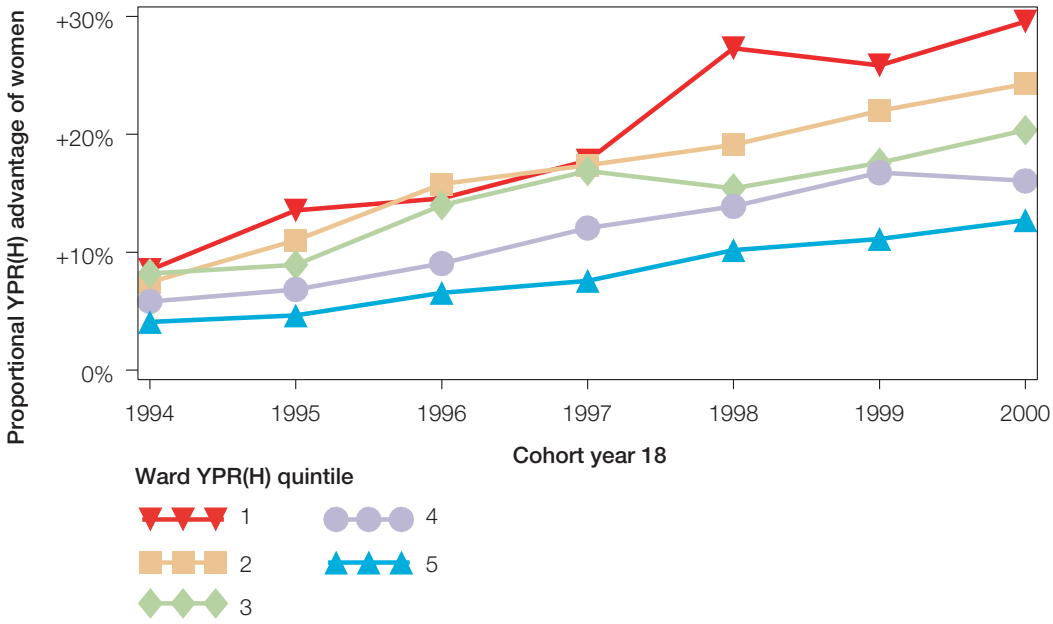
Figure 45(d) **Ratio of YPR(H) of fifth to first quintile**




Ranking the 1991 Census wards by whole-period male YPR(H) produces quintiles that differ from the equivalent whole-cohort results (Figure 28) in a necessarily mirror-like fashion to the quintiles for female YPR(H). The mean quintile rates are lower: the first quintile averages 9 per cent and the fifth 49 per cent, giving an average inequality ratio of 5.2, higher than the 4.8 for women. Absolute growth in participation over the cohorts is small with the highest – 1.8 percentage points for the fifth quintile – being clearly lower than the smallest rise observed for women. Similarly, proportional participation growth over the period is low and in a narrow range of between 4 per cent and 8 per cent, again all lower than the smallest proportional rise observed for women (12 per cent for the fifth quintile). The participation of the first quintile is unusual in showing marginal declines for the cohorts reaching 18 in 1997 and 1998; this pattern is usually confined to the higher participating quintiles. The small and evenly distributed proportional quintile participation growth means that the inequality ratio is unchanged (at 4.8) throughout the period, in contrast to the decline in inequality seen for women.

The proportional sex YPR(H) inequality is greatest for the lower participating quintiles and has grown more quickly (Figure 46). In 1994, women in the first quintile were 8 per cent more likely to enter HE than men; by the 2000 cohort this inequality had risen to 29 per cent. For the fifth quintile the participation advantage enjoyed by women was just 4 per cent for the 1994 cohort, and only rises to 13 per cent by the 2000 cohort, less than half the participation advantage of women from low participation areas.

Figure 46 **Proportional YPR(H) advantage of women over men by 1991 census ward participation quintile and cohort**



## 3.26 Summary of young participation by small area groupings

A summary of some of the results for the quintile trend analyses are given in Table 30 in Annex L. This table confirms the impression from the preceding results: that although each of the quintile analyses has distinctive features, there are a number of consistent patterns. These patterns and some possible explanations are described in this section.

### The degree of local participation inequality

All the results show a high degree of geographical inequality in young participation. The least advantaged 20 per cent of children have participation rates of between 8 per cent and 15 per cent depending on the areas and ranking statistics used. Children living in the most advantaged 20 per cent of areas have participation rates of between 44 per cent and 53 per cent, again depending on the areas and ranking statistics used. Measuring local participation inequality as the ratio of the participation of the most advantaged 20 per cent to that of the least advantaged 20 per cent gives a value of between 2.5 and 6 (depending on the geography used and the measure for ranking). Local participation inequality is notably more pronounced for young men than for young women.

In general the smaller the area unit used, the greater the measured inequality. For example, the lowest participating 20 per cent of parliamentary constituencies averaged 16 per cent participation; whereas the grouping based on census wards averaged 10 per cent. More extreme inequality ratios were found by ranking very small areas, such as individual enumeration districts, by their participation rate over the period. However, that grouping was found to be exaggerating inequality due to random fluctuations from the very small cohort counts. A partial correction for this indicated that the likely inequality ratio for these micro-areas in England is around 6.5 over the period.

Because the quintiles formed on geodemographic groups have a two-level structure, they are difficult to compare to the other areas used. (The groups are aggregates of very small areas but the ranking is on the smaller number of aggregated groups.) When ranked by participation, they provide a discrimination between high and low participation areas that is greater than that obtained by wards but below that found by the (corrected) ED rankings.

For any particular area unit, the maximum discrimination (by definition) is found by ranking on observed participation rates. Of the ranking measures used that do not directly measure young participation, those measuring educational advantage (such as the levels of HE-qualified adults recorded in the 1991 Census) were more discriminating than those measuring material disadvantage (such as measures of deprivation).

The IMD2000 showed an unusual set of results, with a particularly low inequality ratio of around 3 combined with exceptionally strong participation growth for the lowest quintile. Both these effects were due to the large number of wards in

London that are classified as deprived by the index, but have much higher participation than equivalent wards elsewhere in the country (see Annex J), and have shared in London's previously noted strong participation growth. This, together with the earlier finding of higher than expected participation in deprived Scottish constituencies, suggests that the relationship between measures of material deprivation and low participation is not straightforward. Because of this, measures of material deprivation could be unsuitable for a national grouping of areas intended to address low HE participation.

### Trends in the participation of advantaged and disadvantaged groups

The plots of the participation rates of different quintiles consistently show that the high degree of local participation inequality is persistent across the period, with no dramatic changes in relative participation. Looking closely at the small changes in the group participation rates gives some mixed messages on whether inequality is increasing or decreasing.

It is generally the case that the more disadvantaged quintiles have experienced the greatest proportional increase in participation across the 1994 to 2000 cohorts, typically in the region of 15-25 per cent. The more advantaged quintiles generally see lower proportional increases in their participation over the period, typically 5-10 per cent. This leads to the ratio of participation between the highest and lowest participating groups – the inequality ratio – declining slightly over the period.

However, the much higher participation rate of the most advantaged quintiles means that even these lower proportional increases translate into the highest absolute percentage point growth in participation over the period. For the most advantaged quintiles this will be 3-4 percentage points, compared to 1-2 percentage points for the disadvantaged quintiles. Thus although the relative gap has closed between advantaged and disadvantaged areas, the absolute gap between them has increased. One consequence of this is that the majority of the extra HE entrants resulting from increased participation over the period originate from already advantaged areas.

There are also differences between the quintiles in their growth trajectories over the period. All the quintiles have shared to some extent in the small overall rise in participation across the cohorts. For the more disadvantaged quintiles, this growth usually takes the form of a steady proportional growth across all the cohorts. However the growth in participation of the most advantaged quintiles shows a different pattern. Generally it starts strongly and is then checked, and frequently reversed, for the 1997 and 1998 cohorts, before returning to growth in the 1999 cohort. It is this mid-period checking of the growth of advantaged cohorts (compared to what would have happened if the pace of participation growth seen for the 1995 and 1996 cohorts continued across the period) that contributes significantly to the reduction in the inequality ratio over the period.

The inequality in participation for entry at age 18 or 19 shows a complex picture that is influenced by the high proportion of 19 year-old entrants from London. In general, inequality for entry at age 18 has declined over the period, whereas that for entry at 19 has stayed constant or risen slightly.

Looking at quintile trends separately by sex shows that the high proportional increase in participation seen for the lowest quintile is driven by young women. When defined by wards ranked on participation, the participation of women in the most disadvantaged quintile has risen by (proportionally) 26 per cent over the period, compared to a rise of just 5 per cent for young men in the same areas. For high participation areas, the participation growth for women (12 per cent proportionally) still outpaces that for men (4 per cent), but by a smaller margin. It is particularly noticeable that the growth in male participation is much the same across all the quintiles, resulting in little change in the inequality ratio for men over the period, whereas there is a decrease for women. As a result the sex inequality in participation is much more marked in low participation areas (where women were 29 per cent more likely to enter HE than men in 2000), compared to high participation areas (where women were 13 per cent more likely to enter HE than men). These results are unaffected by the removal of nursing students from the cohort(see Annex I).

### Possible causes of the small changes that are observed

Taken as a set, these quintile trend patterns provide no evidence for the hypothesis that the introduction of tuition fees and replacement of student grants with loans had an immediate overall deterrent effect on potential entrants from disadvantaged backgrounds. To the extent that any changes can be discerned, they are that relative inequality in young participation has declined very slightly but that the absolute participation gap between advantaged and disadvantaged areas (and the concentration of non-participants in disadvantaged areas) have increased. There is no consensus on which is the most appropriate measure of inequality.

As noted earlier, the marginal reduction in relative inequality is due to a steady proportional increase in participation for those from the most disadvantaged backgrounds, and a temporary decline in participation for the 1997 and 1998 cohorts from advantaged backgrounds. There are several ways these two relatively small changes may have arisen, leading to different interpretations.

### Residual temporal bias in the cohort estimates

The cohort estimates use an evidence-led combination of census and child benefit data to try to get the best possible small area cohort estimates for the period covered by this report. In the group analysis, further corrections are calculated to optimise the estimates for the different groups. However, given the retrospective nature of the estimates and the very small annual changes in participation detected, there is a risk that even very small errors in the estimates, of 1-3 per cent, could result in spurious evidence of participation movements. However, the persistence of the general patterns under different cohort estimate models and corrections, together with the scale of the errors required to account for the total rise in participation for the most disadvantaged groups, makes it unlikely that the patterns observed result from residual errors in the cohort estimates.

### High proportional increases for disadvantaged areas: changes in nature of disadvantaged areas

This explanation has two dimensions. One is that, over the period covered by this report, activities such as new building projects, local authority housing being bought by tenants, and the general rise or decline in attractiveness of an area, change the type of people living there. This would represent a weakness of the area grouping method. The second is that, through mechanisms such as targeting government resources or increasing economic prosperity, the disadvantage experienced by the poorest areas is reduced or, alternatively, the number of children experiencing a certain level of disadvantage is decreased. If a constant level of participation for a certain level of disadvantage is assumed, then a decrease in disadvantage would be expected to increase the participation of a fixed group of disadvantaged areas through time. This is not a weakness of the method as such, but would lead to a different interpretation of the results than if the levels of disadvantage stayed the same but the propensity to participate for a given level of disadvantage increased. Both interpretations would point to a decline in the young participation inequality experienced by the poorest 20 per cent.

In the group analysis, those micro-areas that are judged to have changed a great deal, primarily identified by unfeasibly large increases or decreases in population, are removed from the results. However, this will not guard against the 'gentrification' of a previously poor area. Given the very large difference in participation rates between types of areas, only a relatively small proportion of poor areas would need to undergo this kind of change to give the apparent rise in participation. This possibility cannot be ruled out. However, the very similar group trend results obtained from ranking the areas by participation *within* each cohort suggests that the results are not caused by some areas changing status over the period. It remains possible that areas could be more *internally* mixed towards the end of the period than at the start, indicating that England was becoming less polarised at the micro-area level. This seems unlikely to be happening on a large scale, and does not easily account for some features of the results such as the apparent temporary decline in participation for privileged areas.

There is evidence[28] that some measures of income and educational disadvantage experienced by the poor are improving. This is supported by the comparison of school performance quintiles to per cohort ward participation quintiles (Figures 42 and 43). The high proportional increase in participation for disadvantaged areas and the lower proportional rise for advantaged areas is reflected in the school quintile trends. These show a similar proportional growth pattern which, like the participation quintiles, also shows a marked decrease in inequality for the 1998 cohort. Further, the particular pattern of higher proportional participation increases for disadvantaged areas in London compared to the rest of England is also reflected in these school performance quintiles (see Annex J). It is therefore quite plausible that the slight rises in relative participation seen for the lowest participating areas may be caused by a reduction in the level of material or school-level educational disadvantage experienced by these areas rather than, or in addition to, an increase in participation for a given level of disadvantage.

### The mid-period arresting of the participation growth of advantaged areas: reduced attractiveness of UK higher education for young people from advantaged backgrounds

Most of the group analyses show a fall in participation, totalling 2 or 3 percentage points, spread over the 1997 and 1998 cohorts for the most advantaged quintile, with a reduced fall for the second most advantaged quintile and little or no decline for the other quintiles. There are two features of these cohorts that, combined, may explain this apparent fall in participation for the more advantaged quintiles.

The first is that the cohort size was increasing rapidly in these years. This is especially true for the 1997 cohort, where even a rise in HE entrants of 8 per cent could not keep pace with the 9 per cent cohort increase, with the result that participation fell slightly (Figure 2). This sudden increase in entrants would be expected to put pressure on places. In addition to the fall in participation, there is evidence for this in that many institutions over-recruited against HEFCE student number targets in 1997. Because these targets relate to total numbers, institutions could also be under pressure in their recruitment in the following year.

It is noticeable that the majority of institutions experiencing this pressure on places for these years are the kind of universities that are preferred by those from advantaged backgrounds[29]. This raises the possibility that the demographic pressure on places may have disproportionately affected those from high participation backgrounds. In these years potential entrants may have applied to a set of these HEIs and, because of the increase in cohort size and particular demand at these institutions, ended up with no offers. Because of the over-recruitment, there would be little opportunity to obtain a place in clearing unless they were very flexible about their choice of institution. If potential entrants from advantaged backgrounds, quite possibly with high A-level results, did not want to reconsider their choice of institution then they might decide to wait another year (and perhaps in the intervening period decide to do something other than higher education) or to seek an HE course overseas – both of which could reduce the apparent participation.

Entrants from these cohorts (non-deferred 19 year-olds only for the 1997 cohort, all for the 1998 entrants) would also have been the first to encounter tuition fees in 1998. The hypothesised 'deterrent' effect of having to pay for tuition that was previously free to the entrant is often assumed to apply to those from low participation backgrounds who did not realise that they would be exempt from the fee. However, it is those from high participation backgrounds who are much more likely to have to pay the tuition fee (see Table 2). It is possible that this switch from 'free' tuition to a fee for these groups may have marginally (and not necessarily in a rational fashion, see Annex G) increased the attractiveness of fee-charging courses overseas (particularly if a place at the desired set of UK HEIs could not be obtained), or of other non-HE career paths. This would have reduced the recorded participation of these groups.

Both of these effects are likely to be very small and could only influence already marginal decisions. However the changes observed in participation rates are also small: only around 1 in 50 of entrants from advantaged backgrounds would have to change their behaviour to account for the observed fall in participation.

# 4 Results: high and low participation areas and their entrants

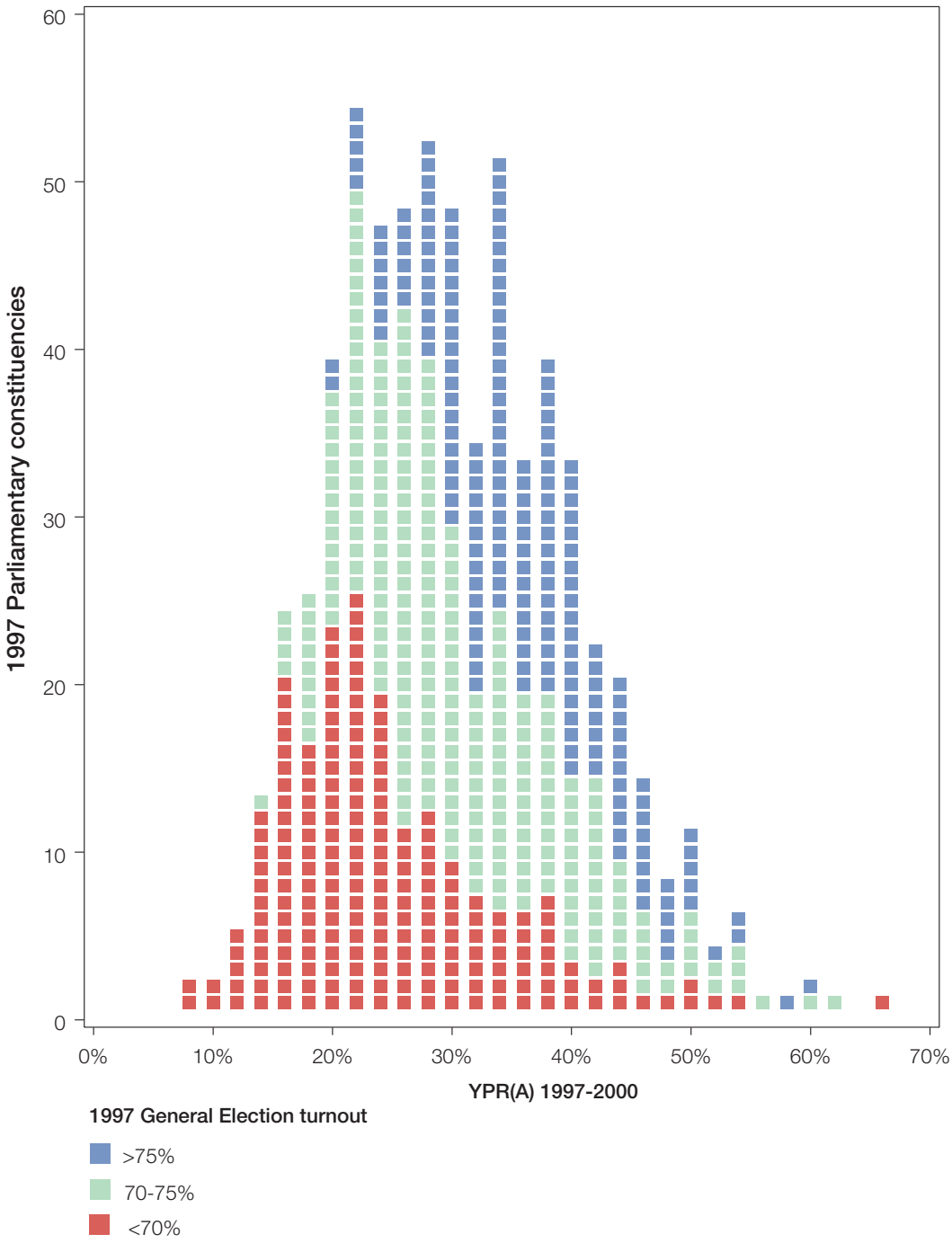
The problematic task of explaining the mechanisms that cause such large differences in young participation rates between areas is beyond the scope of this report. However, looking at the nature of these areas can show in what ways high and low participation areas differ, without implying that these differences cause the inequality in young participation. Similarly the characteristics of entrants from high and low participation areas can be compared, though this must be done cautiously because the entrants are a selected sub-group of the area population. This section of the results looks at the nature of high and low participation areas, and at how the entrants from these areas differ in their characteristics and post-entry experiences.

## 4.1 Differences between high and low participation areas

The extreme differences in HE participation observed between areas do not occur in isolation; these areas differ in many other ways. Some of the geographical differences between high and low participation areas are considered elsewhere in this report, such as their regional concentration (Annex J) and local patterns such as the spatial association with school results (Figure 24). Figure 47 recasts the distribution of rates for parliamentary constituencies from Figure 20. It demonstrates that even such large areas can show a clear association between the level of young participation and other area characteristics, in this case voter participation in the 1997 General Election. Using smaller areas can offer a more detailed picture of these kinds of area associations.

Two methods are used here to investigate differences in the physical and social environment between small areas of high and low participation. To look at how wards differ between participation quintiles, a range of 1991 Census and deprivation indices are compared against participation rates. The descriptions and selected marketing statistics for geodemographic groups are used to access a richer but less well defined way of describing areas.

Figure 47 **Participation and 1997 General Election turnout for parliamentary constituencies**



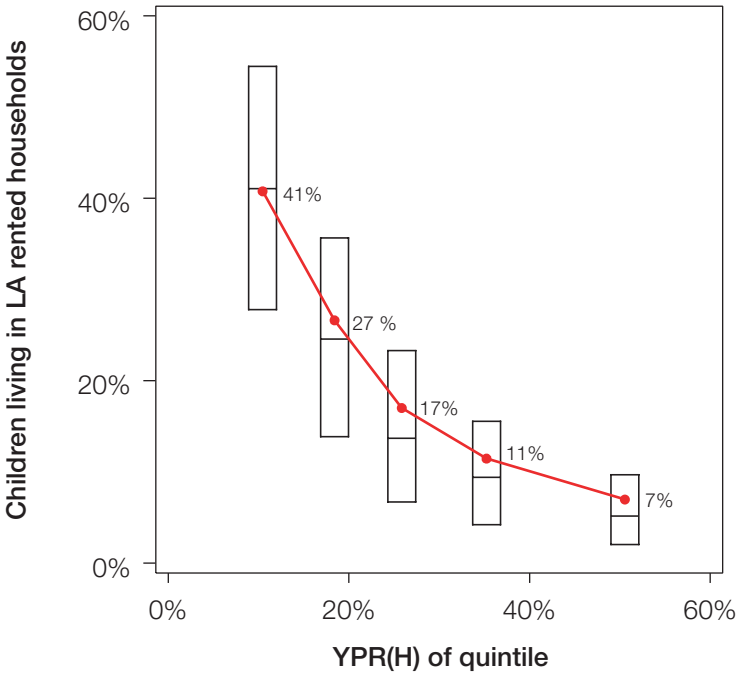

*Note: Figure shows the YPR(A) of four combined cohorts 1997 to 2000. Each square represents one of the 641 parliamentary constituencies in Great Britain. The shading of each square indicates the recorded voter turnout in the 1997 General Election.*

## 4.2 Young participation and 1991 Census area statistics

A quantitative way of describing the nature of the areas that make up the participation quintiles is to take a statistic for each small area and to look at the mean or distribution of that statistic for each participation quintile. These results mainly use 1991 Census wards and their whole-period YPR(H) quintiles. The descriptive statistics are drawn from the 1991 Census, which is a good temporal match for describing the nature of each area for the period in which most of the cohort would have been growing up. Where possible, the statistics used are defined to focus closely on children: for example, the proportion of children living in detached houses is used rather than the proportion of houses that are detached. This helps to reduce the problem that overall area statistics sometimes do not describe the circumstances of the cohort very well if children of that age are untypical of the area.

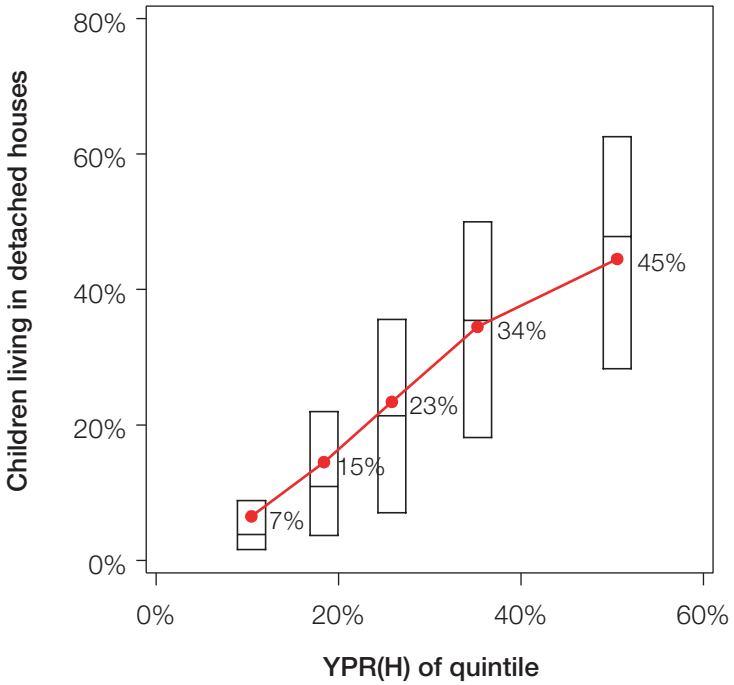
There are too many wards to show the association clearly as a simple scatter plot. An easy solution to this is to plot just the mean values of the participation and the associated measure for each quintile, but this conceals the important information about how variable the measure is within a quintile. The summary method adopted in the following charts is to show the cohort-weighted quintile mean (joined line), interquartile range (box) and median (line within box) for each measure. Figures 48 to 57 use 1991 Census area statistics or deprivation indices derived from them. Figures 58 and 59 use quintiles formed on electoral wards (1998 boundaries) to look at the association between young participation and measures from the IMD2000.

Figure 48 **Children living in households renting from a local authority (1991)**



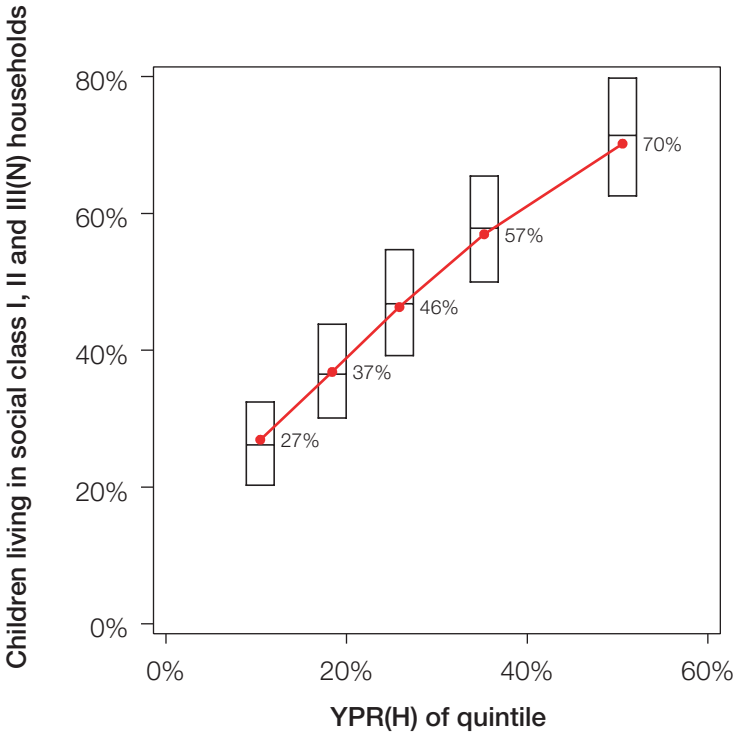

The proportion of children living in accommodation rented from local authorities in 1991 is a strong marker of low participation areas. Many of the very lowest participating wards are formed from large council estates. In contrast this form of tenure is uniformly rare in high participation neighbourhoods.

Figure 49 **Children living in detached houses (1991)**



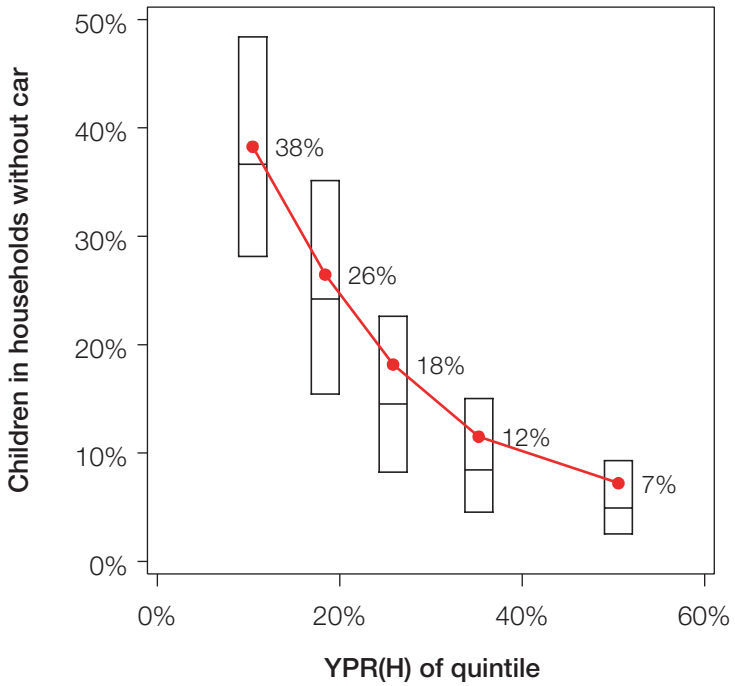

Along with tenure, housing type is one of the key ways that neighbourhoods differ from each other. Detached houses are generally the largest and, within a given neighbourhood, the most expensive to own or rent. This chart shows that low participation neighbourhoods had very few children living in detached houses in 1991. The mean proportion of children who do so increases across the participation quintiles (though there is a lot of overlap with the middle quintiles); in high participation neighbourhoods many wards had over half of their children living in detached houses.

Figure 50 **Children living in social class I, II and III(N) households (1991)**



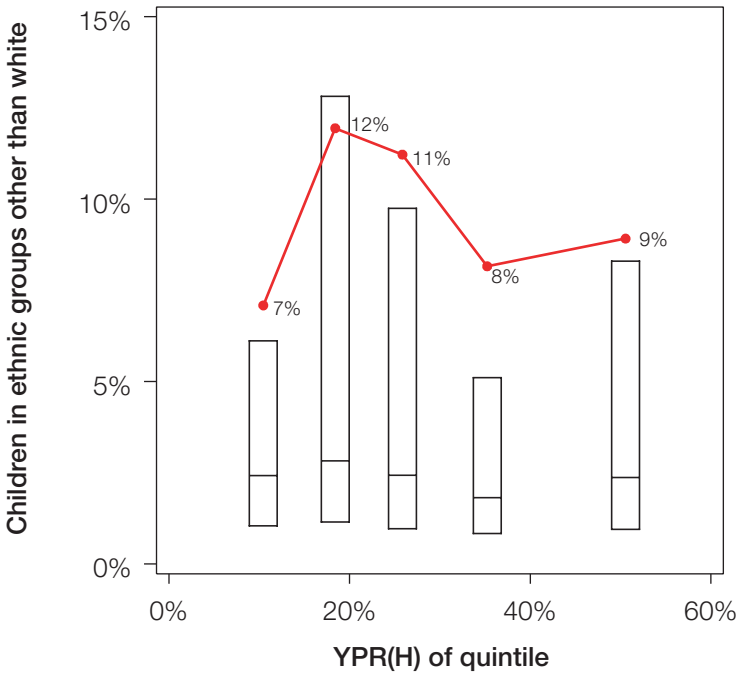

In high participation areas, the mean proportion of children who in 1991 were in families where the household occupation class was recorded as professional (I), managerial and technical (II) and skilled non-manual occupations (III[N]) was 70 per cent. Very few wards in this quintile recorded less than 60 per cent of children in these social classes. This proportion falls in a near linear fashion across the quintiles, to reach a mean 27 per cent for the first participation quintile, with few wards in this quintile having more than a third of children in these social classes. Even though the quintiles are distinctly different in their proportion of children living in these social class I, II and III(N) households (in particular the median is generally not contained within the adjoining quintiles' inter-quartile range), the ratio of the means for the first and fifth quintiles is only about half that observed for young participation.

Figure 51 **Children living in households with no car (1991)**




The census derived statistic of not having a car is frequently used in deprivation measures. It has a weakness in that the utility of a car, and therefore the degree of deprivation implied by not having access to one, varies geographically. In particular, affluent central London families may choose not to own a car, whereas a poorer family in a suburban or rural area may prioritise this expenditure. Despite this weakness there is a clear association: children living in the first quintile are five times more likely to be in households without a car than children in the fifth quintile. The reverse pattern is observed when the proportion of children in households with two or more cars is examined.

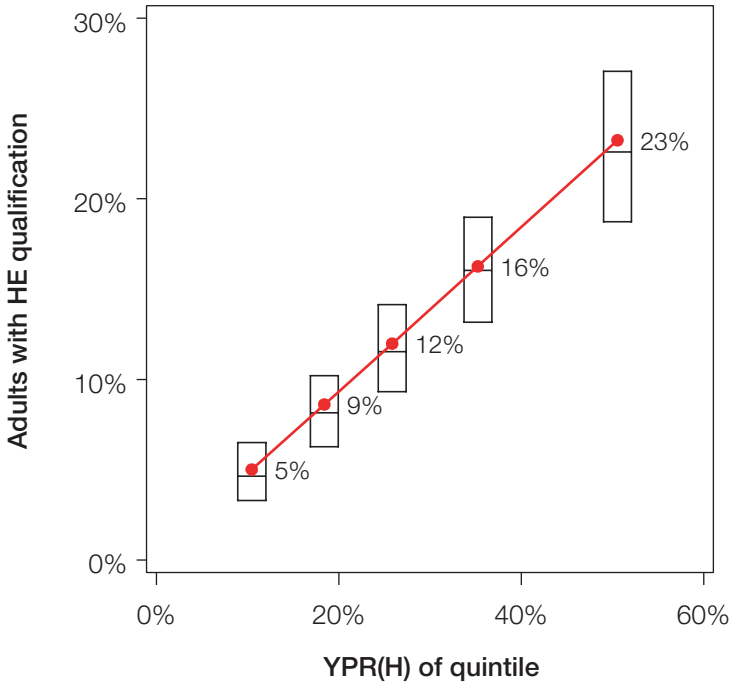
Figure 52 **Ethnic minority children (1991)**




*Note: This measure shows the unusual feature of the statistic mean being outside the interquartile range. This is a consequence of the highly skewed distribution of ethnic minority children where a relatively small number of wards are home to a high proportion of the total population.*

The level of young participation of different ethnic groups is a complex topic (for example, young participation rates are not uniform across different ethnic minority groups). It is not addressed in this report[13]. Figure 52 shows that the distribution of children from all ethnic minority groups (from the 1991 Census), taken as a single group, does not have a clear pattern across the ward participation quintiles. The proportion of children that are from an ethnic minority group varies widely between wards within a quintile. Neither high nor low participation areas can be simply classified as having high or low proportions of children from ethnic minority groups in 1991.

Figure 53 **Adults with a higher education qualification (1991)**




The proportion of adults with an HE qualification in 1991 shows a very strong association with young participation. The discrimination between the quintiles is good, with limited overlap of the interquartile ranges. The first participation quintile has a mean proportion of qualified adults of 5 per cent. This increases linearly with young participation to reach 23 per cent for the fifth quintile, giving a ratio of the fifth to first quintiles of 4.7 – very close to that observed for young participation. This suggests that the proportion of graduates living in an area is strongly associated with the young participation rate, which explains why ranking areas by qualified adults shows good discrimination in the quintile analysis (for example, Figure 33).

## 4.3 Young participation and area deprivation measures

Figure 54 **The Department of the Environment (DOE) Index**

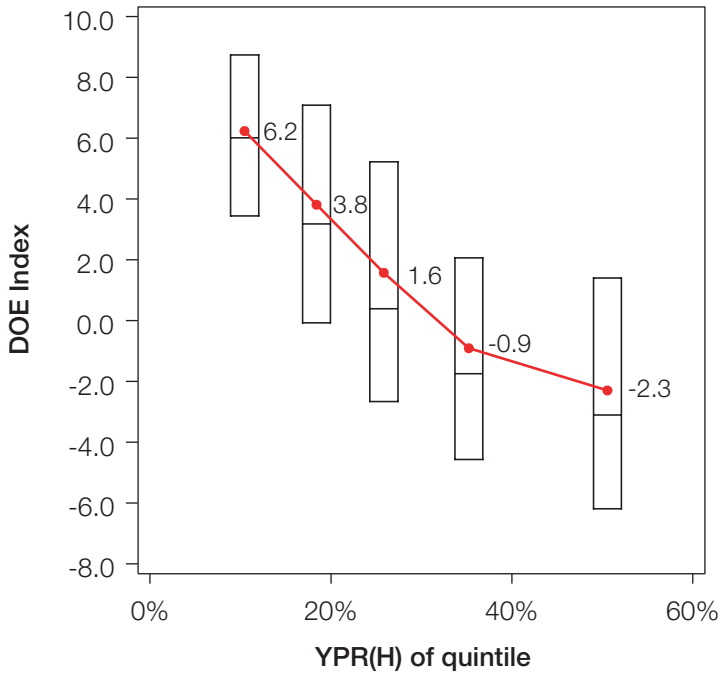



Figure 55 **The Jarman Underprivileged Area Index**

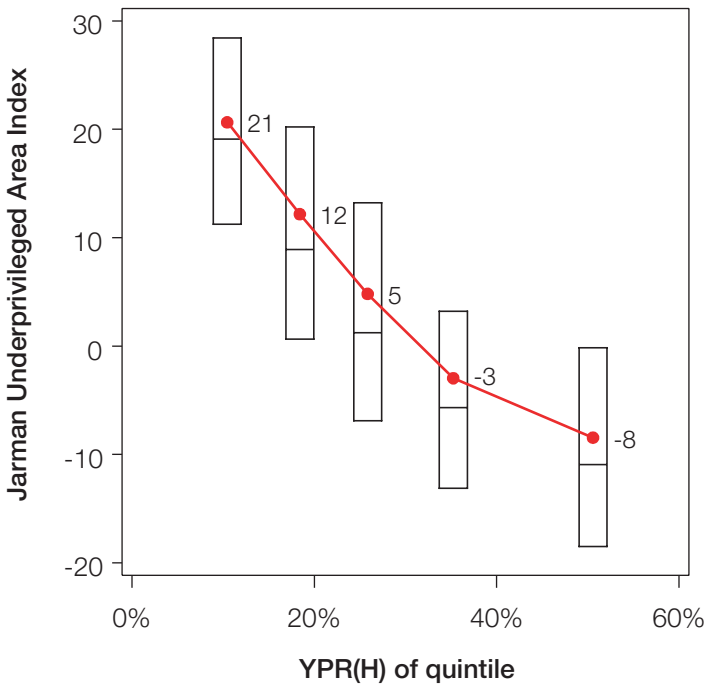


Figure 56 **The Carstairs Index**

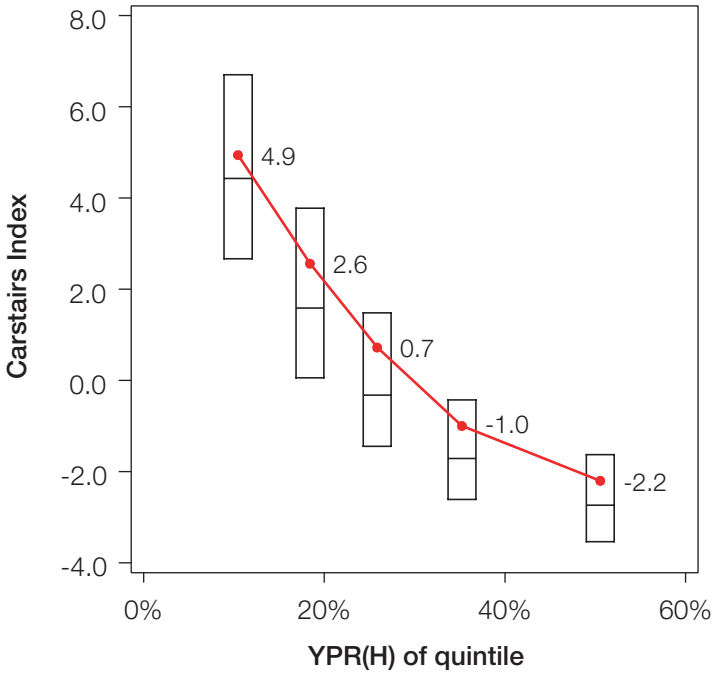
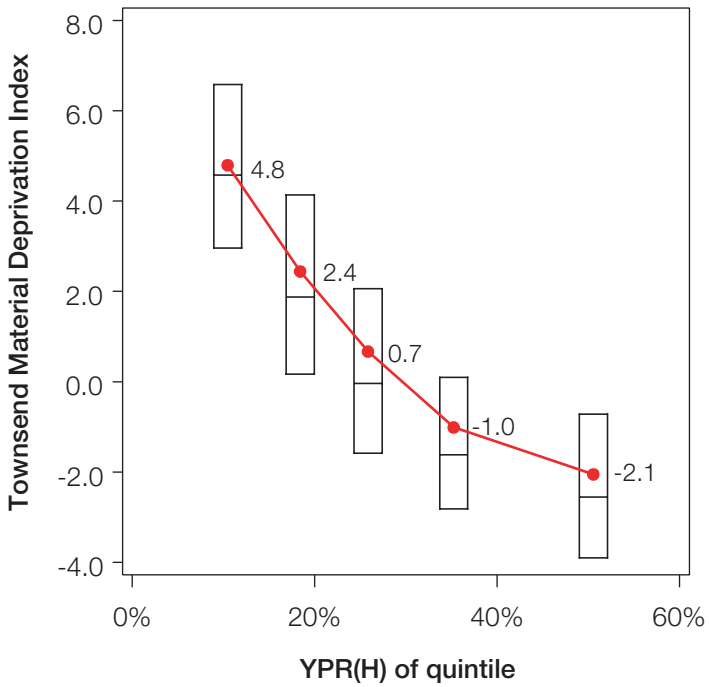



Figure 57 **The Townsend Material Deprivation Index**



Figures 54 to 57 show the relationship between the ward participation quintiles and a set of four deprivation indicators based on the 1991 Census[30,31]. Although there is a clear pattern – with the lowest participating quintiles being, on average, the most deprived – the discrimination between quintiles is not good, especially for the above average participation areas. This is to be expected, as the purpose of these indicators was to identify highly deprived areas rather than to discriminate between different high levels of advantage. The notably poor discrimination between participation quintiles of the DOE and Jarman indicators in particular is probably due to their high weightings for measures of pensioners and residents born in New Commonwealth countries, which are not directly associated with young participation.

Figure 58 **Rank position of ward in the IMD2000**

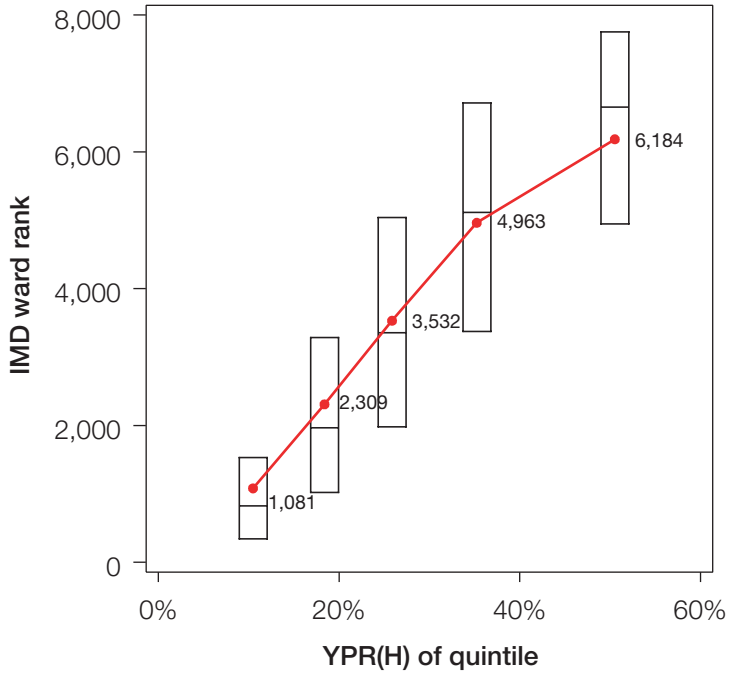



Figure 59 **IMD2000 Child poverty: proportion of children living in households receiving means-tested benefits**

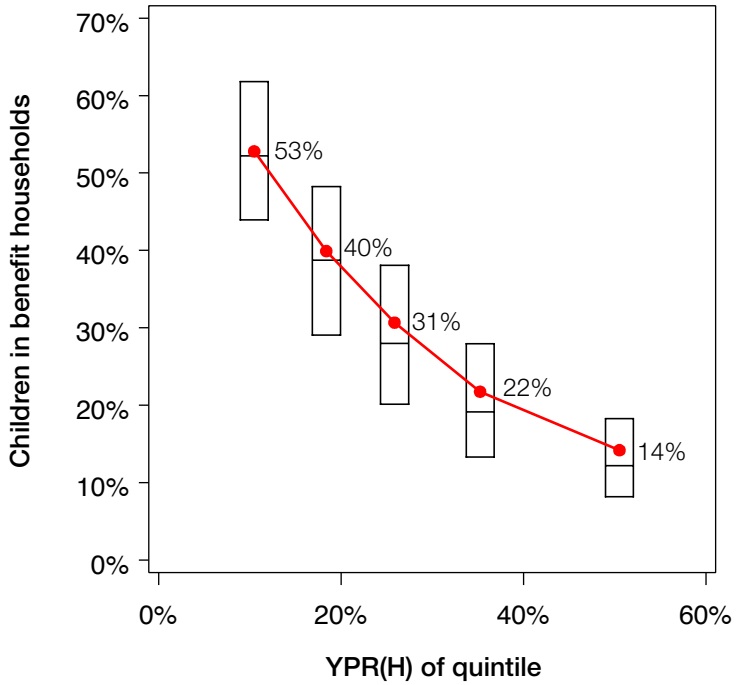


Figure 58 shows the distribution of the ward IMD2000 ranks within each quintile. Figure 59 shows the distribution of the child poverty measure (proportion of children living in households that receive means-tested benefits) from the IMD2000. In contrast to the limited set of 1991 Census variables used in the DOE and other census deprivation indices, the IMD2000 draws on a broad range of data sources (mainly social security data sets) from, typically, 1998 and 1999.

Both the IMD measures show a clear association with young participation with, as in the other deprivation indicators, the best discrimination for low participation areas. Wards in the first quintile typically have over half their children living in households in receipt of means-tested benefits, and 75 per cent of these wards are ranked in the 1,500 most deprived wards (out of the 8,400 1998 boundary electoral wards[32]). Wards in the fifth participation quintile have typically 12 per cent of children living in households in receipt of means-tested benefits, and 75 per cent of these wards are ranked in the least deprived 3,500 wards. The ratio of children in households receiving means-tested benefits between the first and fifth quintiles is 3.8, lower than that seen for young participation or on some of the 1991 Census measures. The role of regional differences in weakening the association between the IMD2000 measures and young participation is examined in Annex J.

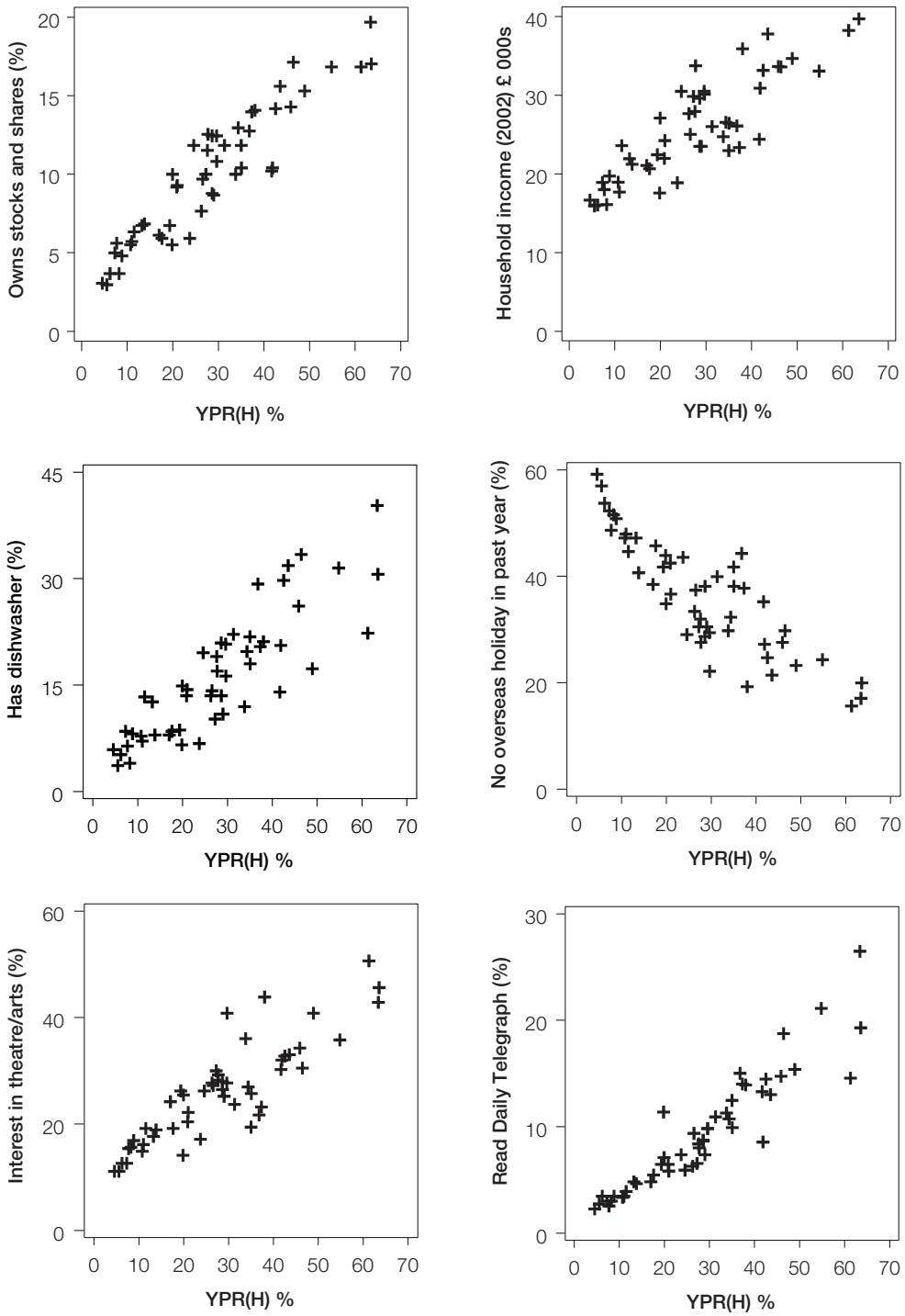
## 4.4 Using geodemographic groups to describe areas

One simple method to assess the different nature of high and low participation areas is to use the ready made descriptions of clusters that come with geodemographic classifiers. Tables 31, 32 and 33 in Annex L provide YPR(H) and quintile assignments for the geodemographic classifiers used in this report. The very lowest participating area types typically have shorthand names such as 'Council Areas, High Unemployment, Lone Parents' or 'Peripheral Poverty', indicating areas of local authority rented housing with low household incomes. In contrast the highest participating area types are typically described as 'Wealthy Suburbs, Large Detached Houses' or 'Very High Income Professionals in Exclusive Areas', referring to areas with spacious owner-occupied accommodation with high incomes from professional, most likely graduate entry, occupations.

Using these type names (and the more detailed type descriptions to be found in the documentation of the classifiers) has the advantage that they draw on a wide range of data to give a rich but concise description of what the areas, and the people living there, are like. One drawback is that the type description, which tends to focus on what makes the group different (such as an above average proportion of retired people), may not well describe the circumstances of families with children. Additionally, if the defining component of the type is a factor not especially related to participation, such as family stage or retired people, then there is a risk that the areas that make up the geodemographic type could have very different participation rates. This is analogous to the potential problem of ward heterogeneity looked at in Annex F.

One way of reducing the reliance on the group descriptions is to plot a quantitative statistic against participation for each geodemographic type. This avoids the subjectivity of the type descriptions while retaining the advantage of drawing upon a wide range of commercial and marketing data that is not available through standard area statistics. However, the potential problem remains of some types being defined on dimensions that are not associated with participation; and many of the data items used are from self-selecting rolling consumer surveys or product registrations. For these reasons the associations shown can only be taken as indicative and should be used cautiously. Figure 60 shows some selected ACORN type statistics plotted against YPR(H) rates (1994 to 2000 cohorts combined). The small number of ACORN types compared to wards means that each type can be plotted individually. However this does conceal variations within each group (which can exaggerate the impression of association); and each point has the same visual weight though the types vary widely in size.

Figure 60 **YPR(H) 1994-2000 for 1991 ACORN types against selected ACORN type statistics**




*Note: Household income estimates (2002) provided to HEFCE by CACI Limited. All other statistics from the ACORN documentation of the 1991 Census based 'ACORN: the complete consumer classification', published by CACI Limited. These data items are collected through consumer surveys and product registrations and should be taken as guide values only. Additionally these items are calculated for the ACORN groups current at the time. Due to continuous updating of the ACORN groups, these areas will not be exactly the same as those used to calculate the YPR(H). ACORN types with annual cohorts typically less than 1,000 are excluded.*

These plots reinforce the impression from the census and deprivation measure analyses that high and low participation areas can be broadly characterised as rich and poor respectively. The household income estimate plot shows that the lowest participating types have the lowest household incomes and the highest participating types have the highest incomes, but the range of reported incomes is quite narrow. In a similar result to the IMD2000 measures, it is also clear that there is a wide range of participation rates for middle ranking incomes, though this might be reflecting the difficulty of defining and collecting income information. Using share ownership as a measure of financial resources gives a better discrimination between areas: share ownership is virtually absent from low participation types, rising steadily with participation to reach highs for the highest participating types.

Households in low participation areas have low levels of ownership of material household goods such as dishwashers, and residents of the lowest participating areas are markedly less likely to go on overseas holidays. Measures of cultural preferences between the types, such as choice of daily newspaper or leisure interests, show a gradient from low to high participation areas that is in many cases greater than the measures of material advantage. This is reminiscent of how the census measures of educational advantage, such as the proportion of adults with an HE qualification (Figure 53), showed a stronger association with young participation than some census measures of material advantage such as house type or car ownership. Given the wide range of the proportions of young participation and the different measures it is likely that at least some of the association observed between these area group measures would also be present at the individual level[33].

Doubtless these associations are picking up different dimensions of the profound ways in which high and low participation areas differ, rather than suggesting, for example, that dishwasher ownership or choice of newspaper are *causing* these differences in participation rates. However, a factor such as a small home and the consequent overcrowding can be read as an indicator of low material resources but also might have direct negative consequences, such as no quiet area for a child to do homework. Similarly, that children living in low participation areas are less likely than their peers to be introduced to overseas travel or certain cultural activities is probably primarily a reflection of the broad differences between high and low participation areas. But, by missing out on the type of experiences that may later be advantageous for admission to particular types of HE courses, they may also suffer a small further disadvantage.

## 4.5 Differences between entrants from high and low participation areas

Since the participation measures in this report are based on individualised student records it is possible to look at the characteristics of entrants by area group in an analogous way to looking at the circumstances of the cohort by area group in the preceding section. However, it is more problematic to interpret the analysis of entrants by area group, especially for entrants from the lowest participation quintile. Entrants from these areas are unusual, so any attributes they show as a group, for example their social class, are unlikely to be shared by the majority of the cohort in these areas. Additionally any small amounts of participation heterogeneity within low participation areas become magnified in the entrants from these areas (see Annex F). Both these factors will act to reduce the differences between entrants from the participation quintiles. Nevertheless, examining entrants can provide information about the differences in characteristics and experiences of those from different area participation backgrounds, even if it must be remembered that these differences will not necessarily be reflected by the cohorts living in these areas.

Table 2 shows the proportion of English entrants to HE from the 2000 cohort with selected characteristics. The proportion (in each case only of entrants where there are known data) with the characteristic is shown for all entrants, and entrants from each of the five whole-period YPR(H) quintiles (as used in Figure 28). These results show that there are distinct differences in the nature of entrants from different area participation backgrounds, despite the factors mentioned earlier that act to reduce such differences.

The proportion of entrants assigned by UCAS to skilled manual, partly skilled and unskilled occupations – social classes III(M), IV and V – from the first quintile is nearly three times the proportion from the fifth quintile (43 per cent and 16 per cent respectively). There is a similar ratio of difference in educational background: entrants from the fifth quintile are, at 24 per cent, nearly five times likely to have attended an independent school as their last institution before entry into HE (not necessarily the secondary school) than those from the first quintile (5 per cent). The HESA record indicates whether an entrant pays *all* of the tuition fee without any support from their LEA or the Student Loans Company (SLC). This shows a more modest 2:1 differential between the quintiles, with 52 per cent of entrants from the fifth quintile being self-funding compared to 26 per cent from the lowest participating quintile.

The differences in choice of entry route are smaller. Those who enter from low participation areas are, overall, only marginally more likely to have used the UCAS clearing system than other entrants. The special case of entry at 19 through the UCAS deferred entry route (that is, gaining a place in the UCAS application cycle a year before the intended entry point, usually associated with a planned 'gap' year of activity) does show a more pronounced pattern. Those who enter from high participation areas are twice as likely to defer in this way than those who enter from low participation areas. In contrast, entry at 19 not through this deferred route shows only small differences, with this option used slightly more by those from a low participation area.

Table 2 **English YPR(H) entrants (2000 cohort) with selected characteristics by ward participation quintile**

| Entrant characteristic | Proportion (%) of entrants with characteristic | | | | | |
|---|---|---|---|---|---|---|
| **Background** | **All** | **1** | **2** | **3** | **4** | **5** |
| Social class IIIM, IV, V (UCAS entrants) | 25 | 43 | 36 | 30 | 23 | 16 |
| Entrant pays all of tuition fee | 42 | 26 | 32 | 37 | 43 | 52 |
| 16-18 institution is an independent school | 15 | 5 | 7 | 10 | 14 | 24 |
| **Entry route** | | | | | | |
| Entry at 19 through a deferred UCAS application | 8 | 5 | 6 | 7 | 8 | 10 |
| Entry at 19 not through a deferred UCAS application | 26 | 27 | 28 | 26 | 25 | 25 |
| Entry through the UCAS clearing process | 14 | 15 | 15 | 15 | 13 | 13 |
| **Entry qualifications** | | | | | | |
| Best entry qualification not A-level | 13 | 20 | 18 | 15 | 13 | 10 |
| A-levels 1-17 points or non A-level entry qualifications | 47 | 61 | 57 | 52 | 47 | 39 |
| **Course choice** | | | | | | |
| Entry to medicine, languages, humanities or agriculture | 15 | 11 | 11 | 13 | 15 | 18 |
| Entry to education, mathematics, computing and nursing | 18 | 21 | 21 | 20 | 18 | 16 |
| Studying at HND/HNC level | 6 | 8 | 7 | 6 | 6 | 4 |
| **Institution choice** | | | | | | |
| HEI within 30 minutes of home | 15 | 25 | 22 | 17 | 13 | 10 |
| Lives with parents during term time | 21 | 34 | 31 | 24 | 19 | 15 |
| Studying at UK HEI outside England | 6 | 4 | 4 | 5 | 6 | 7 |
| Studying at HEI formerly UFC funded | 49 | 35 | 39 | 44 | 49 | 58 |

*Note: The proportion shown is of entrants where the characteristic is known (that is, where the characteristic is unknown, entrants are excluded). The proportion of all entrants with known characteristics ranges from 90 per cent for UCAS-derived measures (due to non-UCAS entrants and unknowns in the UCAS data) to 100 per cent for measures such as course subject. Entrants in this table are YPR(H) entrants, so that the small numbers of entrants to HE courses returned by FEIs are not included*

Entrants from low participation areas are around twice as likely not to have A-levels (as their highest qualification) than those who enter from high participation areas. Taking the non-A-level qualifications and A-levels with a combined A-level point score of 1-17 point[34] gives a group of qualifications broadly equivalent to those considered as leading to an increased risk of young people failing to complete their courses (as used by HEFCE in its funding models for teaching[35]). These qualifications are presented by 61 per cent of those who enter from the lowest participation quintile and 39 per cent of those who enter from the highest participation quintile.

There are modest differentials in the subject of study. The most marked are for courses in medicine, languages, humanities or agriculture, which are taken by 18 per cent of entrants from the fifth quintile compared to 11 per cent of those from the first and second quintiles. In contrast, education, mathematics, computer sciences or nursing are taken by 21 per cent of entrants from the first quintile compared to 16 per cent from the fifth quintile. Entrants from low participation areas are twice as likely to be studying for an HND or HNC as those who enter from high participation areas but, at 8 per cent of entrants from low participation areas, it is still a minor component of the quintile participation.

Entrants from the lowest participation quintile are more likely, at 25 per cent, than those from a high participation area to be studying at a local HEI (approximately defined here as within a 30 minute car journey from the pre-application address). This is supported by the higher, at 34 per cent, proportion of entrants from low participation areas who are indicated on the HESA record as living at their parental home while studying, which compares to 15 per cent of entrants from high participation areas. Although interesting, neither of these results demonstrates a difference in *preference* for attending a local HEI: this would require a more complex analysis considering the relative geographies of where the entrants live and the availability and nature of local HEI places.

These results show that there are differences between entrants by their participation background. For example, entrants from low participation areas are more likely to be living in the parental home, to offer low entry qualifications and to study for an HND than those from high participation areas. However, such is the skew of entrants towards those from high participation areas that a characteristic which is associated with entrants from low participation areas (such as low entry qualifications) is, overall, shown mostly by those from high participation areas. This important point is illustrated by Table 3, which gives the share of entrants with a particular characteristic over the five ward participation quintiles.

Table 3 **Distribution of English YPR(H) entrants from the 2000 cohort across ward participation quintiles by selected characteristics**

| Entrant characteristic | Number | Share (%) across quintiles of entrants with this characteristic | | | | | |
|---|---|---|---|---|---|---|---|
| **Background** | | **1** | **2** | **3** | **4** | **5** | **All** |
| Social class IIIM, IV, V (UCAS entrants) | 37,000 | 13 | 19 | 22 | 23 | 23 | 100 |
| Entrant pays all of tuition fee | 68,000 | 5 | 10 | 17 | 26 | 43 | 100 |
| 16-18 institution is an independent school | 22,000 | 3 | 6 | 12 | 23 | 57 | 100 |
| **Entry route** | | | | | | | |
| Entry at 19 through a deferred UCAS application | 13,000 | 5 | 10 | 16 | 26 | 43 | 100 |
| Entry at 19 not through a deferred UCAS application | 43,000 | 8 | 15 | 19 | 24 | 34 | 100 |
| Entry through the UCAS clearing process | 23,000 | 8 | 15 | 20 | 23 | 33 | 100 |
| **Entry qualifications** | | | | | | | |
| Best entry qualification not A-level | 22,000 | 11 | 18 | 21 | 24 | 26 | 100 |
| A-levels 1-17 points or non A-level entry qualifications | 77,000 | 10 | 17 | 20 | 25 | 29 | 100 |
| **Course choice** | | | | | | | |
| Entry to medicine, languages, humanities or agriculture | 24,000 | 6 | 10 | 17 | 25 | 42 | 100 |
| Entry to education, mathematics, computing and nursing | 30,000 | 9 | 16 | 21 | 25 | 30 | 100 |
| Studying at HND/HNC level | 9,000 | 11 | 17 | 21 | 25 | 26 | 100 |
| **Institution choice** | | | | | | | |
| HEI within 30 minutes of home | 23,000 | 13 | 20 | 21 | 22 | 23 | 100 |
| Lives with parents during term time | 33,000 | 12 | 20 | 21 | 22 | 24 | 100 |
| Studying at UK HEI outside England | 9,000 | 5 | 11 | 17 | 27 | 40 | 100 |
| Studying at HEI formerly UFC funded | 80,000 | 5 | 11 | 17 | 25 | 41 | 100 |
| **All entrants** | **165,000** | **8** | **14** | **19** | **25** | **35** | **100** |
| *(Cohort)* | *568,000* | *20* | *20* | *20* | *20* | *20* | *100* |

The high YPR(H) of the fifth quintile means that 35 per cent of entrants come from these areas (where 20 per cent of the English cohort live). In contrast, although the same share of the cohort, 20 per cent, lives in wards in the first quintile, only 8 per cent of entrants come from these areas. Looking at entrants with characteristics that are associated with high participation areas acts to widen this differential. For example, 57 per cent of entrants from independent schools come from wards in the fifth quintile, and only 3 per cent from wards in the first quintile.

The differential is reduced when looking at characteristics that are associated with entrants from low participation areas. However, the large number of entrants from high participation areas means that entrants with these characteristics still come predominantly from high participation backgrounds. For example, despite entrants from the first quintile being twice as likely to study for an HND as those from the fifth quintile, of those entrants studying at HND or HNC level 51 per cent come from the highest participating 40 per cent of wards, compared to 28 per cent from the lowest participating 40 per cent of wards. For those with lower A-level points or without A-levels (considered as a group to be at increased risk of non-completion), 54 per cent come from the highest participating 40 per cent of wards and 27 per cent from the lowest participating 40 per cent of wards.

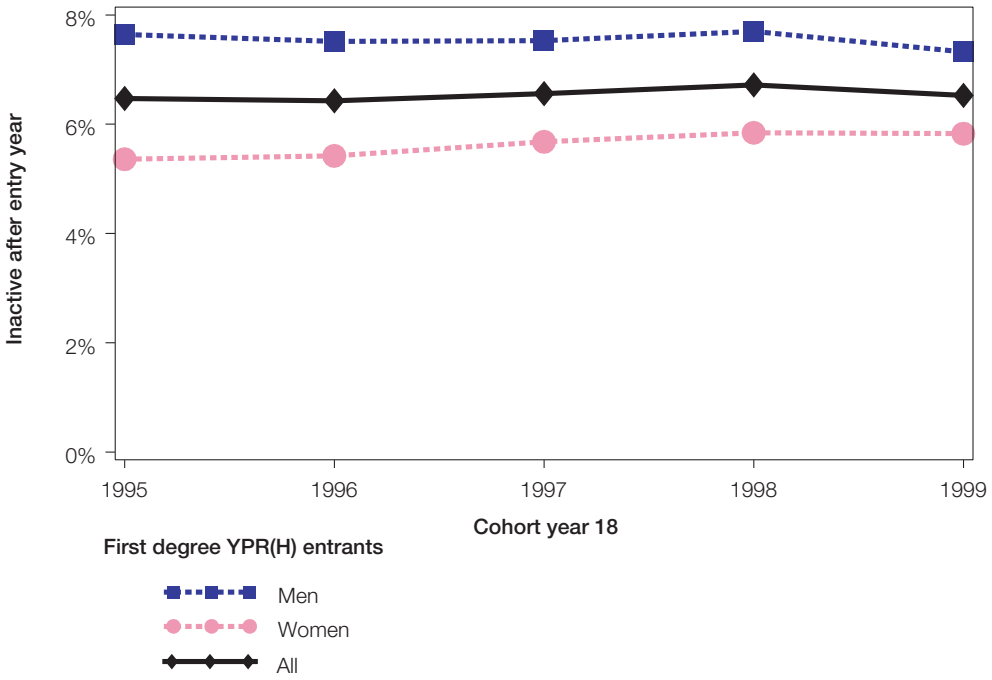
## 4.6 Differences in post-entry experiences for entrants from high and low participation areas

Entering HE is seen by most individuals, and is implied by government statements on the economic value of HE, not as an end in itself but as a means to an HE qualification. This is important, as many of the benefits of HE, such as access to a graduate career, depend not upon having entered HE but instead on gaining a qualification. The individualised base of the participation results, with the student tracking techniques developed by HEFCE[36], allow the progress of degree entrants through HE to be analysed by area background. The experiences of entrants to HE are investigated in this section by three measures: leaving after the first year of study, gaining a qualification, and progression into postgraduate study. These measures allow the estimating of *effective* young participation rates, that is participation that results in an HE qualification, and of young postgraduate participation rates.

## 4.7 Leaving HE after the first year of study

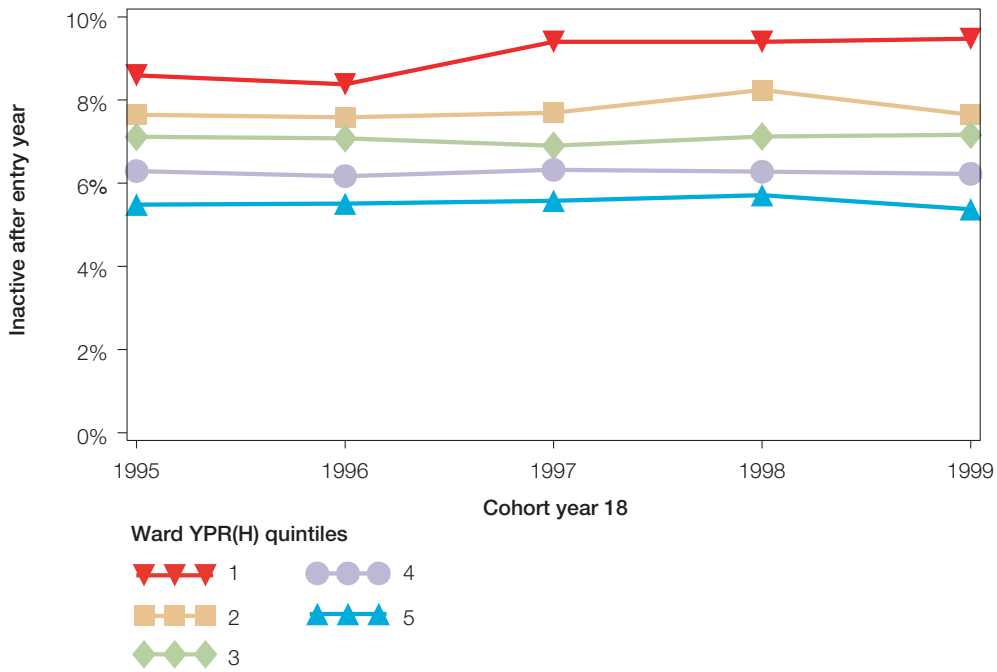
The proportion of entrants who do not continue in higher education beyond their first year of study is a simple measure that captures much of the pattern of eventual total non-qualification, without requiring many years of student records. This measure is available for full-time first degree entrants to HEIs (94 per cent of all YPR(H) entrants) for the 1995 to 1999 cohorts. Figure 61 shows the proportion of entrants not active in HE after the year of entry over these cohorts, for all YPR(H) entrants and by sex. Figure 62 shows the same measure for entrants from the whole-period ward YPR(H) quintiles.

Figure 61 **Leaving HE after the first year of study by sex**




*Note: Plot shows the proportion (both overall and by sex) of English YPR(H) entrants to full-time first degree programmes in UK HEIs that are not found in HE in the year following entry.*

Figure 62 **Leaving HE after the first year of study by English ward participation quintiles**




*Note: Plot shows the proportion (by YPR(H) participation quintile) of English YPR(H) entrants to full-time first degree programmes in UK HEIs that are not found in HE in the year following entry.*

In all cases the large majority of entrants are in HE the year after entry. Most entrants, typically around 91 per cent, continue their HE studies within the same HEI. Around 3 per cent are found studying in another UK HEI and around 6-7 per cent are not found studying HE ('inactive'). The level of inactivity after year of entry for young entrants is stable over the 1995 to 1999 cohorts, being confined within a narrow range of 6.4 to 6.7 per cent.

For men, the rate for inactivity after year of entry averages 7.5 per cent, which is around a third higher than the average 5.6 per cent for women. Both rates are broadly steady over the period, though there has been some convergence across the cohorts. The inactivity rate also varies by ward participation quintile background, with higher rates found for the lower participating ward quintiles, though again the large majority of entrants (91-94 per cent) are still studying HE somewhere in the year after entry. Entrants from the fifth participation quintile have an average inactivity rate over the cohorts of 5.5 per cent; those from the first quintile have an average inactivity rate of 9.1 per cent, proportionally 65 per cent higher. Again the inactivity rates are generally steady across the period with no clear trend for any group.

These results show that there has been no dramatic change or pronounced trend in inactivity rates for YPR(H) entrants by sex and participation background groupings. This does not preclude there having been a change in the sex or participation background group *effects* on inactivity rates over this period, since many other factors (notably entry qualifications and subject choice) are known to be important to inactivity rates and may have changed. However, to the extent that this simple inactivity measure describes the eventual patterns of non-qualification and effective participation (see next section), these results suggest that there have not been any changes in the overall group inactivity rates that are large enough to make the trends in *effective* participation rates for the groups substantially different from the reported YPR(H) trends.

## 4.8 Qualification rates of young entrants and effective participation

The most robust way of determining qualification rates is to track the individual entrants over a period of time. The disadvantage is that many consecutive years of student records are needed, to allow long enough for the entrants to qualify (including those on long courses or who may have interrupted their studies or changed institutions). This means that the most recent entrants that can be analysed in this way are those from the 1995 cohort. Table 4 shows the qualification rate for 1995 cohort English YPR(H) entrants to full-time first degree programmes. Qualification rates are also shown for some of the groupings used earlier for the participation results: sex, ward participation quintiles, and regions. The qualification rates are multiplied by the YPR(H) values for the 2000 cohort to give the estimates of the effective (that is, leading to a qualification) young participation shown in the table.

Table 4 **Qualification rates for English full-time first degree YPR(H) entrants (1995 cohort) and estimated effective YPR(H) (2000 cohort)**

| | Qualify in 6 years | | YPR(H) 2000 | |
|---|---|---|---|---|
| | Yes | No | Actual | Effective |
| **All** | **87.4** | **12.6** | **29.1** | **25.4** |
| Women | 90.4 | 9.5 | 31.6 | 28.5 |
| Men | 84.1 | 15.8 | 26.8 | 22.5 |
| **Ward YPR(H) quintiles** | | | | |
| 1 | 83.2 | 16.7 | 11.1 | 9.2 |
| 2 | 84.9 | 15.1 | 19.8 | 16.8 |
| 3 | 86.4 | 13.7 | 27.2 | 23.5 |
| 4 | 87.7 | 12.4 | 36.6 | 32.1 |
| 5 | 89.4 | 10.6 | 51.9 | 46.4 |
| **Region** | | | | |
| North East | 86.7 | 13.4 | 22.8 | 19.8 |
| North West | 86.3 | 13.8 | 27.1 | 23.4 |
| Yorkshire and the Humber | 87.4 | 12.6 | 24.2 | 21.2 |
| East Midlands | 87.8 | 12.3 | 27.2 | 23.9 |
| West Midlands | 86.7 | 13.3 | 27.4 | 23.8 |
| East of England | 88.2 | 11.9 | 29.5 | 26.0 |
| London | 85.7 | 14.3 | 36.0 | 30.9 |
| South East | 89.1 | 10.9 | 32.5 | 29.0 |
| South West | 88.3 | 11.7 | 29.5 | 26.0 |

*Note: English YPR(H) entrants to full-time first degree programmes at UK HEIs are tracked for six years from their entry in either 1995 (aged 18) or 1996 (aged 19). Students are tracked between HEIs so that qualifications are counted regardless of whether they are obtained at the entry institution or elsewhere. All awarded qualifications are counted as 'qualify' in the table, except a small number of institutional credits. Of the 87.4 per cent counted as qualified, 86.1 per cent were awarded a first degree or higher qualification and 1.3 per cent an undergraduate qualification other than a degree. The estimate of effective participation assumes that entrants to HND/HNC programmes share broadly similar qualification patterns to first degree students, and that the qualification behaviour of the entrants from the 2000 cohort will be similar to that of the entrants from the 1995 cohort.*

The large majority, 87.4 per cent, of young entrants from the 1995 cohort were awarded a qualification within six years of entering HE; 12.6 per cent of entrants were not awarded any qualification. If this pattern for the 1995 cohort is repeated by the entrants from the 2000 cohort (and Figure 61 indicates that progression patterns for young entrants are not changing significantly) then the actual YPR(H) for England of 29 per cent would be reduced to an effective YPR(H) of around 25 per cent. This means that although 29 per cent of the 2000 cohort entered HE, we would expect only 25 per cent or so of the cohort to gain a qualification through this participation.

The non-qualification rate for young male entrants from the 1995 cohort is 15.8 per cent, some two-thirds higher than the 9.5 per cent for women. The growth in participation inequality between the sexes over the report period (see Figures 9 and 10) has led to young women from the 2000 cohort being 18 per cent more likely to enter HE than young men. When the differing qualification rates are taken into account, the effective YPR(H) for women is reduced to 28.5 per cent and that for men to 22.5 per cent. This means that the sex inequality for effective participation is greater than that for actual participation, with young women 27 per cent more likely to enter HE and subsequently qualify than young men.

Qualification rates also vary by the area background, as measured by ward participation quintile. Entrants from 1995 cohort who came from the highest participating 20 per cent of wards showed a non-qualification rate of 10.6 per cent; whereas those from the lowest participating 20 per cent of wards experienced a non-qualification rate nearly 60 per cent higher at 16.7 per cent. However, as shown in the discussion of entrants' characteristics (see Tables 2 and 3), the dominance of entrants from high participation areas means that the numerical majority of non-qualifiers originate from advantaged areas. These non-qualification rates reduce the first and fifth quintile 2000 cohort YPR(H) values of 11.1 per cent and 51.9 per cent to estimated effective young participation rates of 9.2 per cent and 46.4 per cent respectively. The higher non-qualification rate for entrants from the low participation areas increases the inequality ratio of the first and fifth quintiles from 4.7 for the actual YPR(H) to 5.0 for the estimated effective YPR(H).

Compared to the other groupings the qualification rates for regions are very similar, varying from 86 per cent to 89 per cent. The pattern of qualification is a reflection of that in the other groupings, in that the lower participation groups generally have their disadvantage compounded by lower qualification rates. All the regions with 2000 YPR(H) below 28 per cent have non-qualification rates above 12 per cent, and most of the regions with participation above 28 per cent have non-qualification rates below 12 per cent. The exception is London, which has the highest rates for both participation and non-qualification.

The generally lower qualification rates for entrants from low participation groups are important because they modify the interpretation of the observed young participation rates. However, these results do not show that coming from a low participation group leads to lower qualification rates once other factors are taken into account. This is because qualification rates are related to many factors, most notably entry qualifications and subject of study, that are in turn associated with

entrants from high and low participation areas (as shown in Table 2). The differences in non-qualification rates across these factors can be very large: for example, young entrants with certain entry qualifications can have non-qualification rates 10 times higher than others[37]. Determining the most likely underlying factors associated with non-qualification requires considering all factors simultaneously through a statistical model[38].

## 4.9 Young participation in postgraduate study

A further measure of the experience of entrants from different backgrounds in higher education is whether they choose to continue their studies beyond their undergraduate qualification. This is a different kind of measure from, for example, qualification rates, where there is a consensus that qualification is a desirable outcome for the individual. It is not so clear that progressing to further immediate postgraduate study is a better outcome than, for example, obtaining a position in a structured graduate training programme with an employer. However it might be expected that students who have had a poor experience of HE would not be as keen as those with a good experience of HE to continue into postgraduate study. Similarly, it is possible that groups of students under financial pressure would be less likely to pursue a postgraduate course (especially as a self-funded student) than those with sufficient financial resources so that neither the cost nor the absence of salary are of concern.

By considering students who continue to postgraduate courses together with those whose first degree has postgraduate-level components (such as qualified teacher status first degrees), it is possible to estimate the level of 'immediate' (that is concurrent with or directly following undergraduate study) young participation in postgraduate HE and to see how the rates vary by the area participation background of entrants.

This section uses an extension of the individual linking methods used to analyse qualification rates (see Table 4) to track students into postgraduate study. This approach has the advantage of capturing any postgraduate study (whether full-time or part-time, or a short course) and providing detailed information such as the main source of funding for the course. A complementary analysis using the HESA First Destination Supplement (FDS) survey of graduates is presented in Annex K. This FDS method provides very similar results, and comparison at an individual level suggests that the record tracking method finds around 90 per cent or more of those who immediately continue to postgraduate study in the UK.

For consistency between the two methods a special population is used. This is English YPR(H) entrants to full-time first degrees from the 1995 and 1996 cohorts who graduate (from full-time study at the same institution) with a first degree within three or four years of entry. These are termed *standard qualifiers*. This population includes 70 per cent of the YPR(H) entrants for these cohorts[39]. Both the tracking and FDS methods find around 15 per cent of these young standard qualifiers in postgraduate study in the academic year immediately following qualification, which equates to around 14,000 postgraduate entrants per cohort.

This suggests that the young immediate progression route to postgraduate study accounts for around a fifth of degree-qualified English entrants to postgraduate study overall; and for nearly a third of entrants to research higher degrees.

## 4.10 Tracking students into postgraduate study

Table 5 shows the proportion of standard qualifiers (both overall and by ward YPR(H) quintile) from the 1995 and 1996 cohorts that are found in postgraduate study in the year following their graduation. Where a standard qualifier is found studying at postgraduate level, the type of study and main source of support for the student are tabulated separately. Standard qualifiers who are not linked to a postgraduate record but have a postgraduate component to their first degree award are also shown. Finally, by combining the linking and qualification numbers with the 1995 and 1996 cohorts, an estimate for young participation in postgraduate study by ward quintile is given.

With the linking method 13.3 per cent of the young standard qualifiers are found to have continued into postgraduate courses in the year after qualification. A total of 7.9 per cent of standard qualifiers are found on higher degrees, split roughly 2:1 between taught higher degrees (5.5 per cent) and research higher degrees (2.4 per cent). PGCE courses are taken by 3.4 per cent of qualifiers, with another 2.0 per cent on other courses at postgraduate level. The proportion of standard qualifiers found studying at the postgraduate level varies a little by area background, steadily falling from 15.0 per cent of those from the first (lowest participating) quintile to 12.6 per cent of those from the fifth (highest) quintile. The majority of this difference is accounted for by the 4.7 per cent of standard qualifiers from the first quintile who continue to do a PGCE course; this proportion falls sharply across the participation quintiles to 2.6 per cent of those from the fifth quintile. Standard qualifiers from the first quintile appear to be more likely to continue to a research higher degree and less likely to continue to a taught higher degree than those from the fifth quintile, but the differences are small and there is no clear pattern across the quintiles.

Of standard qualifiers, 5.5 per cent are found on postgraduate courses where the student is self-funding (that is, they pay all the course fees themselves with no support), and 7.4 per cent receive at least some support for paying tuition fees. The proportion of standard qualifiers entering self-funding PG study is similar across area participation backgrounds, with no clear pattern. The proportion of standard qualifiers entering supported PG study does vary: qualifiers from the first quintile (9.1 per cent) are 40 per cent more likely to do so than qualifiers from the fifth quintile (6.5 per cent). This is to be expected given previously noted patterns of progression to PGCE courses, since over 95 per cent of qualifiers to these courses receive some form of support.

Table 5 **Proportions of standard qualifiers linked to PG records or with a PG level award and estimated young immediate PG participation rates (1995, 1996 English cohorts)**

| | Ward period YPR(H) quintile (1=lowest, 5=highest) | | | | | |
|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **All** |
| **SQ linked to PG records (%)** | | | | | | |
| **Type** | | | | | | |
| Research higher degree | 2.8 | 2.5 | 2.4 | 2.5 | 2.3 | 2.4 |
| Taught higher degree | 5.2 | 5.7 | 5.4 | 5.4 | 5.7 | 5.5 |
| PGCE | 4.7 | 4.2 | 3.9 | 3.4 | 2.6 | 3.4 |
| Other PG courses | 2.4 | 2.1 | 2.0 | 1.9 | 2.0 | 2.0 |
| **PG tuition fees** | | | | | | |
| Student does not pay all fees | 9.1 | 8.3 | 8.0 | 7.5 | 6.5 | 7.4 |
| Student pays all fees | 5.4 | 5.6 | 5.3 | 5.2 | 5.7 | 5.5 |
| **SQ linked to PG (%)** | 15.0 | 14.4 | 13.7 | 13.2 | 12.6 | 13.3 |
| **SQ (not linked) with PG award (%)** | | | | | | |
| Qualified teacher status | 4.5 | 4.2 | 3.7 | 3.2 | 2.7 | 3.3 |
| Enhanced first degree | 1.6 | 1.9 | 2.1 | 2.4 | 2.5 | 2.3 |
| **SQ with PG qualification (%)** | 6.1 | 6.1 | 5.8 | 5.6 | 5.2 | 5.6 |
| **Total linked or qualified PG (%)** | **21.1** | **20.5** | **19.5** | **18.8** | **17.7** | **18.9** |
| **Young participation (%)** | | | | | | |
| YPR(H) | 10.4 | 18.2 | 25.7 | 35.5 | 51.5 | 28.4 |
| YPR(H)-SQ | 6.7 | 12.0 | 17.4 | 24.8 | 37.0 | 19.6 |
| YPR(H)-PG | 1.4 | 2.5 | 3.4 | 4.6 | 6.6 | 3.7 |

*Notes: Standard qualifiers (SQ) are those YPR(H) entrants who graduate (from full-time study at the same institution) with a first degree within three or four years of entry. The linked results are for standard qualifiers who are found studying at PG level in a UK HEI the year after their graduation. The component figures in the division of linked PG courses by funding status do not sum to the total linked PG because of a small number of students on PG courses of unknown funding status. Of those not linked, the proportion with an award containing an element of PG study (such as MEng, MChem courses) is shown. YPR(H)-SQ is the level of young participation leading to standard qualifiers. YPR(H)-PG is the level of young participation that leads to standard qualification with a PG award or immediate progression to PG study in a UK HEI.*

Many of those not linked to postgraduate courses already have a postgraduate qualification as a component of their first degree: 3.3 per cent of standard qualifiers have qualified teacher status (equivalent to progressing to a PGCE) and 2.3 per cent have an enhanced first degree (typically MEng or MChem). Those with qualified teacher status reflect the pattern seen for progression to PGCE, with 4.5 per cent of standard qualifiers from the first quintile having this award compared to 2.7 per cent of those from the fifth quintile. The pattern of enhanced first degrees is the opposite, with proportionally over 50 per cent more qualifiers from the fifth quintile (2.5 per cent) having these awards than from the first quintile (1.6 per cent).

Taking the progression and qualification routes together shows that around one-fifth of standard qualifiers experienced some form of postgraduate study either as part of, or directly following, their undergraduate qualification. This allows an estimate to be made of a young participation rate for such 'immediate' postgraduate study, shown as YPR(H)-PG in Table 5. This is necessarily only a partial estimate since it does not include, for example, those who enter postgraduate study later, perhaps after a couple of years working, or those qualifying at HND level. But it should capture the substantial majority of postgraduate study that is a continuation from undergraduate study.

The YPR(H)-PG measure suggests that the level of 'young'[40] participation in postgraduate HE is just under 4 per cent. The majority of this participation (70 per cent) is through immediate progression to a postgraduate course from undergraduate study. Young postgraduate participation shows a wide range from 1.4 per cent to 6.6 per cent between the ward participation quintiles, which reflects the disparity in undergraduate participation rates. For these cohorts the inequality ratio for participation in postgraduate study is 4.7, which is less than the 5.0 for the YPR(H) for these cohorts. This is because the high level of participation in teaching-related postgraduate study of qualifiers from the first quintile (both through progression to PGCE and qualified teacher status) is sufficient to offset the greater non-qualification of entrants from this group. For standard qualifiers from the first quintile, 9 per cent either have a PG teaching qualification or enter a PGCE, almost twice the proportion from the fifth quintile. However, as was seen for some of the characteristics in Table 2, the dominance of young entrants by those from higher participation areas means that over three times as many young people participate in teaching-related postgraduate study from wards in the fifth quintile compared to those from wards in the first quintile.

# 5 Summary and conclusions

This section revisits the reasons for looking at young participation and the methods used in the light of the results found. The national results are reviewed and the question is investigated of whether the introduction of tuition fees and the replacement of grants by loans affected participation. The broad patterns of the quintile analyses are summarised, with a discussion of the differences between grouping methods and the patterns observed. Finally the different characteristics of the area groups and their entrants are summarised.

## 5.1 Why look at young participation in HE for areas?

Entry to full-time higher education at age 18 or 19 is important in terms of total HE activity, forming over 70 per cent of all entrants aged up to 30. It is also important to the individual as the benefits offered by being a graduate are more valuable in terms of affecting life chances the earlier they are gained in adulthood. When young entrants are defined relative to their school years, 18 and 19 year-olds form a natural group both because of their dominance and their differing characteristics (for example, they are more likely than other groups to qualify once in HE and are more likely to offer high A-level points as entry qualifications).

The two core questions of participation analysis are how great is the inequality between advantaged and disadvantaged groups, and how this inequality may be changing with time. The only feasible method to address these two questions is to measure young participation by areas, because of the availability of suitable raw data sources, the close relationship of this age group to their area of origin, and the ability to define truly new entrants.

Set against these advantages are concerns that areas are too mixed in the nature of their residents to be a useful grouping. Our work has indicated that the relevance of these concerns depends on the choice of area for analysis. Areas the size of wards appear to offer a workable balance between geographical precision in targeting advantage and disadvantage, and avoiding spurious participation rates resulting from very small cohorts. In particular, in as far as the data can reveal, the overwhelming majority of low participation micro-areas are in low participation wards. Although cases of serious mixing of high and low participation micro-areas to give misleadingly average participation areas do occur, they are rare and only act to reduce the discrimination of the resulting groupings.

## 5.2 Success of participation measure

Educational attainment at GCSE, itself a result of over a decade of compulsory education, is key in determining entry to HE. Given this, any changes in the relative participation of different groups are likely to be gradual, with only very small annual changes. To reliably detect these changes very accurate participation measurements are required. Measures such as the frequently used API by social class have limitations that render them entirely inadequate for this purpose.

This report uses a specially developed method that estimates the cohort size (the denominator for the participation statistic) using a combination of small area 1991 Census data, realigned to school year ages, and individualised extracts from the

Inland Revenue child benefit records. For later cohorts a denominator based on the child benefit records alone is used, and we have made arrangements for annual updates to our estimates using this source. The cohort estimates are controlled at a national level to match realigned (to school years) 1991 Census aged cohorts. Very similar estimates are obtained by controlling to mid-year estimates (revised to use the 2001 Census) or, where possible, school roll totals and child benefit counts.

The count of young entrants is taken from cross-linked and longitudinally-linked individualised administrative student records covering HE in both HEIs and FEIs. The linking between individual records has been verified by its use in the Performance Indicators[41]. It enables the proportion of the cohort entering HE at age 18 or 19 to be determined with no double counting and with strengthened data coverage on key items such as postcode. The definition of entrants is restricted to those on full-time courses studying for a range of well defined undergraduate qualifications which, with some other restrictions, helps ensure compatibility across the different data sources. Sensitivity testing indicates that the numbers excluded by this measure are small (amounting in total to around 2-3 percentage points of young participation) and would not significantly change the participation trends reported if they were included.

The participation measure itself is constructed so that it measures the actual proportion of a single year of age school-aligned cohort that enters higher education at age 18 or 19. By following the progress of an actual cohort it avoids spurious participation trends resulting from changing cohort sizes that can afflict synthetic cohort measures such as the API. By using school-aligned cohorts, changes that affect particular school years of children, such as tuition fees or improvements in examination results, can be compared against young participation.

The young participation measures used in this report give lower participation rates than those recorded by the HEIPR. The principal reason for this is that the HEIPR measure considers entrants up to the age of 30 whereas the measures in this report focus on young – entry at age 18 or 19 – entrants only. This reflects the differing aims of these statistics: the HEIPR is a broad national level summary statistic, whereas the YPR gives detailed participation rates for small areas and so must use an age group where the cohort estimates are possible and the area results interpretable.

## 5.3 Young participation around 30 per cent in England, higher in Scotland

The 2000 cohort numbered 576,000 in England of whom 172,000 entered higher education, giving a participation rate in *all* types of institution of 30 per cent. The overwhelming majority, 19 out of 20, of these entrants studied in an HEI.

In Scotland there were 61,000 young people in the 2000 cohort of whom 24,000 entered higher education; a participation rate in *all* types of institution of 38 per cent. The profile of participation in Scotland is different, with around one in three young entrants studying a higher education course in an FEI. This route accounts for 12 percentage points of young participation in Scotland.

The participation rate for higher education courses in HEIs *only* is 29 per cent for the UK 2000 cohort. This is similar for the constituent countries of the UK: England (29 per cent), Wales (30 per cent), Scotland (27 per cent) and Northern Ireland (32 per cent).

## 5.4 National participation rates little changed over the 1994 to 2000 cohorts

The measure of participation in HE courses in HEIs only is useful for looking at participation trends since it covers more cohorts than the measure for participation in all institutions. The period for which the two measures overlap indicates that the statistic for only entrants to HEIs faithfully represents changes in the trends for all young participation.

Young participation for the UK has increased slightly from 27 per cent for the 1994 cohort to 29 per cent for the 2000 cohort. This is in contrast with the doubling of young participation over the preceding seven cohorts. Similar trends are seen for the constituent countries of the UK.

A notable feature of the time series is the exceptionally large increase in the size of the cohort for 1997, caused by a surge in births in the late 1970s. This caused the number of 18 year-olds in 1997 to rise by nearly 60,000 (9 per cent) compared to the previous year. There was a near matching increase of 14,000 (8 per cent) in the number of HE entrants from this cohort, so that there was only a modest decline in young participation.

Further analysis suggests that the small changes in participation in England are explicable in terms of annual changes in the size of the cohort and the pace of improvement in GCSE results. There is no evidence of a decline in overall young participation that might have been prompted by the introduction of tuition fees and the replacement of student grants with loans.

## 5.5 No evidence of entrants changing their behaviour to avoid tuition fees

Of the young entrants from England, one in three enter higher education at age 19 rather than age 18. This proportion has remained steady across the 1994 to 2000 cohorts. In particular there is no evidence of the changes in this proportion that would result from significant numbers of entrants bringing forward their intended entry point by a year, to avoid the introduction of the tuition fee and the replacement of grants with loans.

Changes to the tuition fee system in Scotland that differentiate it from England are mostly too late to affect the period covered in this report. However, for one particular entry year (2000-01) there was a strong financial incentive for the small proportion of Scottish students who enter English institutions to instead remain in Scotland and thereby avoid paying a tuition fee. No significant change in the proportion choosing to study in England was observed.

## 5.6 Growing inequality in young participation seen between men and women

For the 1994 English cohort, young women were 6 per cent more likely to enter higher education than young men. Strong growth in participation by women and stagnation in male participation have combined to steadily increase this inequality, so that for the 2000 cohort young English women are 18 per cent more likely to enter HE than their male peers. This increasing inequality is caused by diverging participation rates for entry at age 18 (rather than age 19).

The participation disadvantage of young men can vary across groups. For example, it is greater in other UK countries. It is substantially larger, and growing faster, in disadvantaged areas, where young women from the 2000 cohort are nearly 30 per cent more likely to enter HE than young men.

## 5.7 Month of birth has strong influence on chance of entering HE

Once the seasonal pattern of births has been allowed for, a strong seasonality in young participation for entry at age 18 is revealed, that is not redressed by entry at 19. This seasonality is aligned to the country-specific dates that determine entry to the school year. In England those who are born in September, and are thus the eldest in their school cohort, are over 20 per cent more likely to enter higher education at age 18 than those born in August.

The reasons for this seasonality are unclear, though there is evidence that the effect is already established by the time children progress to A-levels and no additional seasonal effects on, for example, progression rates for university entrants are observed. If all English children had the same chance of going to university as those born in September then there would typically be around 12,000 extra young entrants per cohort, increasing young participation by 2 percentage points.

## 5.8 Regional differences in young participation marked and growing

There are substantial regional differences in young participation, with children in some regions being 50 per cent more likely to be young entrants than their peers in other regions. The majority of these regional inequalities result from differences in participation at age 19 rather than age 18. The growth of young participation in London has been particularly high, taking it to a participation rate of 36 per cent for the 2000 cohort, over 6 percentage points higher than in 1994. In contrast, low participation regions such as the North East (24 per cent for the 2000 cohort) have seen little growth in participation. As a result they have fallen further behind and regional inequality in participation has increased.

The participation pattern of the evenly populated parliamentary constituencies reveals a Britain with a more polarised and complex geography than the regional map would suggest. In some parliamentary constituencies fewer than 1 in 10 young people enter higher education, whereas in others the majority of young people go to

university. This polarisation has persisted throughout the period, even where constituencies with opposite extremes of participation are neighbours.

Although there are more low participation constituencies in the north of England and more high participation constituencies in the south of England, the geography is resistant to a simple categorisation. Constituencies with high participation can be found in low participation regions and some of the constituencies with the lowest participation rates are in the south of England. Disadvantaged constituencies in Scotland have low participation rates but these are nearly twice the very low rates found in similarly disadvantaged areas in England. The relatively high participation rates for these areas appears to be a reflection of the greater importance in Scotland, especially for poorer areas, of HND and HNC qualifications and HE courses in FEIs.

## 5.9 Local participation rates reveal severe polarisation between neighbourhoods

The true extent of participation inequalities between areas is only revealed at the local scale of neighbourhoods. Geographies such as census wards are effective at capturing this local variation. They are large enough that their participation rates are not swamped by the random noise introduced by small cohort counts. They are also small enough to reflect the neighbourhood pattern of young participation, with analysis indicating that they are rarely internally mixed in terms of young participation rates.

Local geographies such as wards show broad and deep divisions of participation chances: the 20 per cent of young people living in the most advantaged areas are five to six times more likely to enter higher education than the 20 per cent of young people living in the least advantaged areas. Maps of local participation rates reveal that many cities and towns are highly polarised, containing both neighbourhoods where almost no one goes to university and neighbourhoods where two out of three or more will enter HE.

The maps of neighbourhood participation rates are complex as they reflect the distinctive geography and nature of each area, but some general patterns do emerge. For instance, the existence of large swathes of uniform low or high participation areas, the juxtaposition of neighbourhoods with extremes of participation, and the spatial association of school GCSE results with young participation are seen in most places.

## 5.10 No major changes in local participation inequality for the 1994 to 2000 cohorts

When using several cohorts combined, wards are suitable for mapping neighbourhood participation. However with a typical annual cohort size of 50, individual wards are too small to reliably detect annual changes in participation of advantaged and disadvantaged groups that might occur if, for example, the replacement of grants with loans had deterred those from disadvantaged areas. To overcome this problem, small areas such as wards are aggregated to form quintile

groups of the young cohort that are large enough to detect small changes in participation between advantaged and disadvantaged areas.

An array of geographies and measures of disadvantage are used to investigate the degree of local participation inequalities and how they are changing across the 1994 to 2000 young cohorts. The consistent finding confirms the patterns suggested by the maps: there is a high degree of inequality in the chance of young people entering higher education depending on the neighbourhood in which they live. Further, this level of inequality is persistent over the period. There are no substantial changes to divisions between neighbourhoods in the chance of entering higher education. In particular, there is no decline in the participation rates of the most disadvantaged areas either overall or coincident with the introduction of tuition fees and replacement of grants with loans.

## 5.11 Mixed messages from the minor changes in inequality found

The methods used are powerful enough to detect small changes and these give a mixed picture. The more disadvantaged areas have shown the higher proportional growth in participation over this period, particularly for women and in London. The participation growth of the more advantaged areas stalled in the middle of the period, but despite this these areas generally recorded the largest absolute percentage point increase in participation over the period.

This means that, although the extra entrants resulting from the higher participation over the period are slightly more equitably distributed than before, the majority of these new places in HE have been taken by entrants from already advantaged areas. On this measure the degree of absolute inequality between areas has increased slightly over the period. However the steady proportional rise in the participation of the most disadvantaged areas, and an apparent checking of the growth of participation from the high participation areas in the middle of the period, have resulted in a slight reduction in the degree of relative inequality between high and low participating areas over this period.

These changes are very small, so it is possible that they result from equally small residual biases in either the entrant counts or cohort counts. However, it is unlikely that this could account for all the changes observed. Of a number of possible explanations for the changes, a plausible one is a slight reduction in degree of disadvantage, particularly at school, experienced by children living in the most disadvantaged areas, together with a marginal reduction in the attractiveness of UK HE for young people living in the most advantaged areas.

## 5.12 Low participation neighbourhoods face many other disadvantages

High and low participation neighbourhoods are very different environments, and their residents have very different characteristics. Some of these differences can be quantified by using census area statistics, indices of deprivation and geodemographic groups. Together these show a consistent picture – of the areas

with the lowest young participation rates being disadvantaged in many other ways, and conversely the areas with the highest participation rates enjoying many other advantages.

Children in low participation areas are likely to be living in local authority rented homes in some of England's most deprived wards with, for example, less space and fewer household goods than their peers in high participation areas. The neighbourhood maps of participation show that often their nearest secondary school will have only a small proportion of its pupils gaining five GCSE A-C grades. In contrast, children in high participation areas are frequently near schools, often fee-paying, where very nearly all the pupils gain these grades. Adults in low participation areas are likely to work in a manual occupation, have a low income, to receive means-tested benefits and not have, for example, a car or an overseas holiday. They are much less likely to have any experience of higher education than those in high participation areas, and the two groups differ sharply across a wide range of measures of political, cultural and consumption behaviour.

## 5.13 Young entrants differ according to area background

The selecting nature of entry to higher education would be expected to reduce the differences between entrants relative to the differences between the areas themselves. Nevertheless, entrants from high and low participation backgrounds do show a number of clear differences. Entrants from high participation areas are more likely to have had a planned gap year before entry to HE, pay all of the tuition fee and to have studied at an independent school. They also differ in their choice of course and institution, being more likely to study subjects such as medicine and languages and to be at those institutions formerly funded by the UFC.

Entrants from low participation areas have lower entry qualifications, are more likely to have parents in manual occupations, and are less likely to be paying all their tuition fee than those from high participation areas. They are also more likely than entrants from high participation areas to be studying for an HND or subjects such as education and nursing. Entrants from low participation areas are more likely to go to an HEI that is near where they live, but more work is required to determine if this is a genuine difference in choice or simply reflects, for example, the relative distribution of population and HE places between groups.

However, entrants from the most advantaged half of areas dominate the student population. This means that the majority of entrants with almost any characteristic – even those usually associated with disadvantaged areas such as weaker entry qualifications – are those from advantaged areas.

## 5.14 Qualification rates increase participation inequalities

Tracking young entrants to first degree courses through their time in higher education shows that 87 per cent qualify within six years, with the remainder mostly leaving without a qualification. This leads to an estimate of an *effective*

young participation rate (that is, participation which leads to a qualification) of around 25 per cent for England.

Non-qualification rates are around two-thirds higher for young male entrants than for young female entrants. This means that the inequality between the sexes in *effective* participation is higher than the already substantial inequality in young participation: the participation advantage of women increases from 18 per cent to 27 per cent once qualification rates are considered.

A similar exacerbation of participation inequality by qualification rates is seen for the area groupings. Entrants from the most disadvantaged areas have non-qualification rates two-thirds higher than entrants from the most advantaged areas. However, entrants from these areas differ in nature across factors such as entry qualifications that are known to be very important in qualification rates. It is not yet clear if coming from a disadvantaged area has an additional negative effect on qualification once other factors are taken into account. Evidence from the proportions who do not continue with HE after their first year of study suggest that the patterns of non-qualification by area background have not significantly changed over the period.

## 5.15 Around a fifth of degree graduates progress to postgraduate study, little variation by area background

By tracking individual entrants or using the HESA survey of the first destinations of graduates it is possible to estimate how many add postgraduate level study to their undergraduate participation. Both methods give the same result: for those young entrants who do qualify with a first degree around a fifth will also study at postgraduate level either through an enhanced undergraduate qualification (6 per cent of qualifiers) or by immediate progression to a postgraduate course (13 per cent of qualifiers). These figures translate into an estimated young postgraduate participation rate for England of just under 4 per cent.

For first degree *qualifiers* the proportion with this type of postgraduate experience varies little by the area background of the entrant for most types of postgraduate study. The exception is with the award of postgraduate teaching qualifications or progressing to postgraduate teaching courses, which is done by 9 per cent of qualifiers from disadvantaged areas, nearly twice the proportion of qualifiers from advantaged backgrounds. This difference results in qualifiers from disadvantaged areas having a slightly higher propensity to experience postgraduate study.

However since the degree qualifiers are dominated by those from advantaged areas the majority of those experiencing postgraduate study – even the teaching related qualifications – are from these areas. This is reflected in the young postgraduate participation rates for area groups. These are estimated to be around 1.4 per cent for disadvantaged areas and 6.6 per cent for advantaged areas. This is similar to the degree of inequality for young undergraduate participation suggesting that, on this measure, the effects of area background, so strong in determining earlier educational outcomes, have negligible additional effects at this stage.

# Annexes

# Annex A
# Method for small area cohort estimates

Determining the size of the cohort from which the entrants are drawn is probably the most critical stage of measuring young participation. This annex describes the requirements of the cohort estimates for this project and the details of the method developed to meet them.

## A.1 What is to be estimated?

The entrants used in the cohort participation measures are 18 and 19 year-olds, with age determined by reference to their country's school calendar (see Annex C). An obvious participation denominator for these entrants is some count of 18 or 19 year-olds in the year of entry. Indeed, this is the approach taken by measures such as the DfES API and HEIPR (see Annex E). However, estimating 18 and 19 year-olds for small areas in this direct way is a poor choice.

There are substantial practical difficulties in measuring this age group directly. Mobility is high, both international and intranational, and presence in data sources used for population estimates is poor (such as GP patient lists[42] or electoral registers). More importantly, even if it were possible to estimate 18 and 19 year-olds accurately they would be the wrong group for the small area participation measures. In an extreme example, using direct estimates of these ages could result in high populations and consequently low participation for areas with large numbers of term-time students (who are treated as resident at their term-time address in estimates such as the ONS mid-year estimates). Similarly an area with true low participation but where a lot of children leave school at 16, and shortly afterwards leave the neighbourhood, would not have that low participation fully captured if the participation denominator were 18 and 19 year-olds.

These examples highlight that, ideally, what the small area participation rates should record are the proportion of a cohort that grows up in, and experiences influences from, a particular area that then goes on to enter HE. The last time that all children are engaged in a common activity is the final year of their compulsory education, which (in England and Wales) they enter in the autumn of the year that they are 15 years old on 31 August. This, therefore, is a better choice for the direct estimate of the population for the participation measure. These estimates are then used indirectly as the denominator for entrants from this cohort who enter HE three years later (at age 18) or four years later (at age 19). It is a common result from migrational analysis that children of secondary school age form a low point in geographical mobility that is not reached again until old age. This means that the 15 year-olds that are directly estimated are likely to have spent long enough in the area for the participation rate to be valid, that is to properly describe the experience of children in the neighbourhood.

A concern with this approach is that the administrative student records record the postcode of entrants at the time of application or entry, and not necessarily where they lived at age 15. However, the way that the participation rates are calculated (see Annex E) means that it is only the net movement of HE *entrants* between the end of full-time compulsory education and when they supply their residential postcode for the student record that can distort the area participation rate. Since the majority of this cohort enter HE at age 18 the length of this 'at risk' period is

typically short, between one and two years. It seems likely that these (typically) A-level students will have low migration rates during this period, due to the desire of parents to engineer educational stability for their children (as seen in the low mobility of secondary school age children). The possibly contrasting diverse activities and migration of those children who leave school at 16 does not affect the participation rate analysis, since the cohort estimate is made while they are still at school.

## A.2 Requirements of cohort estimates for small area participation analysis

For small area participation rates accurate enough to detect small area group annual changes, the cohort estimates should simultaneously meet several requirements.

### Single year of age, aligned to school years

To avoid the artefacts that can be present in composite participation measures (such as the API and HEIPR, see Annex E) the participation measures in this report count entrants to different academic years from a single cohort of a single year of age. Many factors that might be of interest in interpreting a participation time-series, such as changes in student support or trends in examination results, affect cohorts according to their school year. Therefore the reference date that the age of the cohort is defined on needs to be aligned to that which governs entry to the school year of the country where the children live, for example 31 August in England and Wales (see Annex C for details). This necessity for school-aligned cohorts is inconvenient as most aggregate sources of population data, with the notable exception of school statistics, provide counts with age on different dates.

### At small area level, 1991 enumeration district

The issues in the choice of the best area unit to capture local participation patterns are discussed in the main results. To enable the use of area groupings based around 1991 Census small area statistic data (such as geodemographic classifications or rankings by census statistics), the base spatial unit of the cohort estimates should be 1991 Census enumeration districts (EDs, or the equivalent 1991 output areas, OAs, in Scotland). Using a very small unit such as EDs offers two further advantages. First, analysis at different spatial scales (such as wards or estimated school catchment areas) is possible on a consistent basis by aggregating the EDs so that the size of a 'neighbourhood' for participation is not presupposed. Second, when using larger geographical units as the area unit for an analysis of participation, the ED level estimates can be used to investigate the extent of any participation heterogeneity within the unit (see Annex F).

The disadvantages of using such small units are that the sources of primary data at this level are rare; and the very small populations involved (EDs have typically just four children in a cohort) bring small number problems (such as the data modification for confidentiality in the Census and the proportionally large random year-on-year variations).

### Consistent estimates through time

This report covers the seven school-aligned cohorts who reached 18 between the years 1994 and 2000. Since the direct cohort estimate point is the final year of compulsory education, this implies estimating 15 year-olds from 1991 to 1997. A key aim of this work is to detect any trends in group participation rates through time. As these changes would be expected to be of the same order as annual cohort size changes, it is vital that the cohort estimates have the minimum of temporal bias over the period – even if this is at the expense of potentially greater accuracy at any single point in time. Although not a requirement for the cohorts covered in this report, an ideal method would have the potential to be extended for future participation monitoring with similar temporal consistency.

## A.3 Overview of population estimate methods

Most small area population estimates have two stages. A large area (often national) estimate is produced, perhaps using data available only at that level. Some indication of the population distribution at the desired small area (which may be a direct source such as medical patient registers or student enrolments, or indirect such as housing units) is then used to apportion the large area estimate across the small areas. Alternatively this can be thought of as scaling or controlling the small area distribution estimates to a more secure large area total.

The large area estimate is typically produced by a census cohort methodology (for example, the ONS mid-year estimates[43]). This starts with a population of known demographic characteristics, usually obtained from a national census. Depending on the size of the large area, 'special' populations, such as prisons and army bases, may be subtracted from this base because their institutional nature means that they do not age in the same way as residential areas. The remainder of the population is aged by one year. Births are added and deaths removed; both of these vital statistics are well recorded and can be accurately accounted for in the estimate. The population is then adjusted by an estimate of net international migration (if the large unit is a country, otherwise internal migration must be considered too). Usually this is the most difficult part of the process by a large margin. In the UK the International Passenger Survey is used for this component, but it is recognised that the difficulty of capturing travellers' intentions makes the results very uncertain. Finally, the special populations are added back in to give the completed estimates which are then, in turn, used as the starting population for estimates for the next year.

The estimates for small areas are typically produced by apportioning the higher level estimate across the smaller units. This is done using a proxy measure available at that scale that is thought to be proportional to population (or population change). The measure chosen is often a pragmatic choice determined by what is available. Methods have been developed that use one or a combination of measures such as housing units, school rolls, electoral rolls and medical registrations. These methods typically aim to estimate the entire resident population or larger age groups; single year age splits are rare for units of the size of wards. Official annual population estimates for small areas typically stop at the higher levels of administrative geography, such as districts[44].

An evaluation of all the small area estimates available at the start of this project indicated that none could meet the set of requirements outlined above. Often the estimates did not cover the mid-1990s, or the required spatial or age resolution was not present. Where there was a commercial product offering such resolution their proprietary nature meant it was not possible to assess the quality of the method. Many local councils have produced ingenious and diverse local methods drawing on their own data sources, but there is not the required collation and consistency of these results for a national study. The method used in HEFCE's 1997 Influence of Neighbourhood Type on Participation report, simple ageing of unaligned 1991 Census cohorts, was adequate for the initial findings of very large differences in young participation by area groupings, but not accurate enough to reliably detect small changes in the participation of these area groups through time. This led us to develop a custom population estimate method for measuring young participation for areas through time, termed PLACE (Participation of Local Areas Cohort Estimate).

## A.4 The PLACE method

The accuracy of small area population estimates is often more determined by the suitability and quality of the input data than by the particulars of the method employed. Some demographic researchers judge that better use of the growing set of individualised administrative data could greatly increase the accuracy of small area estimates. Accordingly the development of the PLACE method focused on searching out suitable administrative data sources as the basis of the cohort estimates. This investigation provided records from the administration of child benefit as the core of the PLACE method, supported by a custom aggregation of small area statistics from the 1991 Census.

This section describes the PLACE method in three stages. The first is a description of the characteristics of the two main small area data sources used. The second covers the identification of problem areas and the development of the PLACE apportionment model. Finally the candidates for the global scaling of the estimates are considered.

## A.5 Small area data sources

### Child benefit administrative records

In the UK nearly all usually resident children aged under 16 (or aged under 19 and in full-time education) attract child benefit. Further details can be found in the Child Benefit Quarterly Statistics[45]). In August 2000 (the time of the first scan of the child benefit data for the PLACE estimates) the benefit was being paid to 7.3 million recipients for 13.3 million children at a rate of £15 per week for the first child and £10 per week for subsequent children. As a relatively valuable (£1,300 per year for a two child family) non-means-tested benefit the take-up is very high[46], helped by the initial registration for the benefit being institutionalised into the post-birth process. The small number of children not eligible for the benefit are mostly either in institutions, subject to immigration control or dependants of

people in foreign armed forces based in the UK. Therefore in most cases they would not be eligible for the participation entrant counts. Fraud is thought to be at a low level for this benefit[47]: the overwhelming majority of fraudulent claims are for a child over 16 who is not in full-time education, or falsely claiming the (then) lone parent premium for the eldest child. Neither of these cases would have any bearing on the use of the data in the cohort estimates (as they do not involve claims for children who do not exist). The data for the payment of the benefit is held centrally in computerised form at the Child Benefit Centre, Washington, Newcastle upon Tyne.

The team working on the revision of the Index of Multiple Deprivation in the late 1990s recognised the potential advantages of administrative benefit data sets, and child benefit in particular. They were able to use ward-level counts of the whole child population as a denominator for some measures in the index. These estimates were not suitable for this work in themselves since they had no age splits, were not at ED level and they referred to a single point in time. However we were able to negotiate with the Department for Work and Pensions (who administered the benefit at the time, it is now administered by the Inland Revenue) for a special anonymised area-referenced extract from this data base to support our work of measuring participation. The first scan of the child benefit data set for this project was in August 2000, followed by ongoing annual scans to ensure a consistent base for future work.

One consequence of the operational purpose of the computerised child benefit records is that it is not possible to access records of, say, 15 year-olds in 1995 for the estimate directly. However, records are kept on the database for a period of five years following the last claim. This means that it was possible to construct the first child benefit scan on 31 August 2000 ('Scan2000') to capture all children (regardless of whether their claim was currently active or not) who had attained 16 in the preceding five years. Since inactive records are not deleted for five years and all children have basic eligibility for child benefit until the age of 16, Scan2000 represents a potentially complete census of children who were aged 15 between 31 August 1995 and 31 August 1999.

Careful processing of the child benefit data is required before it can be used. Scan2000 contains an 'exclusion code' for each child who was no longer in receipt of child benefit on the scan date (31 August 2000). Nearly all (92 per cent) of these codes relate to straightforward cases where eligibility has ceased because the child has left full-time education, gone into paid employment, reached 19, or is receiving youth training or another benefit. The remainder cover a more complex set of reasons relating to the details of the eligibility rules or competing claims. These can be thought of as two broad groups: those codes that imply there is another active record for that child (for example where another adult has priority of claim); and those codes that relate to a unique child where the claim has ended because, for example, the child has died or has left the country. In discussion with the Child Benefit Centre the exclusion codes were divided into these broad groups: those that implied another record was in the database were removed; and those that (with reference to the exclusion age) relate to the only record of a child were retained in the data set to maintain temporal consistency.

For example, if a child died after the age of 16 they were left in the population base, as removing this record from the (backward-looking) Scan2000 would bias the estimates through time since only the older cohorts would have had the opportunity to be removed from the scan for this reason. There was a particular difficulty with a small set of exclusion codes meaning 'no contact – written off'. These codes were fairly widely used for administrative convenience at the start of the scan period (around 3 per cent of the cohort) but substantially less frequently (around 1 per cent for the 1999 cohort) towards the end, so that either removing or including them would introduce a slight bias (even after allowing for the earlier cohorts having more opportunity to be excluded). Analysis of the age profile of these exclusions and the resulting overall totals of children suggested that including these records was the best solution. As is shown later, the child benefit data are used in the apportioning estimate of the cohort distribution rather than the cohort total, so this uncertainty does not affect the overall participation rates.

This cleaned set of child benefit records is then assigned census and other geographies by linking to the ONS-maintained All Fields Postcode Directory (AFPD)[48]. This maps current (the August 2003 AFPD version was used for this report) and historic postcodes to a range of census and administrative geographies. Valid (that is, AFPD mapped) postcode coverage on the child benefit records is very good, at around 98 per cent for the Scan2000 with the majority of the unmatched records being claims for children overseas (who are marked and excluded in later scans). Once mapped to the AFPD, each record is assigned to a school year cohort depending on the country-specific date ranges (see Annex C).

There remains a source of a slight possible geographical bias in the processed child benefit records. This relates to the fact that the record for each child on the child benefit system is nested within a claim that may cover several children (see the claim size statistics[45]). The postcode for each record in the scan is the last postcode recorded for that *claim*. Therefore if the record child or any of the other children in the claim remain in receipt of child benefit after the record child is 16, *and* the claimant's postcode changes, then it is the new postcode that is recorded for the record on Scan2000. Fortunately the mobility of children at these ages is relatively low and the problem only affects the earlier cohorts, so this bias is thought to be very slight. There is no way to correct for this possible bias in Scan2000, but the later child benefit scans for HEFCE (released from the need to go back in time) record live claims for 15 year-olds so that this bias will not affect future work.

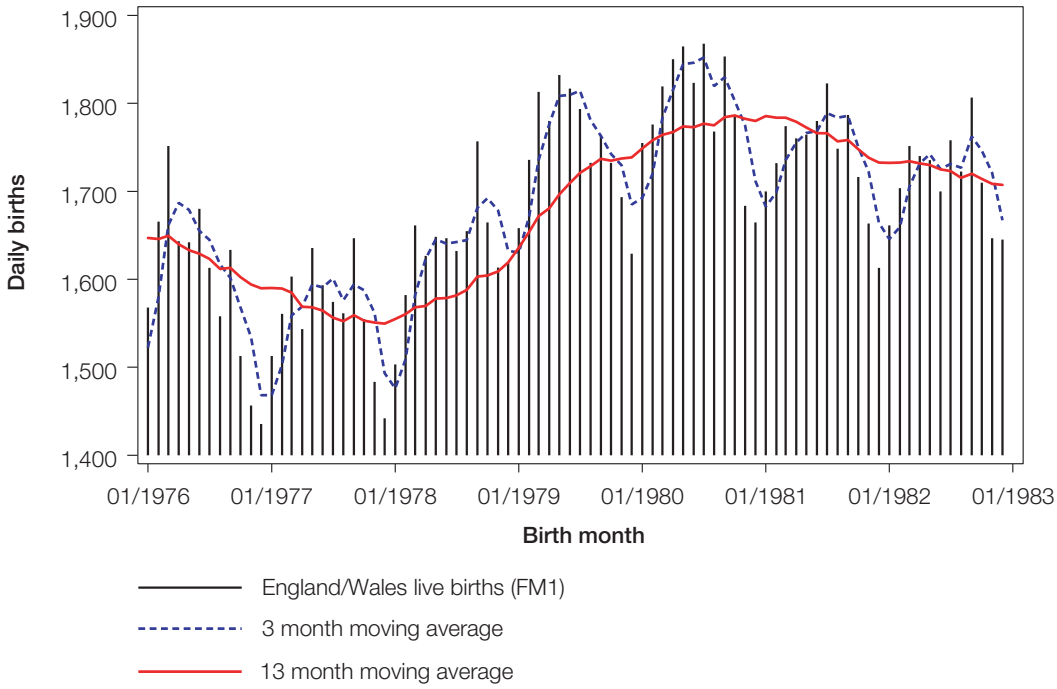
### 1991 Census small area statistics

Although the child benefit data is an exceptionally useful source for the cohort estimate, it does not solve the problem on its own. This is because the maximum five-year reach of Scan2000 does not allow it to provide a direct estimate of all the cohorts covered in this report. Scan2000 can provide a direct apportionment estimate of the 15 year-old cohorts back to 1995 (for England and Wales), that is the 1998 (18 year-old) cohort. This leaves four cohorts covered by this report – 15 year-olds for 1991 to 1994 (the 1994 to 1997 cohorts) – that child benefit alone can not provide direct estimates for. To help fill this gap 1991 Census small area statistics (SAS)[49] data are used as well.

### Aligning the census data to school cohorts

The 1991 Census was taken on 21 April 1991 and consequently all the small area counts of children are by age on that date. For the reasons noted earlier, it is important to measure participation by age groups aligned to school cohorts. This is straightforward for the child benefit and entrant counts, as these individualised records hold the date of birth and can be aggregated to age cohorts of choice. For the aggregated and fixed age group census small area statistics this is not possible, and an estimate of the school cohorts must draw upon other sources as well. Often this is done by simply splitting the census cohorts to school cohorts in proportion to the number of overlapping months. However, as Figure 63 shows, births exhibit a strong seasonality (with typically 10-15 per cent more births in the summer months), with sometimes pronounced annual or longer trends (for instance the jump in births between 1977 and 1979). Together these effects can introduce errors into school cohort estimates that are based on simple month shares, errors that can easily be large enough to obscure small changes in participation or otherwise distort trends.

Figure 63 **Births in England and Wales 1976-82**




*Note: Derived from data in the FM1 series of birth statistics[50]. Moving averages are centred. The range of birthdates shown here covers the 1995 to 2000 18 year-old cohorts. The surge in births between 1978 and 1979 is reflected in the sharp increase in the size of the 1997 cohort shown in, for example, Figure 1.*

This problem is eliminated by apportioning the census cohorts to school cohorts in a more precise manner by using monthly birth shares from the FM1 series of birth statistics[50] and, for 15 year-olds from 2001 onwards, daily population counts from the scans of all active child benefit claims. This simultaneously allows for both seasonality and annual changes. Since the census age reference date is earlier than the school year reference date the estimate of, say, 9 year-olds on 31 August 1991 is formed from shares of 9 and 8 year-old census cohorts. The census cohort splits for the school cohorts in this report are provided for reference in Table 6.

Note that for Scotland the school age reference date is 28 February in the following calendar year, that is the February after the start of the autumn term. This is a consequence of the problematic school year structure in Scotland (see Annex C) and the fact that Scottish HE entrants can therefore be 17 years-old at the start of their course. This convention of defining their age on the following February allows them to be treated as 18 or 19 year-olds in a common framework with the rest of the country.

Table 6 **Splitting census age groups to school cohorts**

| | | Census cohort multiplier (%) | | | | | |
|---|---|---|---|---|---|---|---|
| | | England and Wales | | Scotland | | NI | |
| Target school year cohort age 15 | Equivalent 1991 Census age | Prior census age | Same census age | Prior census age | Same census age | Prior census age | Same census age |
| 1997 | 9 | 36.53 | 62.84 | 85.54 | 14.39 | 19.27 | 80.37 |
| 1996 | 10 | 37.16 | 62.68 | 85.61 | 14.19 | 19.63 | 80.07 |
| 1995 | 11 | 37.32 | 63.35 | 85.81 | 14.75 | 19.93 | 80.28 |
| 1994 | 12 | 36.65 | 64.62 | 85.25 | 15.25 | 19.72 | 81.23 |
| 1993 | 13 | 35.38 | 63.42 | 84.75 | 14.95 | 18.77 | 80.38 |
| 1992 | 14 | 36.58 | 62.47 | 85.05 | 14.38 | 19.62 | 79.68 |
| 1991 | 15 | 37.53 | 62.72 | 85.63 | 14.85 | 20.32 | 79.96 |

## A.6 The apportionment component for small areas

The first stage of the method is to produce the *apportioning* estimate, the distribution of the cohort over the small areas. This itself has two steps: identifying small areas that have experienced large changes in population; and finding the best way of combining the 1991 Census and child benefit data in a population model for those cohorts that cannot be directly estimated from the child benefit or census small area statistics alone.

Underpinning both these stages are two simple models for how the child population in small areas behaves. The first is that children stay and grow older in the same

area. Under this model an area with a high proportion of pre-school children would, if revisited in five years' time, have instead a high proportion of primary school children (as the children in the area age in place). With this model an estimate of 15 year-olds in 1995 would be obtained from the count of 11 year-olds from 1991 by assuming that they would age in the area.

The competing model is where families move about, so that the age profile of children in an area is maintained through time. This might occur if the housing stock of the neighbourhood was suitable only for children of a certain age, or if there was a nearby primary school but only a distant secondary school. In this case an area that has a high proportion of pre-school children one year would still have that characteristic in five or ten years' time. It is not clear which combination of these models will work best overall.

### Identifying small areas with large changes in population

The first step in the analysis is to identify small areas that have experienced very large population changes since the 1991 Census. There are two reasons for this. The first is straightforward: the unusual child population changes in these areas are likely to distort the formation of the main population model. The other reason relates to using the changes in the child population as an indicator of a more general change in the nature of the area. This is useful to know because many of the participation analyses use fixed groupings of areas through time. If some of the areas within the group have changed a lot over this period then the homogeneity of the grouping will change through time, perhaps distorting the participation results. This problem is potentially most serious with geodemographic clusters, as a particular cluster (such as those designed to capture rural fringes) may be especially susceptible to change through new-build housing or urban redevelopment, so that by the end of the period the nature of the area would not be well described by the original cluster description.

A different approach is taken to identifying these areas than is used in developing the population model. In the latter case all the data are drawn upon to obtain the best possible estimate for a small area in a particular year. Here the aim is to robustly detect large changes in population which are extremely unlikely to have occurred by chance. This was assessed by using two regression models (least squares weighted by the reciprocal of total census children to remove heteroskedasticity) and Poisson regression (with offset the natural logarithm of total residents). Each model used had three variants, using measures of the aged census cohort and census 15 and 16 year-olds singly and in combination to predict the number of 15 year-olds between 1995 and 2000 (from the first child benefit scan). This approach allows for combinations of the two basic models of small area population change, and identifies areas where the number of 15 year-olds has potentially changed more than would be expected by chance.

The results from these models are considered with a separate comparison of the total number of 1991 Census children and the total number of under 16 year-olds from a full child benefit scan (from 2001). Where an ED or Scottish output area (OA) is outside the 99.9 per cent prediction interval for all six tests, and there is a

supporting change between 1991 and 2001 in the number of all children of at least 25 per cent and 10 individuals, then the area is marked as an extreme growth ED. Analogous criteria are used to identify areas with extreme declines in population. In this way 2,500 English EDs (holding 1.3 per cent of 15 year-olds from the child benefit scans) were marked as extreme growth areas (negligible numbers were identified as extreme decline areas). The feasibility of this classification was confirmed by looking at address count changes between 1991 and 1999 using current versions of postcode directories from those years, and inspecting highlighted areas. This suggested that the majority of the areas selected contained substantial new-build housing developments.

### Determining the PLACE population model

The models used for the identification of extreme growth or decline areas suggest that both a measure of the children ageing in the same area and a measure of typical numbers of 15 year-olds are likely to be of use in estimating the 15 year-olds in any particular year. As outlined above, the child benefit scan provides a source for the direct estimation of the 15 year-olds for the 1995 (in England and Wales) and later cohorts, equating to 18 year-old cohorts from 1998 onwards. The 15 year-olds in 1991 (the 1994 18 year-old cohort) can be estimated directly from the 1991 Census small area statistics. The aim of the main PLACE model is to estimate for each ED the number of school-aligned 15 year-olds for the years 1992, 1993 and 1994, which lie between these two sources of direct 15 year-old estimates and are needed for the 18 year-old cohorts in 1995, 1996 and 1997.

To estimate these counts, the measure used to represent children ageing in place is the appropriate census school-aligned cohorts (from the splitting ratios in Table 6). So, for example, in estimating the 15 year-old school cohort for 1993 the 13 year-old census school cohort would be used (formed from 63.4 per cent of the census 13 year-old cohort and 35.4 per cent of the census 12 year-old cohort, from Table 6). For the component to capture the typical number of 15 year-olds there are two possible measures. One is the 15 year-old school cohort from 1991 (that is, prior to the estimate year) and the other is some count of 15 year-olds from the child benefit scans (which are after the estimate year). Both of these measures were tried and the counts derived from child benefit were found to be more effective. This is probably because the child benefit counts do not suffer from the inaccuracies introduced by the census data modifications; and the post-estimate reference point of the child benefit data enables the measure to reflect any general growth or decline in population[51].

The central question in forming the estimates of the 15 year-old school cohorts for 1992, 1993 and 1994 is in what ratio to combine these two components for each year. Because there are no data for these years it is not possible to obtain a definitive answer on the ratios to use. However, rather than choosing an arbitrary weighting of the two components, it is possible to gain an idea of the manner in which the relative weightings might change as the distance of the estimate point from the census cohort and child benefit reference points. This was done by estimating the 15 year-old cohort for years that we do have information – 1995 through to 1999 (known from the child benefit Scan2000) – with models using

census school cohorts and child benefit 15 year-old count in an analogous situation to the real estimate problem.

The exploratory models were built for England and Wales separately (with very similar results) using enumeration district data. Scottish OAs are very small and the child benefit coverage for Northern Ireland is weak in some years, so that the results obtained for England and Wales are assumed to hold for these other countries. One of the more illustrative series of exploratory models is the set that attempts to estimate separately each of the 15 year-old cohorts from 1995 to 1999 (from the child benefit Scan2000) using census school cohorts and a combined count of 15 year-olds from 2001, 2002 and 2003 (derived from the later 'active claim' child benefit scans). The form of this model is shown in Formula 1.

Formula 1 **Exploratory population model series for year *y* (separate models for y=1995, 1996, 1997, 1998 and 1999)**

$$\text{Scan2000chb}_{y,i} = \alpha_y \times \text{Cencoh}_{y,i} + \beta_y \times \text{Activechb}_{y,i} + \varepsilon_{y,i}$$

*where*

$y$ = estimate year

$i$ = enumeration district $i$

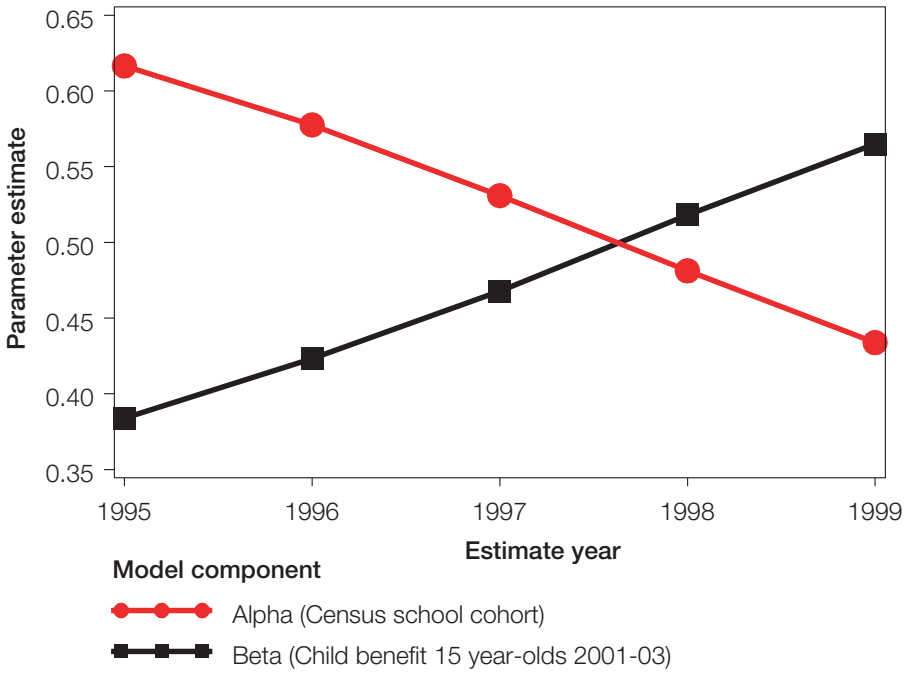
$\text{Cencoh}_{y,i}$ = 1991 census school aligned cohort that would be aged 15 in year $y$

$\text{Scan2000chb}_{y,i}$ = 15 year old school cohort for year $y$ from the ChB scan2000 scaled so that $\sum_{\text{all } i} \text{Scan2000chb}_{y,i} = \sum_{\text{all } i} \text{Cencoh}_{y,i}$

$\text{Activechb}_{y,i}$ = ChB active claim 15 year olds (2001- 2003) scaled so that $\sum_{\text{all } i} \text{Activechb}_{y,i} = \sum_{\text{all } i} \text{Cencoh}_{y,i}$

The annual counts from the first child benefit scan, and the combined count of 15 year-olds from 2001-03 are all scaled so that they total the census school cohort for the appropriate year. This is to avoid distorting the model parameter estimates between years because of different ratios between the 15 year-olds in the prediction year and child benefit active claim years. The parameter estimates from fitting each of the five models (one for each year) with weighted least squares (with the weight being the reciprocal of the total number of children in 1991, the results were found to be robust to choice of weight used) and no intercept are plotted in Figure 64.

Figure 64 **Parameter estimates for the census school cohort and child benefit 15 year-old count components from five exploratory population models for England**




*Note: The dependent variable is the number of school-aligned 15 year-olds (for each of the years). Independent variables are the adjusted count of 15 year-olds between 2001 and 2003 and the appropriate school-aligned aged cohort from the 1991 Census.*

What this series of models shows is that there appears to be a strong linear relationship between the optimum combination of census cohort and child benefit 15 year-olds and the year of the estimate. The census school cohorts become more important as the distance from the census reduces and the distance from the child benefit counts (with an effective midpoint in 2002) increases. Conversely the importance of the child benefit component grows with increasing distance from the census and reducing distance to the child benefit data. A simple extrapolation of these trends to the years required for the real estimate would suggest the population formula given in Formula 2.

Formula 2 **Population model suggested by extrapolation of an exploratory model**

$$\text{Schcoh}_{y,i} = \alpha_y \times \text{Cencoh}_{y,i} + \beta_y \times \text{Activechb}_{y,i}$$

*where*

$y$ = estimate year

$i$ = enumeration district $i$

$\text{Schcoh}_{y,i}$ = 15 year old school cohort estimate

$\text{Cencoh}_{y,i}$ = 1991 census school aligned cohort that would be aged 15 in year $y$

$\text{Activechb}_{y,i}$ = ChB active claim 15 year olds (2001- 2003) scaled so that

$$\sum_{\text{all } i} \text{Activechb}_{y,i} = \sum_{\text{all } i} \text{Cencoh}_{y,i}$$

$$\alpha_y = 0.8 - 0.05\,(y - 1991)$$

$$\beta_y = 0.2 + 0.05\,(y - 1991)$$

This is not an ideal model since the child benefit component is around a decade distant from the years (1992, 1993 and 1994) that are being estimated. It would be better to substitute the *Activechb* count in Formula 2 with *Peerchb*, a similar scaled child benefit count but based on the (closer to the estimate point) five 1995-99 cohorts of the Scan2000 data. However the pattern of the parameter estimates in Figures 64 and Formula 2 is specific to the period estimated and the three cohorts of child benefit data used. Substituting *Peerchb* for *Activechb* requires the pattern of parameter estimates to be modified.

Further models using modifications of *Activechb* and *Peerchb* were investigated to gauge how the parameters might be modified. For example the model series described in Formula 1 was refitted using variants of *Activechb* using two cohorts (2001 and 2002) and one cohort (2001) respectively. Despite the effective midpoint of *Activechb* drawing closer to the estimate year, the higher random variability resulting from the smaller base leads to a reduction of the importance of *Activechb* in the estimates for these variants. This is reflected in the *Activechb* parameter estimate (for 1991) declining from 0.20 to 0.18 and 0.13 for the three, two and one cohort based *Activechb* models respectively. The gradient of parameter change with distance from 1991 falls from 0.05 to 0.04 and 0.03 for the three, two and one cohort based *Activechb* models respectively. This suggests that using the five cohort based *Peerchb* would lead to a higher intercept and sharper gradient than found for *Activechb*. This result and other work (for example, estimating single years using partial components of *Peerchb*) suggested Formula 3 for using the census cohort and child benefit data to provide estimates of 15 year-olds for 1992 to 1994.

Formula 3 **PLACE population model**

$$\text{Schcoh}_{y,i} = \alpha_y \times \text{Cencoh}_{y,i} + \beta_y \times \text{Peerchb}_{y,i}$$

*where*

$y$ = estimate year

$i$ = enumeration district $i$

$\text{Schcoh}_{y,i}$ = 15 year old school cohort estimate

$\text{Cencoh}_{y,i}$ = 1991 census school aligned cohort that would be aged 15 in year $y$

$\text{Peerchb}_{y,i}$ = ChB Scan2000 15 year olds (1995 - 1999) scaled so that

$$\sum_{\text{all } i} \text{Peerchb}_{y,i} = \sum_{\text{all } i} \text{Cencoh}_{y,i}$$

$$\alpha_y = 0.70 - 0.06 \times (y - 1991)$$

$$\beta_y = 0.30 + 0.06 \times (y - 1991)$$

The first term, *Cencoh*, allows for the ageing of the school cohorts from 1991. This is equivalent to the 'children stay in same area' basic model and accommodates the random discrete pattern of the ages of children in any particular small area. The second term, *Peerchb*, allows for two factors simultaneously. The first is the contribution from the 'age profile of children maintained' basic model: that is, that an area might have a persistent age profile (for example, more primary school age than secondary school age children). The second factor is that since the *Peerchb* count is from the late 1990s it can therefore pick up overall migration behaviour since the 1991 Census (for example regional migration driven by economic growth or decline).

It may be surprising that the equation does not predict using only the 1991 Census data for 1991 estimate year. This can be seen as reflecting the fact that the *Cencoh* term is itself only an estimate of the school cohort in 1991. This is because *Cencoh* is estimated from the birth data guided combination of two 1991 Census cohorts (see Table 6) that are themselves estimates, in that they are sometimes changed from their observed values due to the census data modifications to protect confidentiality. This means that the *Cencoh* is not weighted as heavily in the population model as it would be if it were a true count, and that it is even possible that information about the typical cohort size from the child benefit data can improve this estimate of the 1991 population. In practice census data alone (that is $\alpha$=1, $\beta$=0 when $y$=1991) is used as the apportioning estimate for 15 year-olds in 1991 (that is, the 1994 18 year-old cohort).

The model used is based on an interpretation and extrapolation of trends from other models. To estimate the likely magnitude of errors resulting from extrapolating from the patterns seen in Figure 64, young participation rates were calculated using the 2001-03 active child benefit data and Formula 2. This did show small differences in the rates for the first and fifth quintiles (formed by ward participation and ward census proportions of adults with HE qualifications). These differences were small (for example, 0.2 percentage points absolute difference for the first quintile) and do not affect the interpretation of the group trends, suggesting that the quintile analysis results are robust to small changes in the exact formulation of the PLACE model. The

differences that are observed are accounted for by, and probably result from, the differing relationships of the 1997 and 2001 (being the effective midpoints of the two child benefit counts used) 15 year-old distribution to the probable quintile population distribution in the estimate years; rather than resulting from an incorrect combination of census and child benefit components in the model. The problem of correcting for differing distributions through time of the cohort by participation quintiles is addressed in Annex B.

The estimated school cohorts from this population model are used for the apportionment of the 15 year-old school cohorts from 1992 to 1994 (18 year-old cohorts from 1995 to 1997) in Great Britain and 1992 to 1997 in Northern Ireland (where the older child benefit data is weak). The apportionment for the 15 year-old school cohorts from 1995 to 1999 (1998 to 1999 in Northern Ireland) is done directly using the appropriate cohort from the Scan2000 child benefit data. From 2000 onwards the 15 year-olds are estimated from the 2001 and later annual August scan of active child benefit claims.

## A.7 Scaling of the cohorts

The final stage of the PLACE method is to choose the total cohort figure for the apportionment estimates to allocate to small areas.

### Why scale the cohorts?

The school cohort estimates from the census, the population model (Formula 3) and, for the later cohorts, direct counts from the child benefit data aim to describe the distribution of the cohort between small areas. This distribution is not used directly for the final estimates but instead apportions across the small areas a total figure for the cohort at the national level. This can alternatively be thought of as scaling the local estimates so that they match a national total.

The main reason for doing this is to meet the requirement that the estimates are as consistent as possible through time. For example, using the unadjusted child benefit counts would make the estimates susceptible to minor changes in benefit eligibility or to the vigour of benefit offices in processing claims. Although scaling results in adjustments that are trivial at small area level (typically a fraction of a person), it is advantageous to apply the correction at this geography so that the resulting small area estimates can then be aggregated to any geography, including national, on a consistent basis.

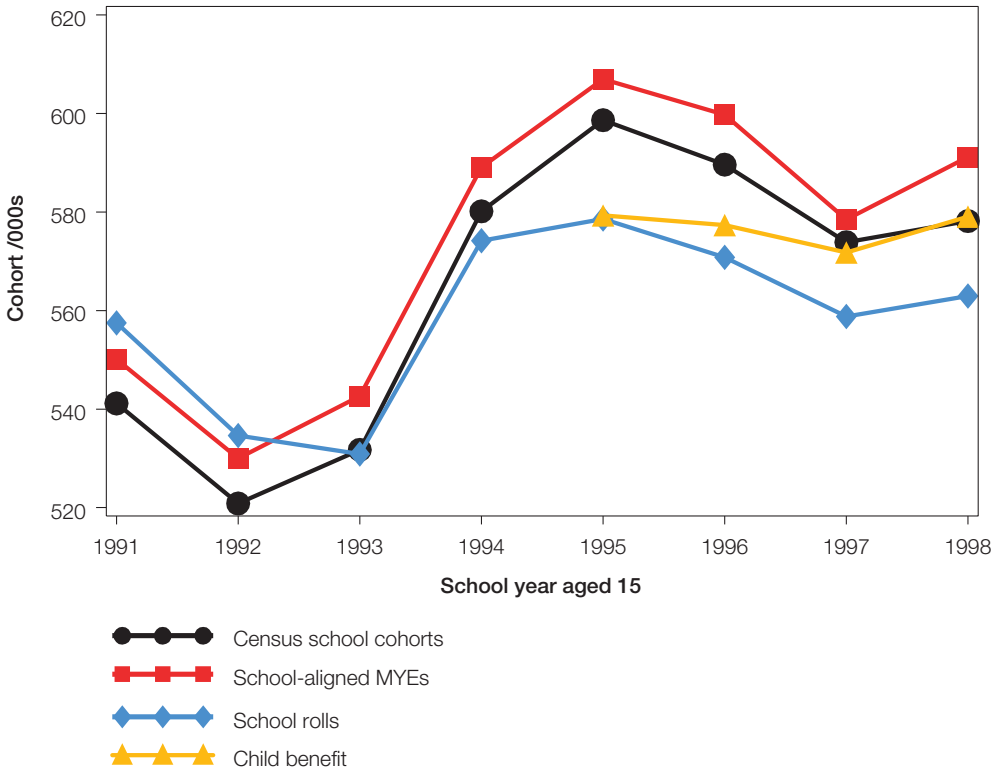
### Choice of total for scaling

Four candidates for the total cohort were compared:

- school-aligned 1991 Census cohorts
- school-aligned mid-year estimates (MYEs, revised in line with the 2001 Census[52])
- counts of 15 year-olds from school rolls[53]
- child benefit totals.

In addition, controlling directly to the 2001 Census was considered but rejected. The international migrational stability of the secondary school age cohorts means that a reasonable estimate of 15 year-olds can be obtained by ageing forward an earlier cohort of 10 year-olds. The same is not true of ageing backwards a later cohort of, say, 20 year-olds, to estimate 15 year-olds five years earlier. This is because people in their twenties are internationally mobile: some of the original 15 year-olds will be abroad and many of the 2001 20 year-olds will be from other countries working or studying in the UK. The values of the four candidate global totals (for England only) are compared in Figure 65.

Figure 65 **Candidate total cohort estimates for scaling English 15 year-olds 1991 to 1998 (18 year-old cohorts 1994 to 2001)**




*Notes: Census and mid-year estimates aligned to school cohorts using the FM1[50] series birth statistics and child benefit data. The mid-year estimates are those revised in the light of the 2001 Census and issued on 27 February 2003. The school rolls for 1993 to 1998 are from the school performance tables. The school rolls 1991, 1992 are from 'Statistics of Education, Schools' (1991, 1992, Department for Education, ISSN 0266 271X) and exclude special and general hospital schools. The child benefit counts are from Scan2000 and include only those with valid postcodes (subsequent scans show that most missing postcodes are from children living overseas).*

Figure 65 shows that the four measures are in general good agreement in both absolute numbers and trend (particularly so given that the differences are exaggerated by the narrow range of values used on the vertical axis). The school-aligned MYEs

and aged census cohorts are within 1-2 per cent of each other and provide the highest estimates in most years. The aged census cohorts are the lower of the two. This will be due to some suppressed areas not being included in the census small area statistics, and the fact that net inward migration usually outweighs deaths for cohorts of this age (this effect can often be seen in population projections, for example the Government Actuary's Department series[54]). The school roll derived counts have the lowest estimates: this would be expected as not all children are in school. The child benefit counts are in between and do not appear to follow the trend as clearly as the other measures. However, from analysis of the child benefit data the number of missing Great Britain postcodes for non-overseas child benefit records is estimated to rise from around 1.5 per cent for the 1998 15 year-old cohort to over 3 per cent for the 1995 15 year-old cohorts. Removing the temporal bias resulting from these missing postcodes would bring the child benefit numbers and trends much closer to the school-aligned cohorts.

These results indicate that very similar national participation figures and trends would be obtained using either the aged census cohorts, school-aligned revised MYEs or school rolls as a total cohort estimate. This work uses the aged census cohorts as the total cohort scaling measure because it is consistent with the other census data used, is fixed (the MYEs are subject to revision) and readily available for all the constituent countries of the UK (the school data are particularly difficult to obtain on a consistent basis). The scaling to these census cohort totals is done for Great Britain as a whole, with the total including the marked extreme growth small areas. One advantage of the apportionment estimates is that their relationship to the total cohort does not vary geographically (in the way that, for example, a housing unit method might). This enables the scaling to take place at the Great Britain level. It is important to do so since controlling by smaller units (for example, region) would undo any cross-unit migration picked up by the child benefit data. The exception is Northern Ireland where difficulties with the early years of the child benefit data mean that both the child benefit and overall totals are adjusted to the census cohorts from the Northern Ireland 1991 Census small area statistics.

The apportionment and scaling used in the PLACE method for each cohort are summarised in Table 7.

Table 7 **Summary of apportionment estimate basis and scaling cohort totals used (and planned) in the PLACE method**

| Year school cohort aged 15 (aged 18) | Great Britain | Northern Ireland |
|---|---|---|
| 1991 (1994) | Census school-aligned cohorts | Census school-aligned cohorts |
| 1992 to 1994 (1995 to 1997) | Population model with 1995 to 1999 child benefit count controlled to GB 1991 Census school-aligned cohort total | Population model with 1995 to 1999 child benefit count controlled to NI 1991 Census school-aligned cohort total |
| 1995 to 1997 (1998 to 2000) | Individual cohort child benefit counts controlled to CBSY controlled GB 1991 Census school-aligned cohort total | Population model with 1995 to 1999 child benefit count controlled to NI 1991 Census school-aligned cohort total |
| 1998 to 1999 (2001 to 2002) | Individual cohort child benefit counts controlled to GB1991 Census school-aligned cohort total | Individual cohort child benefit counts controlled to NI 1991 Census school-aligned cohort total |
| 2000 onwards (2003 onwards) | Child benefit scan of active 15 year-olds controlled to GB SCAF | Child benefit scan of active 15 year-olds controlled to NI SCAF |

# Annex B
## Correcting for the effect of changing group sizes

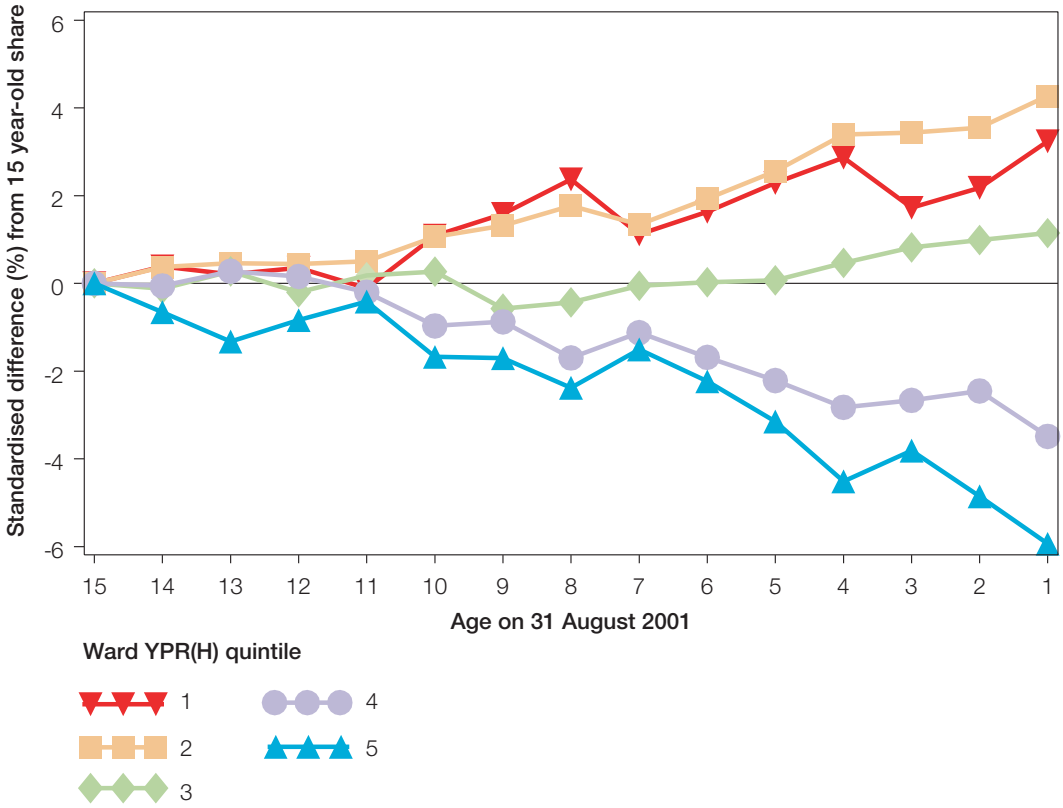
The cohort estimates described in Annex A aim to provide the best unbiased solution for the population as a whole. However, it is possible that once the areas are grouped by some characteristic (for example, the participation quintiles of wards) the model estimates may be biased. The population model (Formula 3) has two components: the aged school-aligned census cohort (*Cencoh)* and the adjusted 15 year-old school cohort from 1995 to 1999 (*Peerchb*). Both components can potentially introduce group bias. This annex looks at the likely magnitude of any bias from these components and how it can be corrected in the participation rate estimates for groups.

### B.1 Bias from ageing the cohort: different quintile age structures

One way in which high and low participation areas differ is in their child demographic structure. In particular there are proportionally more younger children, relative to older children, in low participation areas compared to high participation areas. This may be due to the increasing average wealth of families as they age enabling them to move to more expensive (and higher participation areas), or some families moving to be near high performing secondary schools. Whatever the cause this difference could potentially lead to the population model over-estimating the cohort in low participation areas (as the higher proportion of younger children are aged forward) and under-estimating the cohort in high participation areas. This would lead to an exaggeration of participation differences that increases with the distance from the census. This effect will be moderated by the inclusion in the population model of the child benefit 15 year-olds but not entirely eliminated as the weighting given to this component is determined as optimal for the population as a whole, not for any particular grouping of areas.

To investigate this effect, Figure 66 shows the ratio of 15 year-olds to other child age groups (standardised to remove the effect of differing cohort sizes) for the census ward YPR(H) quintiles. This chart uses the 2001 active child benefit scan but similar results are obtained using the 1991 Census (suggesting that this pattern is not reflecting a one-off increase in population in these areas but a characteristic difference between the area types).

Figure 66 **Demographic structure of English ward YPR(H) quintiles in 2001**



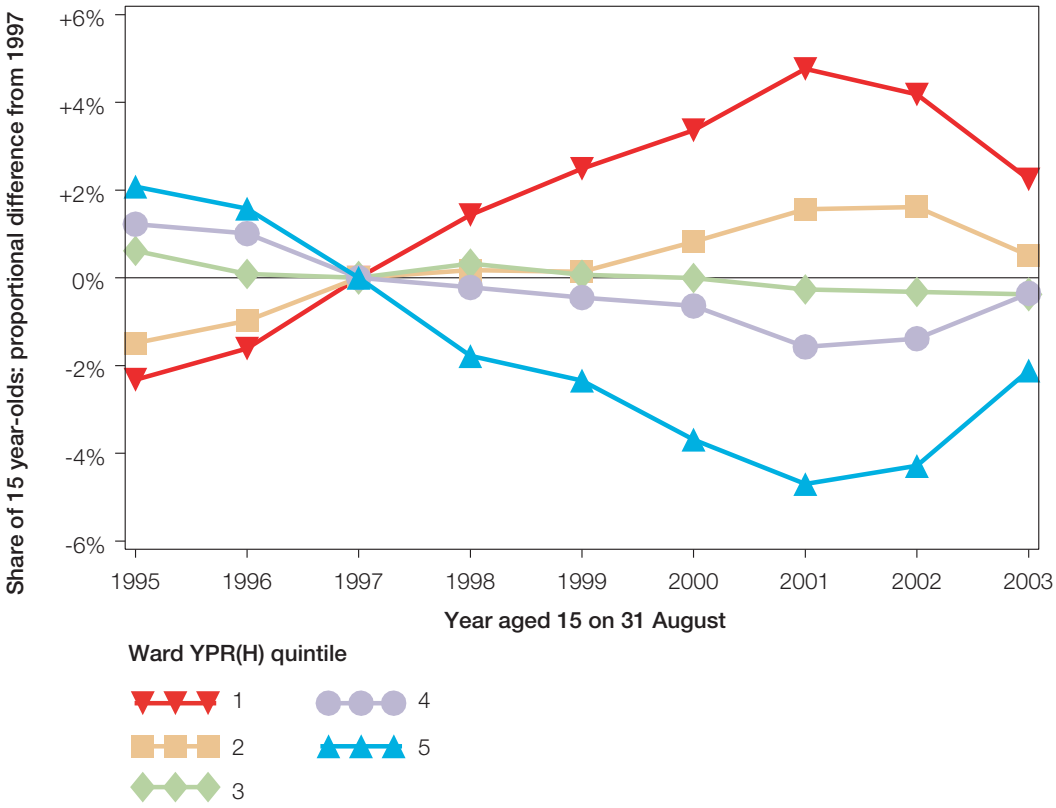

*Note: Child age structure from the 2001 child benefit active scan. Standardised difference is the proportional difference between the quintile share of children at the specified age and the quintile share of children at age 15.*

Figure 66 shows some complex patterns, but it is clear that compared to high participation areas low participation areas do have, proportionally, more young children than older children. The differences between the areas start to emerge at the age at which children start secondary school. This means that for the age groups that are aged forward from the 1991 Census in the population model (approximately 14, 13 and 12 year-olds, equating to 15 year-olds in 1992, 1993 and 1994) there is very little or no bias between groups. This suggests that the *Cencoh* component of the population model is not a significant source of error over this interval. However, this is not the case if (unlike the method used in this report) cohorts younger than age 11 in 1991 are aged for the cohort estimates. Indeed, if the *Peerchb* component in the model is removed and the cohort estimates are obtained solely from ageing forward 1991 Census school cohorts, then a sharp and accelerating rise in participation inequality is observed from 1998 onwards. This is not, of course, seen in the results used in this report and is a consequence of the differing age profiles of high and low participation areas resulting in biased aged cohort estimates.

## B.2 Bias from the *Chbpeer* component: differential cohort change by quintile

The relative share of children in low participation areas appears to have been increasing in the mid to late 1990s, an effect that is additional to the differing age profile described above. Figure 67 shows the share of cohort (indexed to the 1997 share=1) in each ward participation quintile, using the estimates of 15 year-olds from the child benefit Scan2000 and, for 2000 onwards, the annual active child benefit scans.

Figure 67 **Changes in the English share of 15 year-olds by ward YPR(H) quintile for those aged 15 1995-2003 (1998 to 2006 cohorts, from child benefit data)**




*Note: Changes in the share of each quintile of the English cohort are shown as proportional from the 1997 15 year-olds (2000 cohort) as 1.00. The 1997 15 year-old cohort has shares close to that of the aggregated 1995-99 15 year-old cohorts used as the Chbpeer component in the population model (see Formula 3).*

The share of the 15 year-old cohort that live in the (fixed) grouping of low participation areas has increased from the 1995 to 1999 cohorts (the Scan2000 base) and beyond, with indications of a reversal of this trend for the 2002 cohort. If these trends are the continuation of similar demographic changes prior to 1995, then the use of the *Chbpeer* Scan2000 component in the PLACE model is likely to over-estimate the cohort in low participation areas and under-estimate in high

participation areas. This is because the *Chbpeer* distribution of 15 year-olds across the quintiles reflects the situation in the middle of the *Chbpeer* period, 1997, rather the 1992 to 1994 period being estimated. Unlike the age profile effect this can introduce significant bias. Using linear extrapolation from the Scan2000 child benefit profile it is likely that the distribution of 15 year-olds would be biased by the order of proportionally 5 per cent for the highest and lowest areas for 1992, with the model estimates (which are moderated by the census component) being biased by a constant 2 per cent (due to the combination of increasing bias and decreasing contribution from child benefit component as the period gets nearer to 1991) for the highest and lowest areas for 1992-94.

This bias could be reduced by using just the 1995 15 year-olds from Scan2000, rather than the aggregate 1995-99 count, but at the expense of introducing greater variability to the small area estimates. It is possible to correct for this bias for each grouping by extrapolating the trends (assuming similar trends existed prior to the 1995 cohort) in relative 15 year-old counts shown in the Scan2000. This is done in the group participation rate calculation process, and the corrected results are usually shown in the group trends (the exceptions are those not using a fixed set of areas or where there is no clear group pattern such as some of the Scottish results).

The typical effect on the cohort estimates of applying this correction is illustrated by Figure 68. This shows the ratio of the cohort estimate for the fifth quintile to the first quintile under three circumstances: no correction, a correction extrapolation including the 1991 Census data point, and a correction extrapolation excluding this point. Both the corrected estimates have the effect of removing the step change in the group cohort ratio that is seen in the uncorrected series when the child benefit data is first used exclusively for apportionment (the 1998 cohort). When the 1991 data point is not used, a smaller step change is introduced between the population model estimates (1995) cohort and the census estimates (1994 cohort). This suggests that the linear extrapolation of the child benefit Scan2000 trends may not be entirely suitable, with the real pattern of change perhaps being more curved. Including the 1991 data point in the extrapolation gives a compromise solution that is used as the denominator for the group trend results.

Figure 69 shows how these differences in the cohort estimates affect the ratio of the participation rates of the fifth to first quintiles that is used as a measure of inequality in the main results. The uncorrected cohort estimates show a large apparent drop in inequality for the 1998 cohort. This is a consequence of the uncorrected cohort estimates leading to under-estimation of participation rate in low participation areas and an over-estimate of participation in high participation areas for the model cohort estimate years. When this error is abruptly removed for the 1998 cohort (the first cohort where child benefit data are used exclusively) the previous inflation of the inequality is removed at a stroke. The corrected cohort estimates do not contain this spurious reduction in inequality for the 1998 cohort and show instead a smoother line of marginally, but gradually, declining inequality over the period. The magnitude of the differences between the corrected variants is not large enough to affect the overall interpretation of the group trends. The 1998 and later cohorts are based on direct apportionment using cohort child benefit data, which eliminates this particular problem.

Figure 68 **Effect of no correction, using 1991 data point and not using 1991 data point on the cohort ratio of the fifth and first ward YPR(H) quintiles**

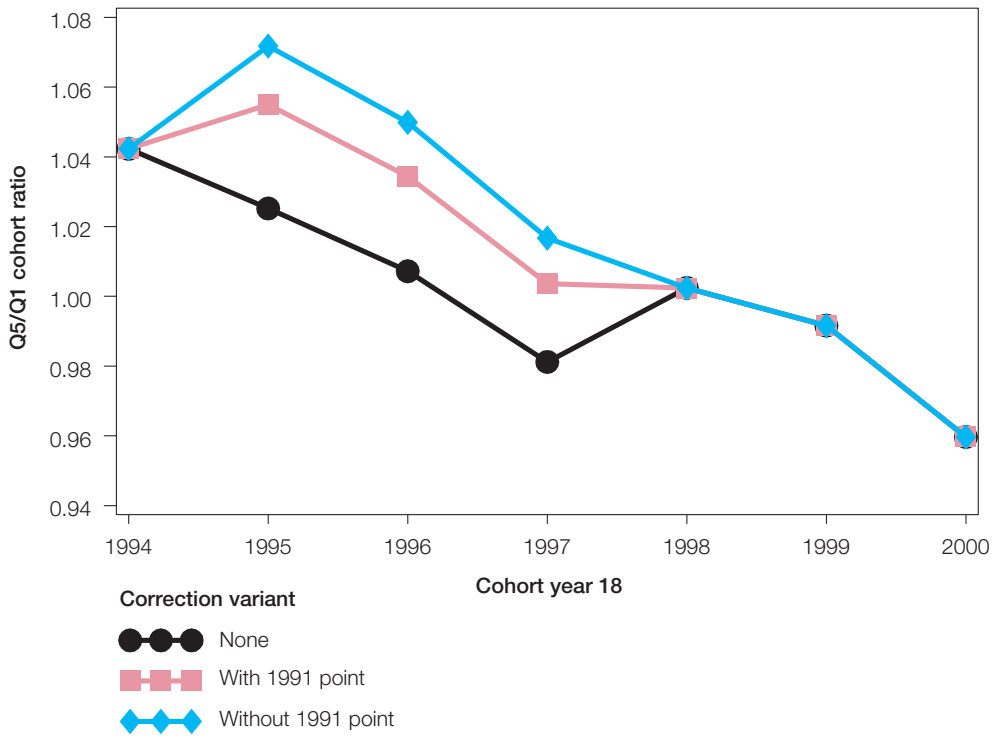
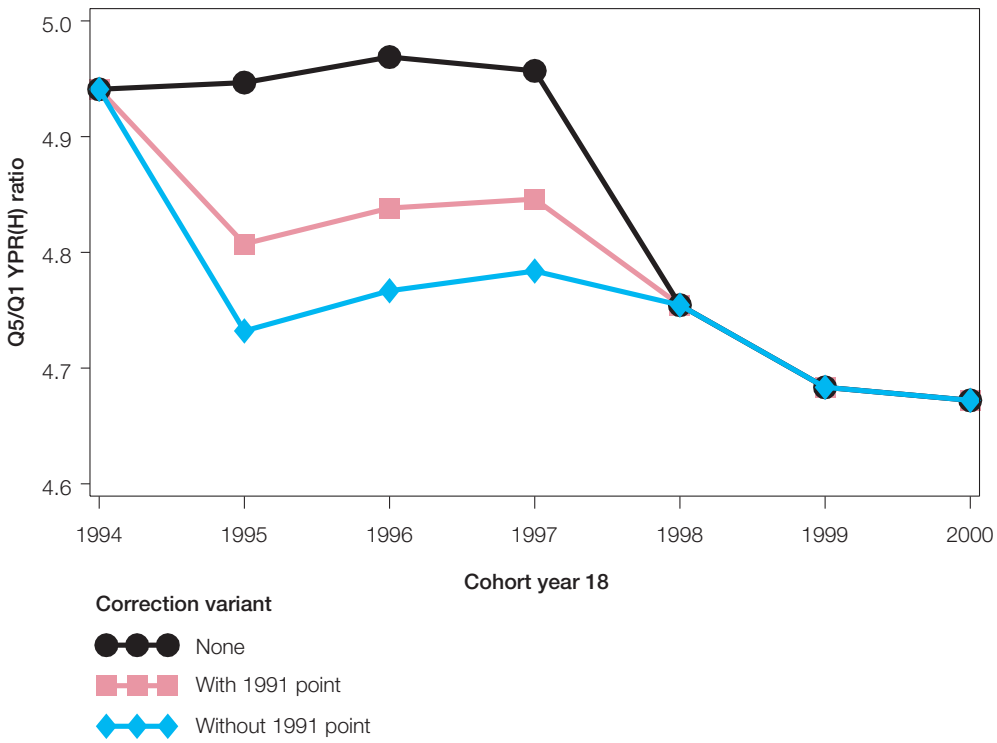



Figure 69 **Effect of no correction, using 1991 data point and not using 1991 data point on the YPR(H) ratio of the fifth and first ward YPR(H) quintiles**



## B.3 Changing cohort group shares through time

Even when the group cohort estimates are correct, there is a related but different concern about what the relative changes in the profile of the cohort across the period mean for the interpretation of the group trends. For instance, if the share of the cohort living in the (fixed) group of lowest participation wards averaged 20 per cent over the period but fell from 30 per cent for the 1994 cohort to 10 per cent for the 2000 cohort, then it might be possible that those remaining in these areas could be becoming progressively more disadvantaged as they represent a smaller and smaller share of the population. Figures 70 and 71 explore these concerns by showing the cohort estimate and cohort share respectively of ward YPR(H) quintiles between 1994 and 2000.

From Figure 70 it is clear that the dominant effect on the cohort size of each group is the general rise and fall of the total cohort size. The cohort sizes of the groups themselves show no dramatic differential growth, remaining within 5,000 of each other, but there has been some relative movement indicated by the group cohort lines crossing over. These small differences are magnified in Figure 71 which shows the proportion of the annual cohort in each group. This highlights that the proportion of the cohort living in the fifth quintile wards has declined from 20.7 per cent for the 1994 cohort to 19.5 per cent for the 2000 cohort, a fall of 1.2 percentage points. The fourth and third quintiles maintain near steady shares over the period, whereas the first and second quintiles increase their share by around 0.5 percentage points.

These modest changes, which are repeated for other groupings, are sufficiently small that the groups can be taken as representing broadly the same proportional share of advantage and disadvantage over the period. In particular the first quintile increase from 19.8 per cent of the cohort to 20.3 per cent of cohort over the period is not sufficient to explain – by a mechanism of dilution of disadvantage – the typical proportional participation increase of 15 per cent seen for these groups. This is not to say that the nature or level of disadvantage of these areas has not changed (indeed, a possible explanation for this proportional increase in participation may be a declining level of disadvantage for these low participation areas). It only shows that the change in the shares of the cohort are too small to account for the participation rate changes by the addition or loss of marginally better or worse participating components of the cohort.

Figure 70 **Annual cohort sizes for ward participation quintiles (England)**

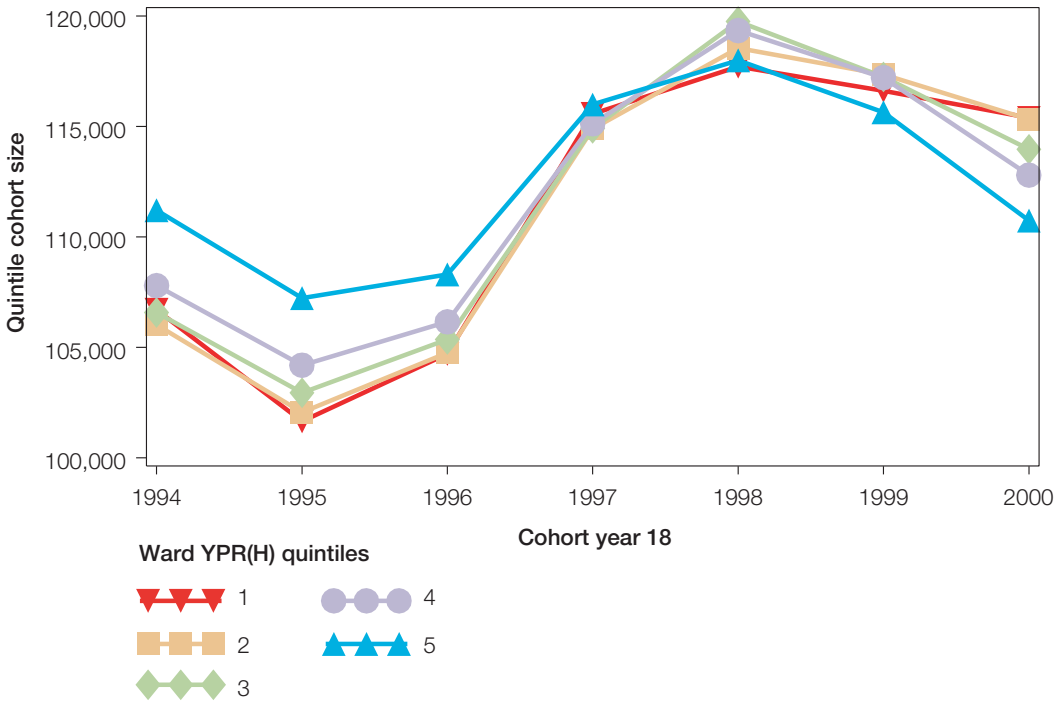
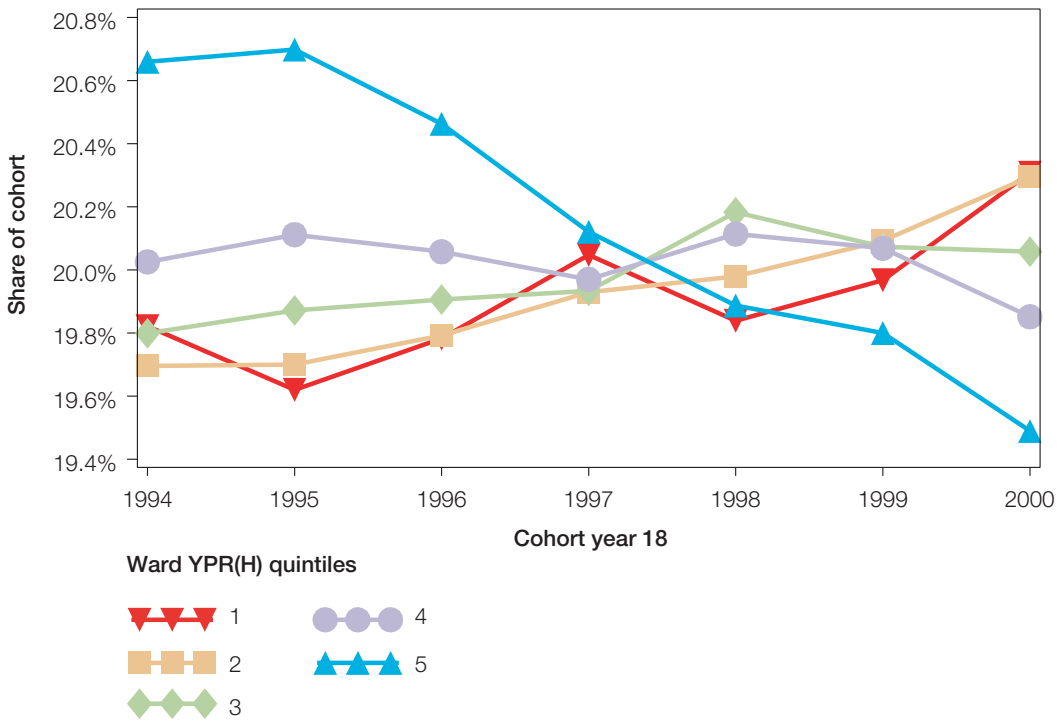



Figure 71 **Share of annual cohort by ward participation quintiles (England)**



# Annex C
# Counting the HE entrants

The count of HE entrants is potentially more straightforward then the cohort estimate as the UK is fortunate in having a set of comprehensive individualised administrative data sets for HE students. However, creating the best count of entrants requires careful treatment of these data sources.

## C.1 Data sources for HE entrants

The key characteristics of the data sources for HE students used in this project are listed below. Together these data sources should capture all HE study by home students in Great Britain. HE students at FEIs in Northern Ireland are not considered individually in this report though an aggregate estimate of the level of such participation is made[6]. Participation in HE courses wholly outside the UK, for example in the United States of America, is not recorded.

**Higher Education Statistics Agency (HESA) Student Record** This is an individualised record for HE students at UK HEIs that has been collected annually since 1994-95. It contains details of the course of study and some personal details of the student (for example, date of birth and postcode prior to entry).

**Individualised Student Record (ISR)** The ISR was an annual collection of data on all courses, including those at HE level, being studied in FEIs. Slightly different versions for institutions in England and Wales were collected by the respective further education funding councils. Suitable personal data for record linking are available from 1997-98 onwards. The final ISR collection was 2001-02. It has now been superseded by the Individualised Learner Record (ILR) administered by the Learning and Skills Council.

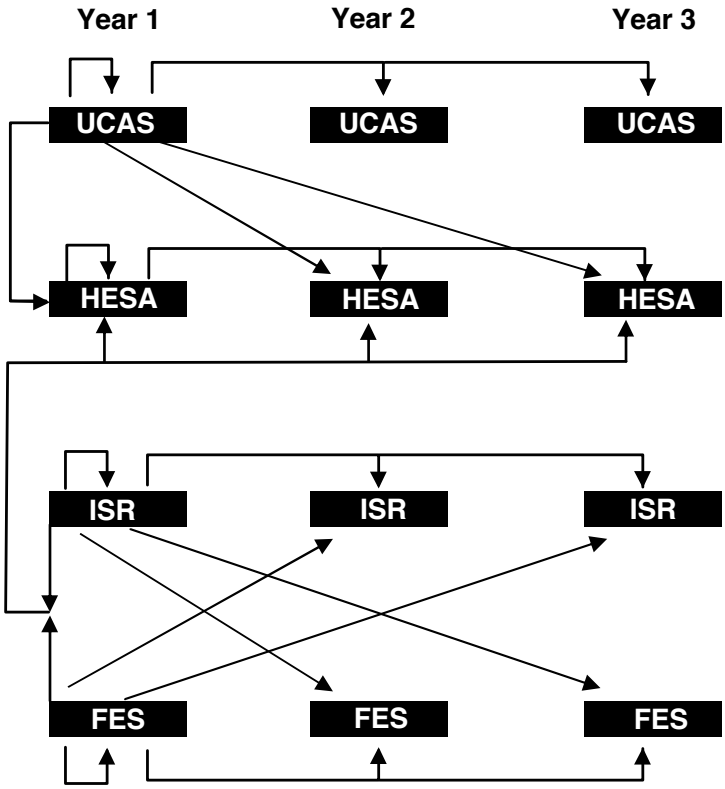
**Further Education Statistics (FES)** This is a two-level annual collection (FES1, courses and FES2, students[55]) from FEIs in Scotland, administered by the Scottish Further Education Funding Council. It contains course and student details, including HE level courses, and is available from 1994-95. Records from 1997-98 onwards are used in this report.

**Universities and Colleges Admissions Service (UCAS)** This is a data set of applications and acceptances to full-time undergraduate courses in the UK. Almost all young entrants to full-time undergraduate courses use the UCAS admissions system. Acceptances are not the same as entrants (some acceptances never start, some entrants bypass the UCAS system) so this data set is not used for the entrant count directly. However, reflecting its use in the admissions process, the personal data on the UCAS records (postcode prior to entry, last institution attended, etc) is of high quality and used to strengthen and enhance the HE student records.

## C.2 Linking together the HE entrant data sources

The key stage in using these HE data sources to give an accurate entrant count is to link the different records for a single individual within and across data sources and through time. This is a multi-stage process involving matching on internal record keys (such as the student identifier on the HESA record) and personal details such as date of birth and elements of names. A simplified diagram of the linking process from a single year of student data is shown in Figure 72. This process is repeated for each year of student data and the resulting set of matched records assembled into a longitudinal data set which tracks individual HE experiences.

Figure 72 **Schematic of data links formed between records in one year and two subsequent years of data**




**Key**

| | |
|---|---|
| → | Link between individual records between data sources |
| **HESA** | Higher Education Statistics Agency student record |
| **UCAS** | Universities and Colleges Admissions Service applicants data set |
| **ISR** | Individualised Student Record (English and Welsh FEIs) |
| **FES** | Further Education Statistics (Scottish FEIs) |

*Note: The definition of young entrants used in this report uses linking from two years of student data (to allow entry at ages 18 and 19). Information on progression and qualification rates is obtained from further linking of the HESA student records.*

This linking process serves three main purposes in obtaining reliable entrant counts:

a. *Avoids reliance on fallible record fields.* Translating the complex entry and progression behaviour of students to simple student record fields such as 'starting date' or 'first year student' is not straightforward. Relying on these fields from a single year of student records can readily lead to errors. Tracking

students through time means that they can be determined as entrants to HE – according to a chosen set of conditions – by reference to their history in HE using only a small set of reliable fields (principally the level of course being studied).

b. *Allows the elimination of double counting of individuals in a cohort.* Double counting can occur within a single year of student data (for example, a student may change institution halfway through an academic year) or between years (for example, a student who gives up very early in a course but has another go the next year).

c. *Better data for entrants.* For area participation analysis the postcode prior to entry field is vital. Unfortunately the coverage of this field can sometimes be patchy, especially in the early years of the student records. By linking records across time and, in particular, to the UCAS applications data set, the overall coverage of this, and other fields, can be raised to very high levels. More importantly, the patchiness (for example a particular institution missing off postcodes in a particular year which can introduce regional biases) can be repaired. The linking of records in itself can provide novel data items such as details of entry route or qualification outcomes, as well as linked descriptive data such as social class (from UCAS records).

The linking techniques used in this process have been developed at HEFCE over a period of seven years. Tests for internal consistency give good results, and the use of the linked data in the HEFCE Performance Indicators[41] since 1999 has meant that the individualised intra-institutional results have been scrutinised by HEIs and found to be suitable for publication. The net effect of the better selection of entrants is a reduction in measured participation rates (primarily due to elimination of double counting). For example, the introduction of a linking method to reduce double counting in the DfES IER measure reduced its estimate of participation by around 5 percentage points[62].

## C.3 Defining entrants

The longitudinal data set from the linking process can be used to identify each instance of an individual in the HE record systems through time. The selection of YPR entrants takes advantage of this and proceeds as follows:

a. From the longitudinal data set, select all records from the chosen academic years (the number of years used will correspond to the age span considered young for HE entry, two years in the case of the YPR measures) and disassemble to a set of records from the original data sources (HESA, ILR, etc).

b. Filter these original records to reflect the chosen participation definition. For example, this would typically specify a single year of age cohort (aged 18 on 31 August of a particular year for example), studying a full-time course, etc, but might also specify only men or only study at an HEI.

c. This subset of records will contain many cases of multiple records for an individual. For example, for someone who entered at age 18 and then continued into their second year there would be two records (one from their first year, age 18, and one from their second year, aged 19). To produce the final entrant count all the records for an *individual* (by reference to the longitudinal data set) are considered and a set of rules applied to consistently select the most appropriate record. Typically this will involve selecting the earliest record so as not distort the time series of the ratio of 18 year-old to 19 year-old entrants.

This method ensures that each individual is counted only once in the entry period considered, regardless of how many records relate to them across the HE record systems and the different years of the entry period. The method is easily modified at stage (b) to produce the different participation variants – YPR(H), YPR(A) and so on – used in the report.

Table 8 lists the main criteria common to all the YPR measures. These criteria aim to be as comprehensive as possible for the type of HE study for this age group, while remaining sufficiently well defined to be consistent through time and between data sources. The participation variants used in this report differ slightly in their additional criteria; these are listed below.

Table 8 **Core entrant definitions common to all YPR measures**

| Criteria | Purpose |
|---|---|
| **Home** | To select entrants usually resident in the UK. |
| **Young** | Aged 18 or 19 defined relative to the country-specific school calendar. For English and Welsh students this is defined as being aged 18 or 19 on 31 August prior to the start of the academic year. For Scottish students this is defined as being 18 or 19 on 28 February following the start of the academic year (this is a compromise reference date since the Scottish system allows an element of parental discretion in entering school years so that a fixed date cannot be defined). For entrants from Northern Ireland the age on 1 July prior to the start of the academic year is used. |
| **Full-time** | To measure substantive full-time participation (full-time is the overwhelming, 99 per cent, HE mode of study for this age group). Records for part-time study, especially in the earlier years of the period, have poor data coverage leading to problems in tracking students and geographical referencing. |
| **Undergraduate** | Students studying for first degree, HND or HNC are counted as these qualifications are robustly defined between record systems and through time. Together these study aims account for nearly all higher education entrants in England, for example including less well defined diplomas and certificates of HE adds only 2 per cent to the entrant count. In Scotland this proportion is higher at around 5 per cent. In addition, the Scottish FES includes a set of qualifications taken as HE level for the purposes of the FES but, for consistency with the other UK countries these are not taken as HE for this report[56]. If included these qualifications could add up to 1,000 extra entrants per cohort equating to another 1-2 percentage points of participation for Scotland. |
| **No HE on entry** | Entrants who already hold an undergraduate qualification are not counted in new entrant measures of participation. Around 2 per cent of young entrants are recorded as having HE qualifications on entry. Some of these are probably miscoding of entry qualifications (for example misclassification of BTEC levels) or wrongly entered birthdates (that is, the entrant is not young). |
| **Not an early leaver** | Entrants who start and leave a course before 1 December (around 2 per cent of young entrants) are removed. This is because, especially in the earlier years of the sequence, there was some variability between institutions in recording these early leavers (which could introduce regional or other biases). |
| **Not from an overseas school** | Some entrants are recorded as having their last institution as a school overseas. There are two reasons for this: they are the children of UK residents who are temporarily working overseas (for example, diplomats, armed forces) or they are non-home entrants who have been assigned home status through a UK correspondence address. In both cases they are unlikely to have been included in the cohort estimates so are removed from the count. This affects only around 300-400 young entrants per cohort. |

*Note: The figures in this table refer to a comparison of the UK YPR(H) measure against the broader YPR(HX) – see Table 9 – measure unless otherwise noted.*

**YPR(H)** Entrants are further restricted to only those recorded in the HESA record. Almost all of these entrants will be studying at an HEI, but a small proportion will be studying in an FEI by a franchise arrangement with their student records being included on the HESA record as part of the parent HEI's return. The main advantage of this variant is that it enables a consistent time series for seven cohorts from 1994 to 2000. To maintain this consistency over the period, entrants to a small number of HEIs that are not common to each year of the HESA record over that period are removed (that is, they are either entirely new institutions or they were previously or subsequently recorded in a different student record[57]). The effect of the absorption of nursing colleges by HEIs is considered in Annex I. For the 18 and 19 year-old age group this did not have a large effect: the misrepresentation of participation caused by removing all those studying subjects allied to medicine was judged to be greater than the small temporal bias caused by leaving them in the sequence.

**YPR(A)** Entrants are counted from all the HE data records (that is the ISR/ILR and FES as well as the HESA record) but only for the 1997 and later cohorts. The principal advantage of this measure is that it captures participation in different types of institution, which is critical for assessing participation in Scotland. Institutions that are not common to all the records over this period are removed from the HESA record (but not the FE data sources)[57].

**YPR(F), YPR(C)** The YPR(F) measure only covers students in FEIs that are included in one of the FEI data returns (the ISR or FES). The YPR(C) includes the YPR(F) entrants and also students who studying in an FEI but are returned by an HEI to the HESA record under a franchise arrangement. Note that the sum of the YPR(H) and YPR(F) measures is generally greater than the YPR(A) measure since the HE experience of some YPR(A) entrants includes periods in both an HEI and an FEI.

## C.4 Sensitivity analysis of the entrant count and the participation measures

The specification of entrant definitions and the treatment of missing or problematic geographical referencing affects the total and geographical distribution of the entrant count. This section examines any effect of these issues on the overall and group results reported.

## C.5 The effect of modifying the entrant definition

The core definitions used for the entrant count have been set out in Table 8. The requirement to be resident in the UK is clearly a prerequisite for UK participation measures, and the choice of age range taken as young is covered in Annex D. The remaining specifications cover mode of attendance, qualification aims, entry qualifications, leaving dates and school origin. Extending the qualification aim to include other types of undergraduate study (Diplomas and Certificates of HE) and removing the other restrictions creates two new measures –YPR(HX) and YPR(AX) – which are the extended versions of YPR(H) and YPR(A) respectively. These can be used to investigate the combined effect of these exclusions on the results.

Table 9 shows the YPR(H), YPR(HX) and their difference by country and cohort. Table 10 shows the equivalent statistics for the YPR(A) based measures. Figure 73 plots the four participation measures for England.

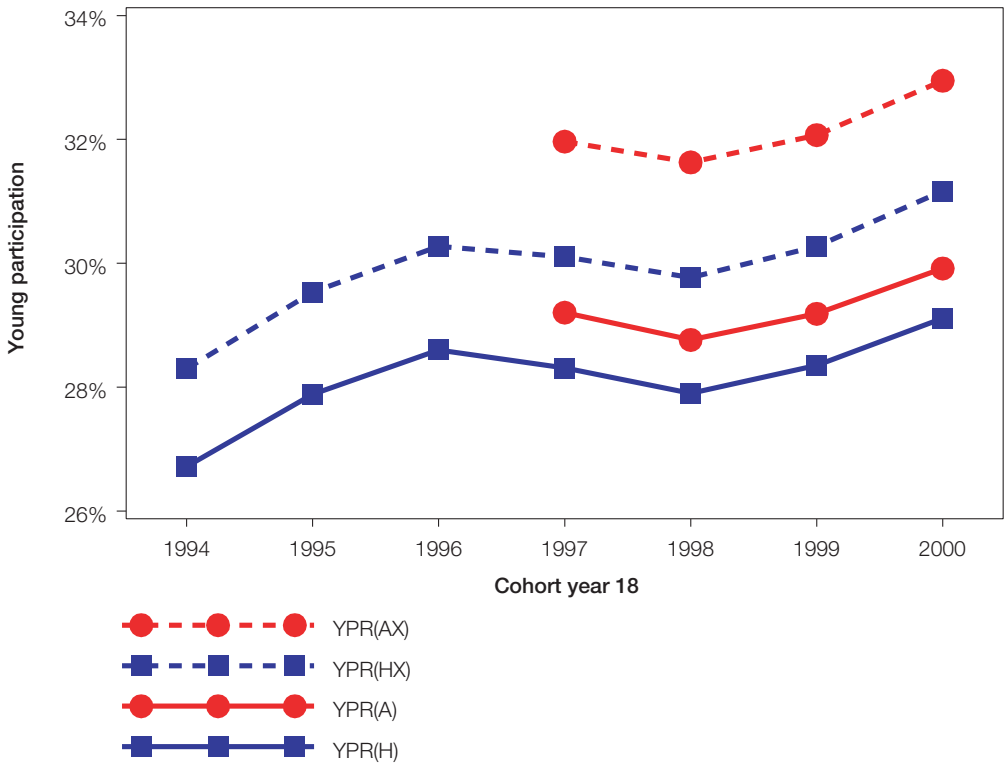
Table 9 **YPR(H), YPR(HX) and their difference by country and cohort**

| | | Cohort year | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| **YPR(H)** | England | 26.7% | 27.9% | 28.6% | 28.3% | 27.9% | 28.4% | 29.1% |
| | Wales | 27.5% | 28.0% | 29.0% | 28.8% | 29.4% | 29.5% | 30.2% |
| | Scotland | 25.0% | 26.6% | 26.5% | 26.2% | 25.0% | 25.8% | 27.1% |
| | Northern Ireland | 28.3% | 29.5% | 29.6% | 30.2% | 29.8% | 30.3% | 31.9% |
| **YPR(HX)** | England | 28.3% | 29.5% | 30.3% | 30.1% | 29.8% | 30.3% | 31.2% |
| | Wales | 29.5% | 30.2% | 31.3% | 31.5% | 32.3% | 32.1% | 32.9% |
| | Scotland | 26.2% | 28.5% | 28.5% | 28.5% | 27.5% | 28.4% | 31.0% |
| | Northern Ireland | 29.5% | 30.9% | 31.5% | 32.6% | 32.6% | 33.1% | 35.2% |
| **YPR(HX)-YPR(H)** | England | 1.6% | 1.6% | 1.7% | 1.8% | 1.9% | 1.9% | 2.1% |
| | Wales | 2.0% | 2.3% | 2.3% | 2.7% | 2.9% | 2.6% | 2.7% |
| | Scotland | 1.2% | 2.0% | 2.1% | 2.3% | 2.5% | 2.5% | 3.9% |
| | Northern Ireland | 1.1% | 1.3% | 1.9% | 2.4% | 2.8% | 2.8% | 3.3% |

Table 10 **YPR(A), YPR(AX) and their difference by country and cohort**

| | | Cohort year | | | |
|---|---|---|---|---|---|
| | | 1997 | 1998 | 1999 | 2000 |
| **YPR(A)** | England | 29.2% | 28.8% | 29.2% | 29.9% |
| | Scotland | 38.1% | 36.4% | 37.0% | 38.7% |
| **YPR(AX)** | England | 32.0% | 31.6% | 32.1% | 32.9% |
| | Scotland | 41.7% | 40.5% | 41.4% | 43.2% |
| **YPR(AX)-YPR(A)** | England | 2.8% | 2.9% | 2.9% | 3.0% |
| | Scotland | 3.6% | 4.1% | 4.4% | 4.5% |

Figure 73 **Young participation variants for England**




These show that the effect of removing all these entrant definition restrictions is to add up to 2 per cent to the English YPR(H) measure and up to 3 per cent to the English YPR(A) measure. The extent of this excluded entrant participation has risen between the 1994 and 2000 cohorts, but not enough to change the interpretation of the overall trends which, as Figure 73 shows, remain intact. For the other countries, particularly Scotland, the effect of the restrictions is generally larger and has risen more over the cohorts. Although these extended measures can be taken as an upper estimate of young participation, it should be remembered that they include some entrants (such as those who already have HE qualifications and those with only a fleeting presence in HE) whose eligibility for a meaningful participation measure is questionable.

By taking the difference statistic, YPR(HX)-YPR(H), and the ward participation quintiles, the distribution of these excluded entrants across different areas can be examined. Figure 74 shows this difference rate for the ward YPR(H) quintiles. The majority of the excluded entrants come from higher participation areas: the fourth and fifth quintiles have excluded entrant participation rates of around 2 per cent. For the first participation quintile the excluded entrant participation rate is lower at around 1 per cent but this a larger proportional increase on the YPR(H) rate than for the higher participation quintiles. However, the small absolute values of these differences and the uniform group trends mean that the interpretation of the overall group analysis is unchanged. Figure 75 shows a proportional participation increase plot for quintiles formed on wards ranked by YPR(HX) and it is very similar to the equivalent YPR(H) ranking proportional change plot in Figure 28.

Figure 74 **Participation rate of entrants included in the extended YPR(HX) definition but removed from the YPR(H) definition (by YPR(H) quintile, England)**

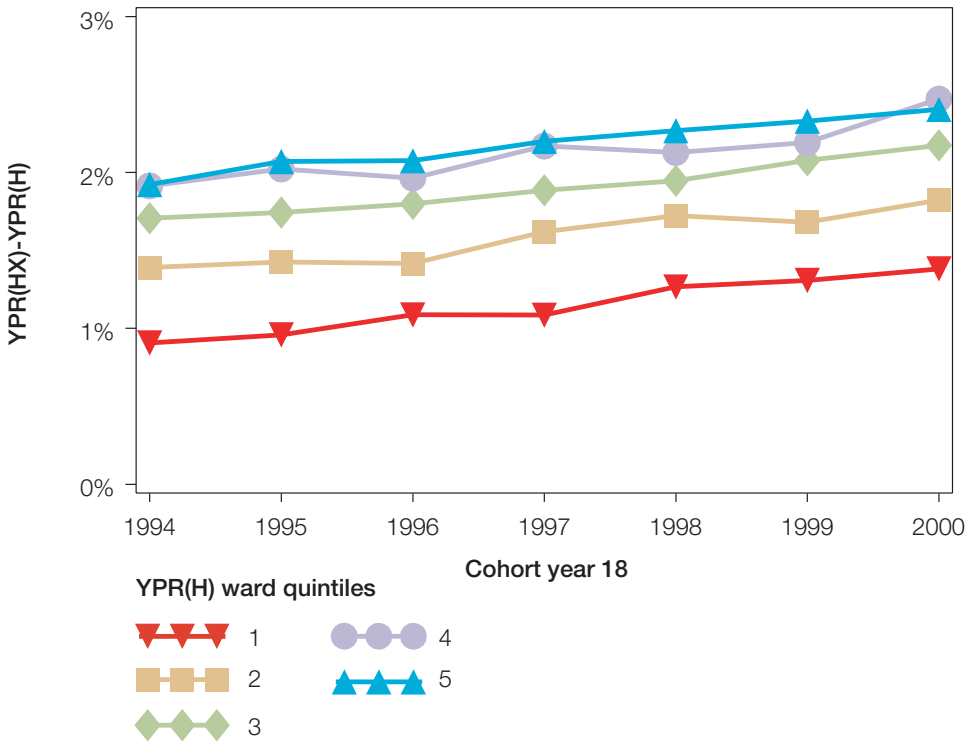
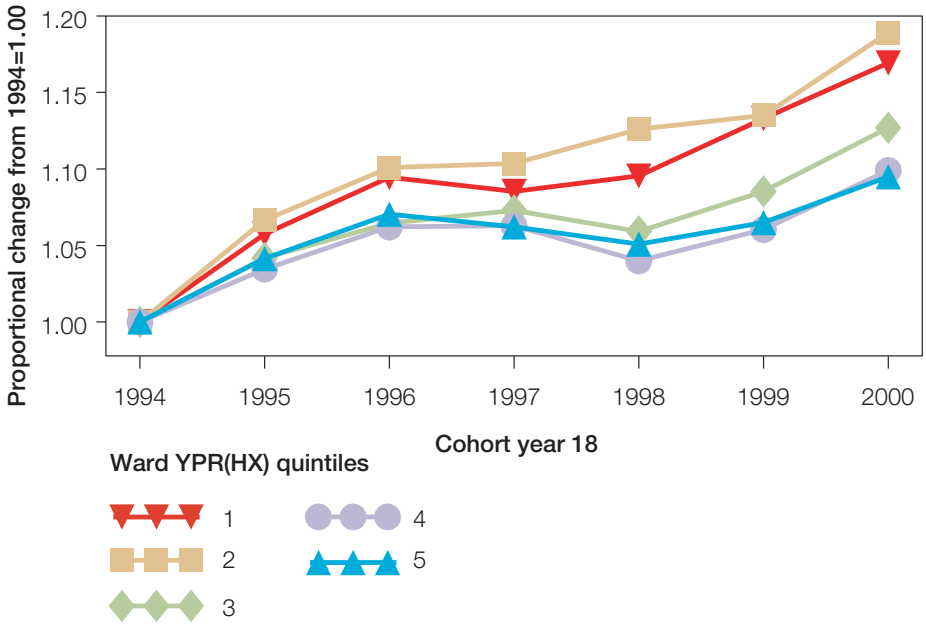


Figure 75 **Proportional changes in YPR(HX) participation for ward YPR(HX) quintiles (England)**




## C.6 Introduction of foundation degrees

There are some particular concerns with the introduction of a new HE qualification, the foundation degree, at the end of the time series. A small number of institutions piloted the foundation degree qualification for the academic year 2000-01 but it was not identifiable on the HESA student record as a distinct qualification until the 2001-02 record. Neither the foundation degree nor the typical qualification aim coding of the pilot schemes are included in the entrant count definitions. This could cause a downward bias in the participation rates for the 2000 cohort if large numbers of entrants who previously would have studied for a first degree, HND or HNC were choosing this qualification instead.

To examine the likely magnitude of this effect the English 19 year-olds studying for foundation degrees from the 2001-02 HESA records were analysed. These students will be a mixture of 18 year-old entrants to the 2000-01 foundation degree pilot and 19 year-old entrants to 2001-02 foundation degree courses, and can be taken as an approximation of the likely foundation degrees entrants from the 2000 cohort. This analysis shows that, for the 2000 cohort, the 'entrants' to foundation degree courses are small in number, under 350, and divided across the ward participation quintiles in a very similar way to the other YPR(H) entrants. This means that omitting foundation degrees for the 2000 cohort reduces the YPR(H) participation rate by much less than 0.1 per cent, and the relative participation of the YPR(H) quintiles is not affected. These findings reflect the situation at the inception of foundation degrees: they may not hold true as the qualification becomes more established and foundation degrees would need to incorporated into future participation measures.

## C.7 Missing and problematic geographies

### Entrants mapped to problematic geographies

At the end of the entrant selection stage there are a small number of entrants who are mapped to problematic geographies. A negligible number (around 200 per cohort, 0.1 per cent of entrants, steady across cohorts) are mapped to the institutional special enumeration districts described in Annex A; these are removed from the analysis. Postcodes that appear to supply unfeasibly large numbers of entrants are identified and are usually found to be either boarding schools or other institutional addresses. A fixed set of these problem postcodes is defined by reference to the whole period, and the set of EDs holding these postcodes is removed from the participation analysis. Around 1,000 entrants per cohort (0.5 per cent of all entrants, steady across cohorts) are mapped to these problem EDs and removed from the analysis in this way.

During the estimate of the small area populations (Annex A) a small number of areas were identified as having very rapid population growth or decline. These areas are included in most analyses but removed for the quintile trend analysis for the reasons spelt out in Annex A: the population movements indicate that the nature of the area may have changed over the period. The proportion of entrants that fall into this category increases from around 0.7 per cent of the 1994 cohort to 1.5 per cent of the 2000 cohort (this increase is expected since the majority of these marked areas have rapid population growth).

The character of these different categories of removed entrants can be estimated by looking at the pattern of some of the non-geographical entrant characteristics that are known to have an association with the participation background of the entrants (see Table 2). Table 11 compares some of these characteristics for the 2000 cohort against the type of exclusion. This shows that those removed for being mapped to a problem ED (those with postcodes that have unfeasibly large numbers of entrants) appear to have characteristics consistent with those entrants from the highest participation areas. This is not unexpected as many of the problem EDs contain boarding schools. The small numbers of entrants excluded because they are matched to special EDs also appear to have characteristics that are similar in aggregate to those from high participation areas. Those removed from the quintile trend analysis because of suspected change in the nature of the area show characteristics that are similar to the entrants retained in the analysis.

Table 11 **Selected characteristics of English YPR(H) entrants matched to excluded geographies**

| | Percentage of entrants in each ED type with characteristic | | | | |
|---|---|---|---|---|---|
| Entrant characteristic | All types | Excluded (problem ED) | Excluded (special ED) | Excluded from quintile analysis (changed area) | Included |
| Social class IIIM, IV, V (UCAS entrants) | 25 | 10 | 14 | 24 | 25 |
| Entrant pays all of tuition fee | 42 | 61 | 61 | 43 | 42 |
| 16-18 institution is an independent school | 15 | 75 | 61 | 10 | 15 |
| A-levels 1-17 points or non A-level entry qualifications | 47 | 26 | 38 | 53 | 48 |

## Entrants not mapped to a geography

There are a small number of entrants who cannot be allocated to an ED. This is because either their record does not provide a valid postcode or it is one of a small number of postcodes on the All Field Postcode Directory that is not mapped to an ED. This was a significant problem for the 1994 cohort, with 4.5 per cent of (English domiciled) YPR(H) entrants not assigned to an ED. This proportion falls sharply to 1.4 per cent for the 1995 cohort and then steadily declines to 0.4 per cent by the 2000 cohort. The other countries show similar patterns though the proportion of unassigned postcodes remains higher in NI at around 6 per cent. To avoid the increasing quality of postcode coverage on the student records distorting the participation time series, a set of weights are attached to entrants assigned to EDs so that they sum to the total number of entrants. These weights are calculated within country (assigned from country-level domicile fields for the missing postcodes), cohort and entry year groups.

The very much higher proportion of unmapped entrants from the 1994 cohort is of concern: if they are very different in participation background from other entrants then their rapid elimination in the 1995 cohort could introduce a bias into the early part of the quintile trend analysis. For the later cohorts it is possible to look at other entrant characteristics (as in Table 11) which indicate that these unmapped entrants are broadly similar in nature to their mapped peers. However the problematically high number of unmapped entrants for the 1994 cohort is mostly caused by entirely missing postcodes concentrated in a small number of HEIs. Unfortunately these missing postcodes are frequently paired with high proportions of missing data for other potentially descriptive fields (such as 90 per cent missing for social class) so that these characteristics cannot be used to estimate the likely participation background.

One data item that is known for these unmapped cases is the institution of study. For the 1994 cohort, eight problem HEIs were identified that had over 100 unmapped entrants which accounted for more than 5 per cent of their total entrants. The ward participation quintile profile of entrants from these institutions for the 1995 cohort (where these institutions do not have any special coverage problems) was calculated and substituted for the partial 1994 cohort profile. This is equivalent to weighting the unmapped entrants by the typical distribution of entrants to that institution, rather than a modified national average.

This analysis indicated that the clumping of the 1994 unmapped entrants in a small number of HEIs leads the simple weighting process to under-estimate the number of entrants from low participation areas and over-estimate the number of entrants from high participation areas. Some of this effect may be from the genuinely different profile of entrants from the later cohort (as both the cohort and participation of low participation areas has grown proportionately faster). However, even if all of this weighting error is attributed to the unmapped entrants then the overall effect remains very small. The number of entrants from the first and second participation quintiles is indicated to be under-estimated by a maximum of around 2 per cent (proportionally); and those from the fifth quintile to be over-estimated by a maximum of around 1 per cent (proportionally). These are small proportional changes compared to the proportional increases in quintile participation of between 6 per cent and 10 per cent observed between the 1994 and 1996 cohorts (where the effect of the unmapped EDs is largely removed). This would support a conclusion that the decline in unmapped entrants does not significantly distort the reported quintile trends.

Of the unmapped entrants at the eight problem HEIs, over half are concentrated in institutions in one region (the North West) with nearly all the remainder in institutions in two further regions (the East Midlands and West Midlands). This regional concentration, and the fact that the institutions affected have substantial local components to their recruitment, means that the regional participation rates for the 1994 cohort may be distorted by the unmapped entrants weighting method used for the main results.

Substituting (for the problem HEIs only) the regional profile of the 1994 cohort entrants for that from the1995 cohort entrants allows an estimate of the likely extent of the distortion resulting from using the standard weighting method. Table 12 shows regional YPR(H) for the 1994 cohort under the standard and institutional substitution adjustments. The results are as would be expected: small participation increases in the regions with the problem HEIs and balancing small decreases elsewhere. As with the adjustment for the quintile results, some of the correction may be picking up genuine changes in regional recruitment patterns between the cohorts but this is unlikely to account for the size of the changes seen. The largest change is for the North West where the institutional substitution weighting gives a participation estimate 0.7 percentage points (3 per cent proportionally) higher than under the standard method. For the analysis looking at regional trends in participation from the 1994 cohort (Figures 14 and 16) the institutional substitution adjustment is used, elsewhere in the report the standard adjustment is used.

Table 12 **Regional YPR(H) for the 1994 English cohort under standard and institutional substitution adjustments**

| Region | YPR(H) - Standard | YPR(H) - HEI substitution |
|---|---|---|
| North East | 22.2% | 21.9% |
| North West | 24.1% | 24.8% |
| Yorkshire and the Humber | 22.3% | 22.3% |
| East Midlands | 25.6% | 25.9% |
| West Midlands | 25.0% | 25.3% |
| East of England | 27.4% | 27.3% |
| London | 29.8% | 29.5% |
| South East | 31.3% | 31.0% |
| South West | 28.8% | 28.3% |

# Annex D
## Choice of age range taken as young

Many factors, such as examination results and student support changes, affect cohorts that are defined relative to school years, so it is desirable to determine age with reference to the dates that define eligibility for school years. This is further confirmed by the strong relationship that participation (for example, see Figure 12) and entrant behaviour (Figure 80) show with the school year reference dates. Annex C indicated that the key criterion in defining the entrants was the age range of entry taken to be 'young' for participation.

This annex explains the reasons for choosing the school-aligned entry ages of 18 and 19 as young. It notes the relative ease of robustly defining entrants for small areas for the young compared to other age groups; and discusses the issue of the validity of the resulting participation rates (that is, do the area participation rates properly characterise the neighbourhood). The significance of young entrants (in terms of their domination of entrants) and their distinctiveness (in their entry characteristics and progression) are also examined.

### D.1 Practical considerations

The most important criterion for the age range to take as young is that it should lead to a participation measure that can be reliably calculated. Using 18 and 19 year-old entrants gives some advantages, not shared by other age ranges, that enables participation rates to be calculated.

Using 18 and 19 year-olds leads to entrant and population definitions that are robust and calculable. Entrants of this age are very unlikely to have existing HE qualifications since they would not have had sufficient time to complete them. This reduces the importance of the accurate recording of entry qualifications across the different data sources. Another difficulty with defining entrants, determining whether they have been in HE before without gaining a qualification, is similarly reduced by the limited opportunity for prior experience. Further, by the methods described in Annex C, it is possible through record linking to eliminate this source of error altogether. Although these linking processes can be extended to cover a larger number of years, the process becomes more difficult and uncertain as many of the data items used to form or confirm individual matches (such as postcodes or names) are more likely to change. The risk of false matches also increases: in national measures such as the HEIPR (see Annex E) this can be corrected using factors estimated from simulating known false matches, but this approach would not be as suited for small area measures.

Annex E sets out why using a real cohort participation measure is necessary to detect small annual changes in cohort participation. The drawback of this method is that it requires a year of student records for each year in the young entry age range. For example, basing entry on 18 to 21 year-olds would require four years of student records relating to potential entry at each of those ages. This would mean that for the cohort reaching 18 in 2000 the calculation of the rate would be delayed until the student records for the academic year 2004-05 were ready for analysis. Restricting young participation to 18 and 19 year-olds requires just two years of data, so participation rates can be obtained in a reasonable time.

The method for producing the small area population estimates described in Annex A relies on several data sources and assumptions that are only reliable for entry at young ages such as 18 or 19. The young age range and estimate method mean that no adjustments are needed to the small area population estimates to allow for either differing levels of HE qualifications and previous or current participation in HE. The loss of these advantages is the main reason why it is not possible to produce analogous accurate annual small area population estimates for older age groups.

## D.2 Entry age and the validity of young participation rates

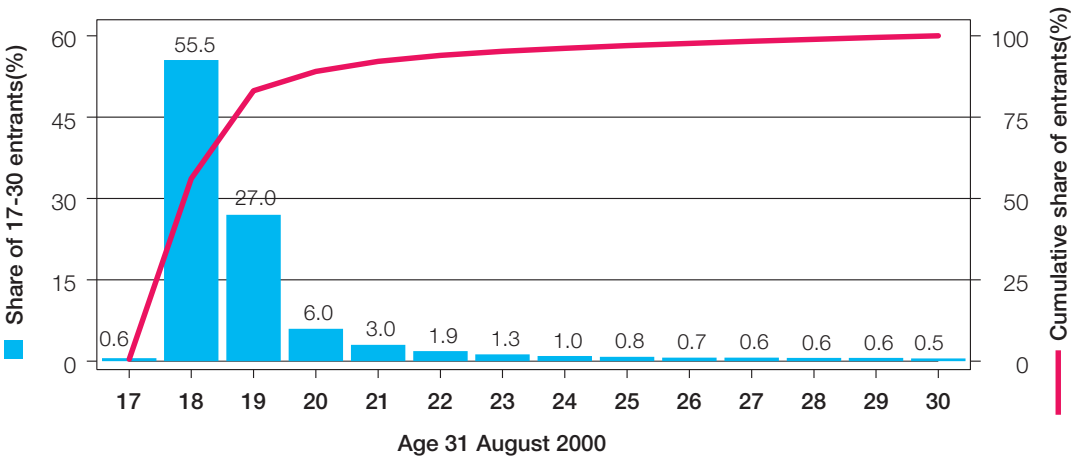
Using entry ages of 18 or 19 implies a pathway to HE either directly from full-time further education (typically age 18), or after an additional year most likely to be spent retaking examinations, working or overseas travel (leading to entry at age 19). In both these cases it is likely that the pre-admission address given (and subsequently used for the area participation rates) will be that of the parental home. It seems likely that the constraints of studying full-time (while remaining eligible for child benefit) would have reduced the opportunity for entrants to have gained financial independence, and left the parental home, before admission to HE. This means that the count of entrants is likely to be mapped to the area where they grew up. In combination with the school year based cohort estimates (see Annex A), this means the resulting participation rates can be considered 'valid' – in that they are a good description of what happens to children growing up in that area – and can be thought of reflecting how the nature of the area, and the people residing within it, affect the chances of going to university.

The validity and interpretability of the participation rate constructed from entry at ages 18 and 19 can readily be seen by contrasting it with a participation rate using entry over a wider age range. Suppose a 'young' participation rate is constructed from all entrants aged 18-25. For the older members of this group, 10 years have elapsed since they completed compulsory education and, with ample opportunity to gain financial independence, they are much less likely to be living with their parents in the area where they grew up. In this case the 'young' participation rate for an area will be a mixture of the experiences of people who are likely to have grown up in the area and those that have perhaps only lived there for a short time, possibly having lived in a very different type of area previously. It would not necessarily be a valid description of the chances that young people from that area have of going to university. This is not to say that there is no interest in the participation patterns of these older age groups, but rather that even if the very difficult practical problems could be solved (relating to properly defining new entrants and determining the population denominator for a very mobile and poorly recorded age group with geographically varying proportions of those already qualified), the interpretation of the resulting small area participation rates would not be at all straightforward.

## D.3 The importance of 18 and 19 year-olds to young HE

Figure 76 shows the age distribution of an approximate[58] set of English entrants aged 17-30 to full-time first degree courses at HEIs in 2000-01. This is a somewhat crude comparison of the importance of different entry ages because it does not take into account the different cohort sizes or each cohort's different participation history. Nevertheless, it is sufficient to show that entry to this type of HE is dominated by 18 and 19 year-olds, who together make up over 80 per cent of all full-time first degree entrants aged under 30. Entrants to full-time first degrees are younger than entrants to other types of HE but, even when the scope is broadened to include other levels of undergraduate study and both full-time and part-time modes of attendance, the group of 18 and 19 year-olds in full-time HE still accounts for over 70 per cent of all HE entrants aged under 30. Since younger entrants have higher qualification rates than older entrants they form an even higher proportion of HE qualifiers.

Figure 76 **School age distribution of English full-time first degree (approximate) entrants to HEIs 2000-01**



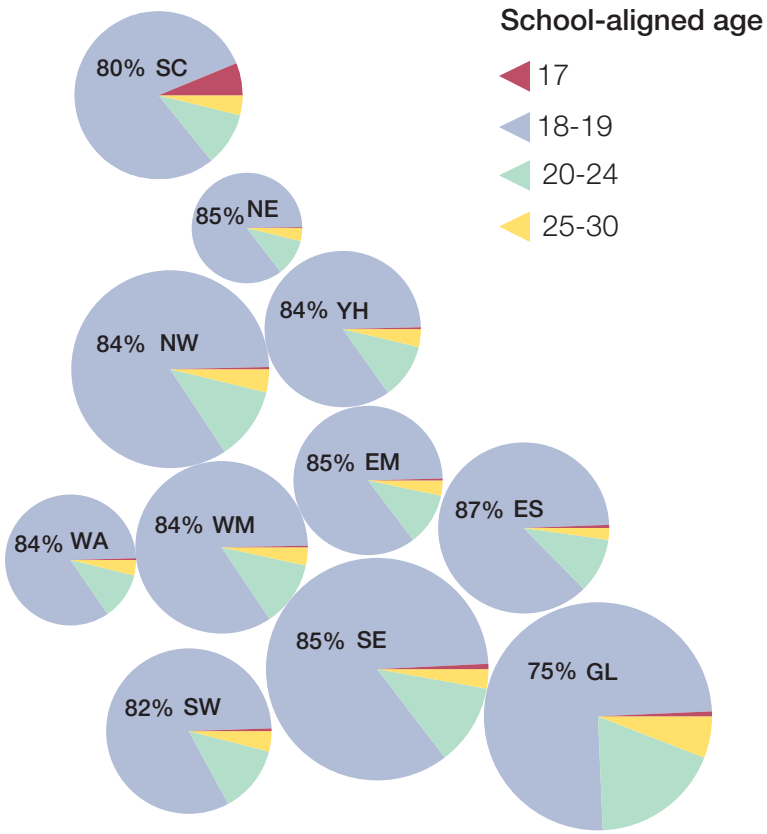

*Note: Approximate entrants[58] are defined by starting date and absence from full-time first degree study in the preceding two years. This means that the proportion of new entrants (not previously in HE) will be less than indicated for the older age groups.*

### Importance of 18 and 19 year-old entrants by region

Figure 77 shows the age distribution of the same set of 17-30 year-old full-time first degree entrants to HEIs in 2000-01 by region. Again this is a rough comparison because it does not allow for the different age structures and participation history of the regions but it does confirm that the national pattern of dominance by 18 and 19 year-olds is common across regions, although there are some differences in the details. There is a significant proportion (6 per cent) of these entrants from Scotland who have a school-aligned age of 17 (that is, aged 17 on 28 February 2001). This is mostly caused by the ambiguity in assigning some birth months to school cohorts due to an element of parental choice in Scotland. This makes it difficult to define a fixed two-year age span to capture 18 and 19 year-old entrants. However the method of defining entrants (Annex C) means that these 17 year-olds will be counted if they are in HE when 18 or 19 (which, due to low non-continuation rates for this age group, will account for the overwhelming majority).

It is also notable that entry at older ages is proportionally more important for entrants from London than elsewhere. This may be an extension of the enhanced 19 year-old participation in London (see Figure 18) but it is unclear whether these higher proportions equate to a genuinely higher propensity of the London cohort to enter HE at older ages, or simply reflect, for example, the high ratio of 20 year-olds to under 20 year-olds in London that is a result of strong inward migration in those age bands. Even in London, 18 and 19 year-olds make up three-quarters of full-time first degree entrants aged 17-30. So, as with the rest of the country, a participation rate based on them will capture the substantial majority of feasibly 'young' participation.

Figure 77 **The age of full-time first degree (approximate) entrants to HEIs (2000-01) by region of entrant**




*Note: Regional areas scaled to total number of approximate[58] entrants aged 17-30. Figures show share of 17-30 year-old entrants that are aged 18 or 19 in each region.*

## D.4 Distinctiveness of 18 and 19 year-old entrants

It has already been shown that entrants aged 18 and 19 form a distinctive group in that they are much more numerous than other age groups: this group retains its distinctiveness across many measures of student characteristics and behaviour.

Figure 78 uses the same group of English full-time first degree entrants to show the variation in the proportion of entrants with high A-level points on entry by age. For entrants aged 18 or 19 the proportion offering high A-level points is around 50-60 per cent; for 20 year-olds it is 25 per cent, trailing off to under 10 per cent by age 30 (where access and foundation qualifications are offered by 40 per cent of entrants).

Figure 79 shows non-continuation rates (from the first year of study) for entrants by age. Again 18 and 19 year-old entrants are distinctive: the proportion not found in HE the next year is 6-8 per cent, half that of the 13-18 per cent for those aged over 20. Figure 80 reports the same non-continuation statistic, but for age months rather than age years. As before, the 18 and 19 year-old entrants have lower non-continuation rates than older entrants. In addition, there are sharp transitions in the non-continuation rate that are coincident with the 18 to 19 and 19 to 20 age boundaries that are not evident on the 20 to 21 and subsequent (not shown) age boundaries. This further confirms that school-aligned ages are the natural age unit for looking at HE, but also suggests that 'young', in the sense of being related back to school experiences, is distinctively captured by 18 and 19 year-olds where the rhythm of the school calendar is still apparent.

Figure 78 **Proportion of English full-time first degree (approximate) entrants to HEIs 2000-01 with 17 or more A-level points by school-aligned age**

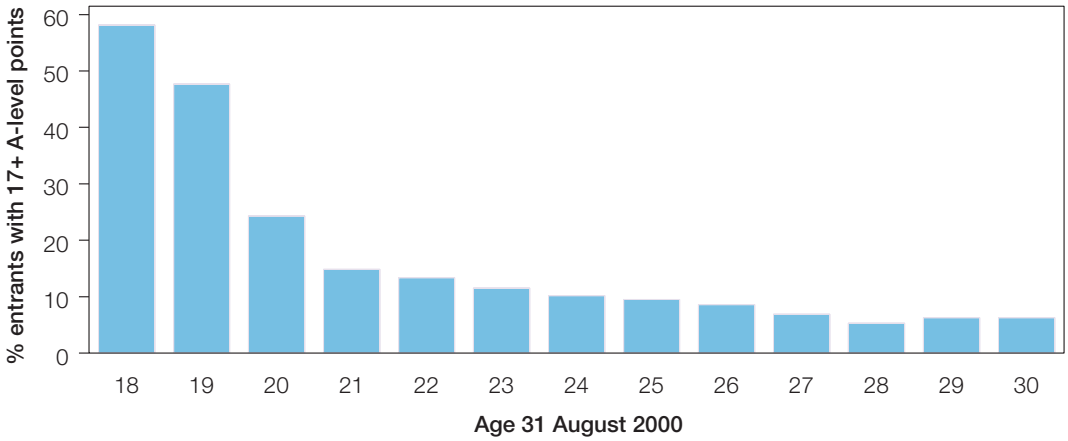



Figure 79 **Proportion of English full-time first degree (approximate) entrants to HEIs 2000-01 not in HE the following year by school-aligned age**

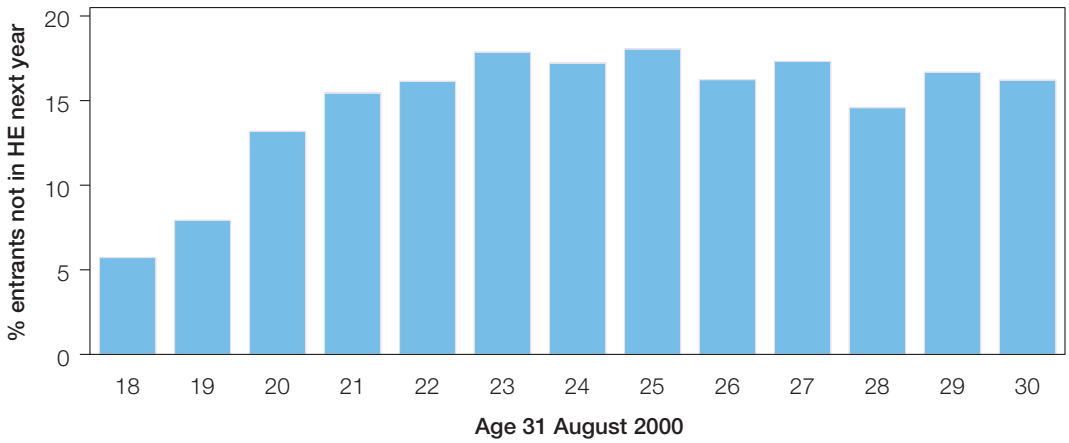
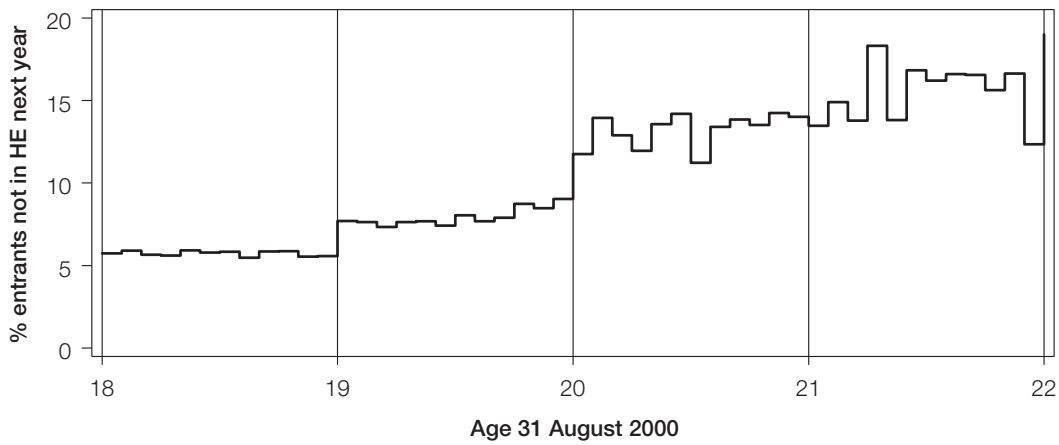



Figure 80 **Proportion of English full-time first degree (approximate) entrants to HEIs 2000-2001 not in HE the following year by month of age**



## D.5 Summary of the choice of age range

The ideal young entry age range would be one that allows the calculation of a reliable measure to encapsulate the likelihood that children growing up in the neighbourhood will become young entrants to HE. Several properties of using 18 and 19 year-old entrants make the calculation of reliable cohort entry measures substantially easier and timelier than with other age ranges. For entrants of these ages there are good reasons to expect that their recorded postcode will be that of their parental home and, in turn, the area where they will have spent at least the later period of their childhood. This property, in combination with an appropriate cohort estimate, can lead to valid participation rates that well describe the experiences of children in the neighbourhood.

A further advantage of taking 18 and 19 year-olds is that they share characteristics such as entry qualifications and progression behaviour which differentiate them from other age groups. The influence of the school year calendar that remains apparent in entry behaviour and characteristics reinforces the idea that this age group is meaningfully rooted in 'young' experiences. Fortunately this group of 18 and 19 year-old entrants dominate the numbers entering HE under 30 years of age, so that using this age range will capture the majority of HE participation: any participation inequalities found with this group will be of material importance.

# Annex E
## Participation measures

The nature of the participation measure used in this report is largely determined by the definitions of the cohort and entrants covered in Annexes A and C. However there are also some choices in the construction of the participation statistic itself that can affect the reliability and interpretation of the measure. This annex describes the formulation of the YPR measure used in this report and how it differs from some other widely used participation measures.

### E.1 The Young Participation Rate (YPR)

The young participation rate (YPR) used in this report records the young participation of a single school year cohort. This means that a group of children of the same age, defined relative to the country-specific school year, are followed through time, and those that enter HE both at age 18 and, a year later, at age 19 are counted. This is shown in Formula 4 below.

Formula 4 **The Young Participation Rate (YPR)**

$$YPR_y = \frac{ent_{y,18} + ent_{y+1,19}}{schcoh_{y-3}}$$

*where*

$y$ = Year that cohort is 18

$YPR_y$ = Young participation rate for the cohort aged 18 in year y

$ent_{y,18}$ = 18 year old entrants to academic year starting in y

$ent_{y+1,19}$ = 19 year old entrants to academic year starting in y + 1

$schcoh_{y-3}$ = Cohort estimate (age 15) for year y – 3 (that is, aged 18 in year y)

The selection of entrants set out in Annex C ensures that the same individual is not included in both counts. If there are some entrants from the cohort who enter HE aged 17 (this is only significant in Scotland) then they will be counted at age 18 or 19 if they are still in HE at those ages. To avoid the problems of estimating 18 year-olds for small areas directly (explained in Annex A), the cohort estimate of 18 year-olds in year y is the aged small area estimate of those aged 15 at the start of the school year three years earlier.

The entrants for the YPR measures originate from two consecutive academic years which has two important consequences. The first is that the calculation of the participation rate is delayed by a year compared to synthetic cohort methods that use a single year of student records. The second is that the participation rate does not refer to a single academic year but rather to a single cohort so that it is not obvious which year to describe the rate with. Since two-thirds of the young entrants enter at age 18 this report uses the convention of referring to a YPR by the school year where the cohort is aged 18 though it does, of course, include entrants from that and the subsequent academic year. Different definitions (set out in Annex C) of entrants lead to a set of YPR variants, identified through a bracketed suffix as YPR(H), YPR(A), etc.

The advantage of measuring participation for cohorts rather than by year of entry is that artefacts are not introduced into the participation rate from annual changes in cohort size, participation rates or entry age. This is best illustrated by looking at two other participation statistics that are defined by the year of entry: the Age Participation Index (API) and the HE Initial Participation Rate (HEIPR). These statistics have significant differences from the YPR measures used in this report in the definition and methods for counting entrants and population, but this section concentrates on differences in how these two counts are combined to give a participation rate.

## E.2 The Age Participation Index (API)

The GB Age Participation Index (API) takes young entrants to full-time undergraduate courses aged under 21 (on 31 December) from a single academic year of student records. These entrants are then divided by an assumed average cohort size as shown in Formula 5. In this way the API is an example of a synthetic cohort participation measure: it takes entrants from different year of age cohorts to give an estimate of the likely proportion of a single year of age cohort that would have entered HE before age 20. Variants of the API, on slightly different definitions, exist for Scotland[59] and Northern Ireland[60] as well being estimated by groups such as social class[3].

Formula 5 **The Age Participation Index**

$$API_y = 100 \times \frac{ent_{y,<21}}{0.5 \times (pop_{y,18} + pop_{y,19})}$$

*where*

$y$ = Academic year for API

$ent_{y,<21}$ = entrants to academic year starting in y that are aged under 21 on 31 December

$pop_{y,18}$ = 18 year old (31 December) population in y

$pop_{y,19}$ = 19 year old (31 December) population in y

This formulation makes the API particularly sensitive to rapid changes in the population size. If the 18 year-old population is rising then the average population of 18 and 19 year-olds will understate the number of 18 year-olds. As 18 year-olds form more than half of the entrant count, this will act to overstate participation. The opposite effect occurs when the 18 year-old population is falling. Creating an API style statistic using YPR(H) 18 and 19 year-old entrant and cohort estimates shows that the API style statistic for 1997, for example, was 0.3 percentage points higher than the API style statistic for 1996, whereas the participation for the 1997 18 year-old cohort was actually 0.3 percentage points below that of the 1996 18 year-old cohort. Since the annual changes in young participation are often small even these minor differences can significantly affect the perceived trend of young participation.

The main advantage of the API as a participation statistic is that it has a long history (though on changing definitions and data sources) which helps in assessing long-term changes in young participation[61]. However this long history has also led to the accumulation of a set of unusual definitions. For example it includes UK domiciled entrants but uses a GB population estimate, and reduces the contribution from particular types of entrants by fixed factors intended to account for entrants that are not new to HE. These (and other) differences – and the fact that the API is for academic years and the YPR for cohort – make it difficult to compare the two figures. The UK YPR(A) for the 2000 cohort is around 31 per cent compared to APIs of 33 and 35 for 2000-01 and 2001-02 respectively. The nine month greater age range of the API accounts for around 2 percentage points of this difference; the remainder is due to double counting in the API and myriad definitional differences (acting in different directions).

## E.3 The HE Initial Participation Rate (HEIPR)

The HE Initial Participation Rate (HEIPR) is a measure of participation based on entrants aged 17-30 to a particular academic year. It was created from the Initial Entrant Rate (IER) following minor definitional changes after a 2003 review of that statistic[62]. Like the API, the HEIPR is a synthetic cohort measure which uses entrants to the same year from different single year of age cohorts. It differs in that it is not a simple division of entrants by population but rather the summation of age-specific participation rates as shown in Formula 6.

Formula 6 **Initial Participation Rate (HEIPR)**

$$HEIPR_y = \sum_{a=17}^{a=30} \frac{ent_{y,a}}{pop_{y,a}}$$

*where*

$y$ = Academic year for HEIPR

$a$ = Age on 31 August $y$

$ent_{y,a}$ = entrants to $y$ of age $a$

$pop_{y,a}$ = population in $y$ of age $a$

This construction means that the HEIPR is not susceptible to cohort growth effects. However, like the API, it is very sensitive to changes in entry age. In particular if certain entry years have differing attractiveness to entrants – as might happen with the introduction of tuition fees – so that entrants delay or advance their plans to enter in a particular academic year, then a HEIPR style statistic would record a bumpy series of changes in participation even if the total proportion of each cohort entering HE remains constant over the period. A related problem, of the lack of accounting for higher (or lower) levels of past participation for the cohorts included in a particular HEIPR, is discussed in the review of the IER[62].

Despite these problems, the HEIPR does provide a single figure summary of participation over a wide age range which is why it finds use as a national level statistic. However the HEIPR has further serious drawbacks for investigating participation for small areas. As a synthetic measure (that is, it draws entrants from different single year age cohorts) with such a wide age range (14 entry ages compared to two for the YPR) it is not easy to interpret: it is neither the cumulative participation of 30 year-olds for the reference year nor a projection of the likely participation by age 30 of the cohort aged 17 in the reference year. It is even more difficult to interpret a HEIPR style statistic for small areas. This is because the kind of summation of age specific rates used in the HEIPR is only reasonable for a closed system, whereas populations move around for small areas. This can be illustrated by considering an area where there are no 17 year-olds, all 18-20 year-olds are resident HE students (who lived elsewhere prior to HE entry), and all the 21-30 year-olds are graduates (who also lived elsewhere prior to HE entry). In this case the HEIPR small area rate would be zero, despite everyone in the area having participated in HE.

The English HEIPR estimates of 42 per cent and 43 per cent (2000-01 and 2001-02 respectively) are much higher than the roughly comparable English YPR(A) for the 2000 cohort of around 30 per cent. The HEIPR and YPR differ in their entrant, cohort and measure specifications but the majority of this 13 per cent or so difference is due to the wider scope of the HEIPR measure. Approximately 7 percentage points of this difference is from including full-time entrants aged between 20 and 30. Around 5 percentage points of the difference are due to the inclusion of 17-30 year-old entrants to part-time courses.

# Annex F

## Using small areas to measure participation: balancing random variations and homogeneity

Several times in this report reference is made to the tension between using smaller areas to better target participation disadvantage and the proportionally large random fluctuations in the observed participation rates that are associated with very small cohort counts. This annex illustrates the nature of these random fluctuations and how they can be used to investigate the extent that census wards may be considered homogeneous in terms of young participation.

### F.1 Random fluctuations

Suppose a small area is internally uniform and unchanging through time. The children in this ward can be thought of as having – perhaps through the combination of the social and educational environments they experience – an *underlying* propensity to participate of, say, 30 per cent. This can be thought of as each child in the area having an equal and independent[63] chance of participating in HE of 30 per cent, with the small area participation rate for any particular cohort being the summation of the outcomes for individuals. The number of entrants from a cohort in a small area can be modelled as a random variable with a discrete binomial distribution.

Although the underlying propensity to participate in the small area is not changing through time, the observed instance of the area participation rate is constructed from the individual random events and so has an element of randomness to it. For small cohort sizes the random element forms a large proportion. For instance, for an enumeration district with a typical annual cohort of five and an underlying individual participation propensity of 28 per cent, the random fluctuations would be expected to give an observed area participation rate of either zero or over 60 per cent for one cohort in three. This is far too variable for any useful area classification.

For census wards a typical annual cohort size is 50, which reduces the random variation in the observed participation rates compared with enumeration districts. For such a ward with an underlying participation propensity of 28 per cent, measured area rates of 22 per cent or less would be expected one year in five, with a similar frequency expected for measured rates of 34 per cent or more. This remains a substantial degree of random variation, covering a range much larger than any likely short-term change in the underlying participation propensity. This means it is not likely to be possible to distinguish a trend in underlying participation for a single ward from the 'noise' of annual random fluctuations.

The formation of the participation quintiles for group trends and the mapping of local rates in POLAR aim to further reduce the proportion of random variability in the ward participation rates by aggregating a number of cohorts together. The whole-period ward participation quintiles use seven cohorts, giving a typical ward combined cohort size of 350. With this size of cohort a ward with an underlying participation propensity of 28 per cent would give an observed area participation rate of 22 per cent (or less) in less than 1 per cent of cases, with a similarly low proportion of observed rates being 34 per cent or more. Therefore, if the

underlying rate for the ward is not changing much, then the quintile assignment based on the observed whole-period participation rate should be a good guide to the underlying participation nature of the ward. There will be some wards that, due to the remaining random fluctuations, are by chance assigned to a quintile whose range does not encompass their underlying (and unobserved) true participation propensity. However these cases do not introduce any temporal bias into the trend analysis as the assignment is done on the observed whole-period participation rate.

The quintiles used for the trend analysis have cohort sizes of the order of 100,000 for England. With quintile cohorts of this size, if the underlying participation propensity for a quintile was 28 per cent then the observed rates would be expected to fall within the band 27.5 per cent to 28.5 per cent in nearly all (99.9 per cent) of cases. This narrow range of random variability means that, in contrast to the individual ward participation rates, the trends observed for the quintiles can be taken (if the measurement method is accurate) as reflecting some change in the underlying propensity of the aggregated areas to participate, rather than random fluctuations. Of course, the reason for any detected change may be that the degree of disadvantage experienced by the areas is changing, rather than there being a change in the propensity to participate for individuals experiencing a given level of disadvantage.

## F.2 Participation homogeneity of small areas

The high proportion of random fluctuations in the participation rates of very small areas such as enumeration districts, even after aggregating cohorts, means that the cohort size must be increased by using a larger area unit. Offsetting the advantages of the increased cohort size is the problem that as the area unit becomes larger so does the possibility that it will include a mixture of high and low participation sub-areas. This means that although the resulting participation rate may be more precise (in that it has a reduced proportion of random variation), it may well be less valid in that it does not well describe the entire cohort who live in that area if it is heterogeneous in terms of participation.

Participation heterogeneity within a geographical area is potentially problematic for three main reasons:

a. It reduces the participation resolution of quintiles formed on these units. The ratio of participation for the highest and lowest quintiles will be misleadingly low, and trends for the groups of interest may be masked or obscured especially if there is a substantial and changing degree of heterogeneity.

b. It reduces the usefulness of looking at the characteristics of entrants from the quintile groups. If low participation areas contain even a relatively small proportion of high participation sub-areas then a disproportionate number of the *entrants* from these low participation areas can originate from the small proportion of high participation sub-units.

c. It reduces the utility of area groupings for practical purposes such as targeting activities at a local level or resource allocation. For example, if very low

participation *predominantly* occurred in the form of micro-areas in otherwise high participating small areas (rather than extensive areas of very low participation) then using a small area quintile grouping for targeting could miss the majority of very low participation micro-areas.

It is concerns of this type that are probably behind criticisms that describe area based methods of looking at participation inequality as 'blunt' or missing 'pockets of deprivation'. Although these criticisms are most frequently expressed about areas, they apply in one form or another to any grouping. For example, if accurate annual young participation rates could be obtained by social class (which they cannot) then the concern might be that different occupations that make up a particular class could have disparate participation propensities. Similarly, if it were possible to look at young participation by household income bands, then within a particular income band there could be sub-groups that differ a great deal in terms of total material and educational advantage and participation propensity. One of the advantages of using small areas for young participation analysis is that it is possible to make an assessment of the homogeneity of participation within a small area.

## F.3 Investigating ward participation homogeneity with simulations

One way to assess the participation homogeneity of small areas is to look at the pattern of participation rates for micro-area units within the small areas. Using wards and enumeration districts (EDs) as an example, if a ward had an underlying participation rate of 10 per cent and was completely homogeneous then it would be expected that each of the constituent EDs would show a participation rate *consistent* with the ward rate. Even in this completely homogeneous case, it would not be expected that every ED would have the same rate as the ward. This is because of the random fluctuations and integer effects (with small cohorts only a small set of discrete participation rates can be formed, none of which may match the ward rate) from the very small ED cohort sizes. If a ward is internally mixed in terms of participation then distribution of ED participation rates would be expected to be more distant from the ward participation average than in the case where the ward is internally homogeneous in terms of participation.

There are a number of ways to assess this difference in distribution caused by heterogeneity. Methods based on models or tests that measure the overall deviation from the homogeneous case can have the disadvantage that they become arbitrarily sensitive as the number of cohorts (and thus the combined cohort size) increases. This can lead to the highlighting of statistically significant heterogeneity that is not of practical importance, especially between varying levels of high participation within a high participation ward. One solution to this is to use participation quintiles and to consider a ward to be practically mixed if a substantially larger than expected proportion of its constituent EDs have a participation rate that places them into a quintile that is neither the same nor adjacent to the ward participation quintile. The expected proportion of EDs assigned to these non-adjacent quintiles, taking into account random fluctuations and integer effects, can be suggested from simulations[64].

Table 13 **Participation rates of EDs within ward participation quintiles: actual and simulated internal participation homogeneity (three cohorts)**

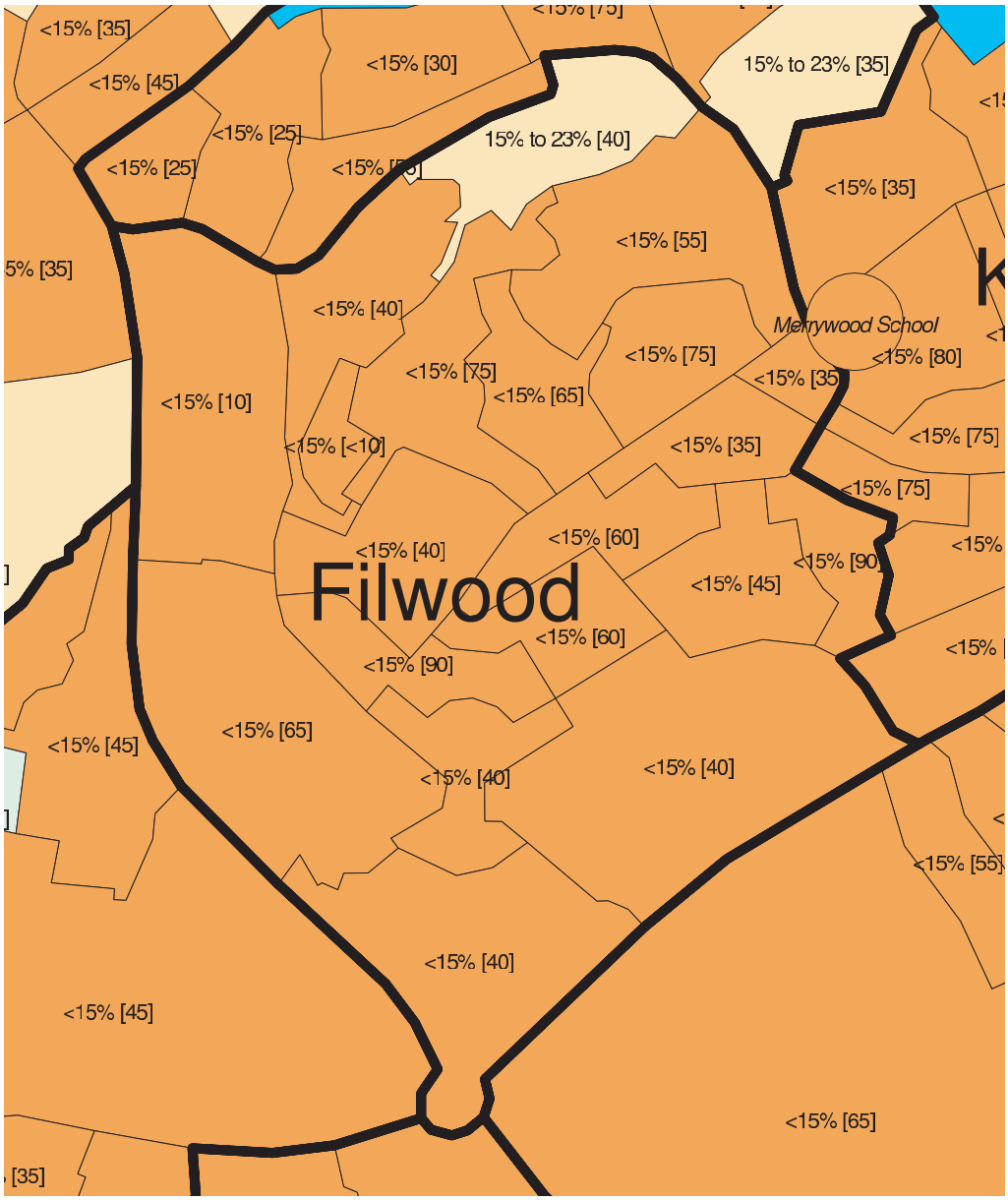
| | | EDs in non-adjacent quintile (% of ward quintile) | | |
|---|---|---|---|---|
| YPR(H) ward quintile | | Actual | Simulated homogenity | Difference |
| 1 | 0%-15% | 12 | 7 | 5 |
| 2 | 15%-23% | 17 | 10 | 7 |
| 3 | 23%-31% | 41 | 23 | 19 |
| 4 | 31%-42% | 23 | 13 | 11 |
| 5 | 42%-100% | 16 | 7 | 8 |

*Note: The ED quintile assignments are based on the shown ward quintile ranges. Since the ED participation distribution is more extreme than the ward distribution the ED cohort is not evenly split across the ward ranges, with the first and fifth ward quintile ranges holding more than 20 per cent of the ED cohort. The participation base for this table is English YPR(H) entrants from the 1998, 1999 and 2000 cohorts. No weighting is applied to entrants or cohorts so that exact binomial simulations can be used. Proportions refer to cohort share rather than ED counts. Simulations take the observed ward rate as the uniform underlying rate.*

Table 13 shows the proportion of the cohort in each ward participation quintile that resides in EDs with a participation rate that places the ED in a ward quintile participation range that is neither the same as nor adjacent to the parent ward quintile. This shows, for example, that if first quintile wards were entirely homogeneous in internal participation propensity then random fluctuations and integer effects would be expected to give around 7 per cent of the cohort residing in non-adjacent participation quintile EDs for this size of cohort. The actual distribution shows that 12 per cent of the cohort live in EDs with participation rates placing them in non-adjacent ward participation quintiles. This suggests that roughly only around 5 per cent of the cohort in first quintile wards live in micro-areas that probably have a substantially different propensity to participate[65]. This is partly an arithmetic consequence of the ward being low participation (since if they were substantial areas of high participation the ward would not be low participation overall). But it is also reflecting a real geography whereby the majority of low participation wards cover fairly uniform large urban areas of low participation, with a typical example shown in Figure 81.

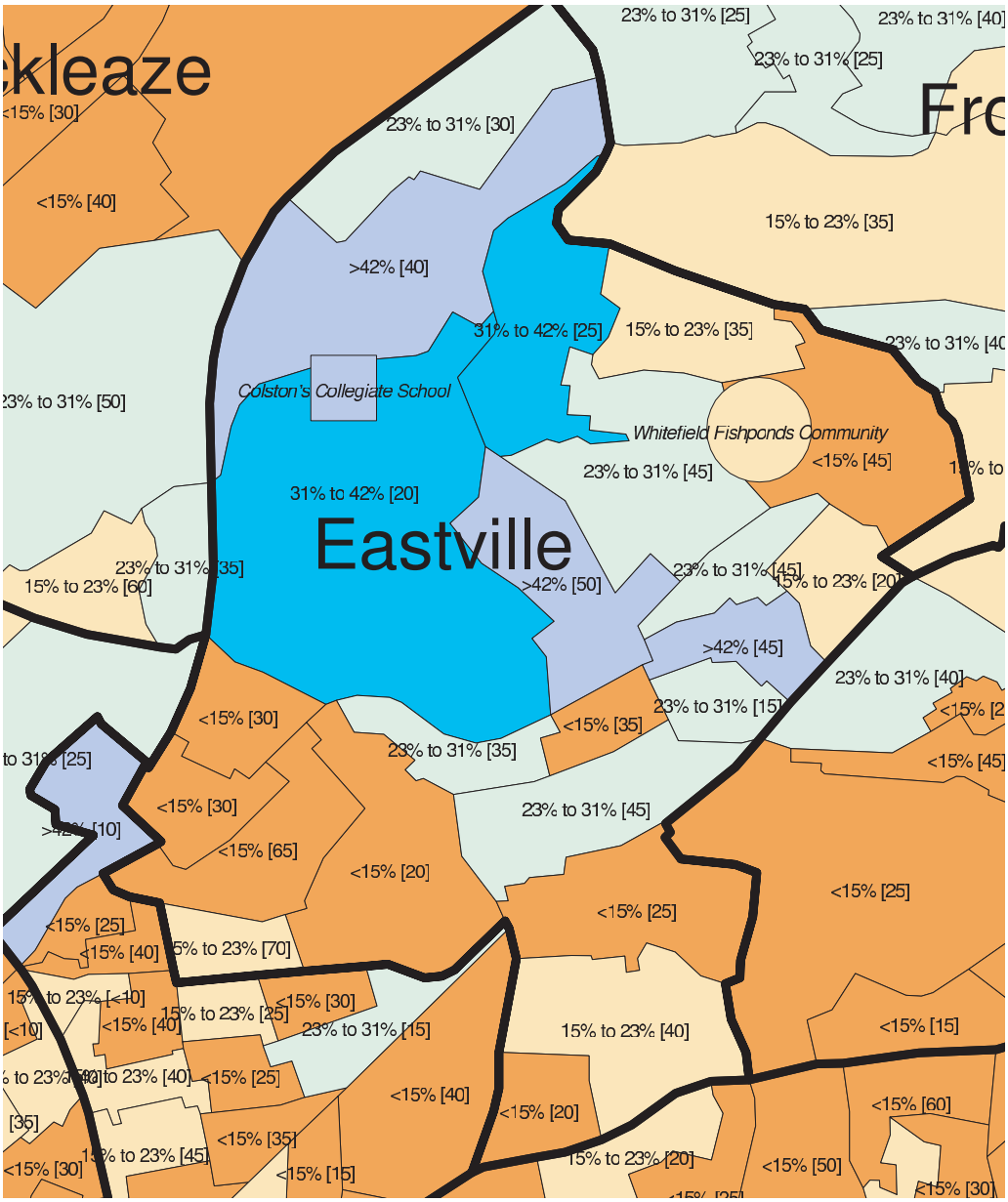
Although the degree of heterogeneity is generally very low for first quintile wards, it is worth noting that the much higher participation of any embedded high participation micro-areas means that they can have a disproportionate presence in the entrants from these wards. For example, although these simulations suggest, for these cohorts, only around 5 per cent of the cohort in first quintile wards are likely to be from micro-areas with a substantially higher underlying participation rate, the higher participation of these areas means that perhaps 12 per cent of the entrants are from these embedded higher participation areas.

Figure 81 **A typically homogeneous low participation ward**




*Note: The heavy lines are ward boundaries, the lighter lines are enumeration district boundaries. For each ED the label shows the banded (English YPR(H) ward quintiles, as in Table 13) participation rate of the ED. The number in square brackets indicates the combined cohort size (rounded to the nearest 5). The participation and cohort size are based on the seven combined YPR(H) cohorts 1994 to 2000. Boundaries derived from data provided with support of ESRC/JISC copyright ED-LINE consortium.*

Figure 82 **An extremely heterogeneous third quintile ward**

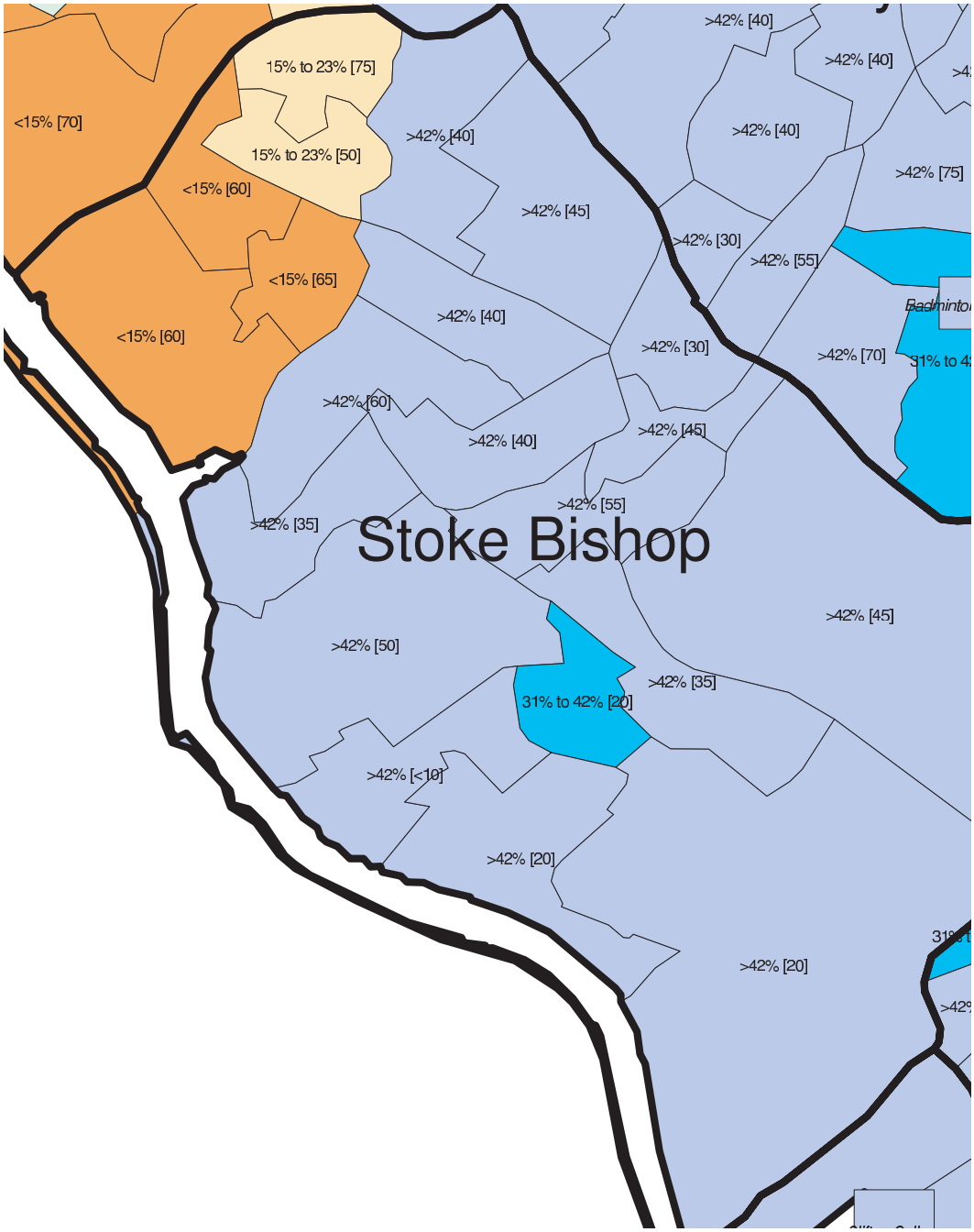



*Note: The heavy lines are ward boundaries, the lighter lines are enumeration district boundaries. For each ED the label shows the banded (English YPR(H) ward quintiles, as in Table 13) participation rate of the ED. The number in square brackets indicates the combined cohort size (rounded to the nearest 5). The participation and cohort size are based on the seven combined YPR(H) cohorts 1994 to 2000. Boundaries derived from data provided with support of ESRC/JISC copyright ED-LINE consortium.*

With around average participation rates, the wards in the third quintile have the highest potential to show internal heterogeneity. The relatively narrow range of participation rates that forms the band for the third quintile leads to the simulations suggesting that, even if these wards were completely homogeneous, random and integer effects would give around 23 per cent of the cohort living in EDs that had observed rates in a non-adjacent participation quintile (the first and fifth quintiles in this case). The actual results find 41 per cent of the cohort living in non-adjacent participation quintile EDs, suggesting that around 19 per cent, 1 in 5, of the cohort in third quintile wards live in EDs that probably have a very different participation propensity to the ward average.

An example of an extremely heterogeneous third quintile ward is shown in Figure 82. Here the geographical pattern of the ED rates suggests that this ward has a true sub-area of high participation in its north-east quadrant and another true sub-area of low participation in the south-east corner. However, since a relatively large proportion of EDs in an average participation ward would be expected to fall into extreme quintiles by chance, it is rarely possible to be sure that any particular ED has a underlying propensity to participate that is genuinely different from the ward quintile.

Figure 83 **A high participation ward containing a clipped area from a neighbouring low participation ward**




*Note: The heavy lines are ward boundaries, the lighter lines are enumeration district boundaries. For each ED the label shows the banded (English YPR(H) ward quintiles, as in Table 13) participation rate of the ED. The number in square brackets indicates the combined cohort size (rounded to the nearest 5). The participation and cohort size are based on the seven combined YPR(H) cohorts 1994 to 2000. Boundaries derived from data provided with support of ESRC/JISC copyright ED-LINE consortium.*

For the fifth quintile (highest participating) wards the simulations suggest that complete internal participation homogeneity would lead to around 7 per cent of the cohort being in EDs assigned to a non-adjacent ward participation quintile by chance. The actual results record 16 per cent of the cohort in such EDs, suggesting around 8 per cent (after rounding), 1 in 12, of the cohort in fifth quintile wards are poorly described by the ward rate and are living in micro-areas more similar to average or below average participation wards.

The discussion of local patterns of participation noted that it is not unusual for high and low participation wards to be neighbours. Although the ward boundaries usually delineate these differing areas very well, there are a number of relatively rare occasions where the ward boundary does not match the social geography. This can lead to the inclusion in high participation wards of micro-areas from adjoining low participation neighbourhoods, as illustrated in the example in Figure 83. In this extreme case a ward with mostly very high participation micro-areas has included from an adjoining first quintile ward a sub-area of very low participation in its north-west corner. The two sub-areas are separated by a watercourse with a near tenfold difference in observed young participation rates across this natural boundary.

## F.4 Summary: acceptable homogeneity

If the examples of heterogeneous wards in Figures 82 and 83 were typical then the usefulness of wards as an area unit for determining participation inequalities would be much reduced. However, these are exceptions: generally, the participation of the observable micro-areas within wards is consistent with the overall ward participation quintile assignment. In particular, low participation wards are overwhelmingly formed from low participation micro-areas. Low participation micro-areas are sometimes concealed within high participation wards, but the simulations suggest that this happens only very rarely. The overwhelming majority of low participation propensity micro-areas are found within below average participation wards.

These findings are somewhat contrary to suggestions from some work[66] that wards often conceal wide variations in measures of disadvantage. One reason for this is that such investigations often proceed by applying a ward level deprivation index to ED level data and then looking at the distribution of the EDs across quintiles of the ward level indicator. Sometimes this approach does not consider the random variation introduced to the measure by the very small ED counts (especially when using the 10 per cent census sample data) or the census data modification (on 100 per cent data). As shown in Table 13, these types of effects can lead to large proportions of EDs not being in the parent ward quintile even under the assumption of complete ward homogeneity.

It is also quite possible that wards may be more homogeneous in terms of young participation in HE than other social or economic measures. The participation measure only relates to a small section of the population: families with children of late secondary school age. Suppose that a ward is very socially heterogeneous having, for example, average income families, affluent childless couple households and poor pensioners; perhaps living in very different types of accommodation in different parts of the ward. In this case the YPR measures would correctly classify such a ward as homogeneous in young participation as it is blind to people not in the first group; whereas other whole population measures of, say income, would correctly record the ward as heterogeneous. Secondly it is also possible that there could be some factors (such as sharing a school or network of friends) that may act to reduce the difference in participation outcomes for children from different backgrounds that live in the same neighbourhood.

Nevertheless, the simulations used in this annex only provide an overall assessment of homogeneity. It is possible that in certain types of area the ward heterogeneity may be greater. For example, the small scale of rural settlements – which may harbour varied housing types – means that they are often wholly contained within a single ward. Another example is where small local authority estates are interspersed within prosperous central London boroughs. Unfortunately, in both these cases the cohort count per ED can be very small, making the assessment of heterogeneity difficult. As more child benefit denominated cohorts become available, a closer examination of these scenarios should be possible.

# Annex G

## Changes in grants, loans, fees and young participation

The main results indicate that young participation rates both overall, and between groups categorised by the areas in which they live, has remained generally steady between the 1994 and 2000 cohorts. The small changes that are observed appear to be explicable in terms of the changing size of the cohorts and the rate of improvement in GCSE results. In particular there is no evidence of changes to entry year in an effort to avoid tuition fees, and most area groupings see the more disadvantaged groups recording the highest proportional increase in participation across the period.

### G.1 Students' attitudes towards debt and entry to HE

These results have to be set alongside the literature which seems to show that financial concerns in general, and fear of debt in particular, are deterring students from less affluent backgrounds from entering higher education. For example, a review[67] of the literature carried out for HEFCE, while accepting that the evidence was not conclusive, did report that a range of research projects had 'all identified concerns about the financial costs and in particular about the potential size of loan debt incurred as major factors in the decisions about entry by qualified students from the lowest socio-economic groups'[68].

Since this review was undertaken, Universities UK has published a report[69] of a study based on nearly 2,000 responses from students from 82 schools and colleges. The results seem to confirm the conclusions from earlier smaller scale studies. For example, it was reported that 'the majority of non-entrants indicated that not wanting to build up debt was a key factor behind their decision not to go to university'. The study also concluded that debt aversion was most likely to be expressed by groups that are the focus of widening participation policies such as those from lower social classes.

Another recent publication reported an exploration of the factors that influence entry to higher education using the Youth Cohort Study[70] (YCS). It was reported that, after trying to allow for other factors including prior achievement, housing tenure, which was being used as a proxy for income, had an association with HE entry. Assumed average lower income equated to a lower chance of entering HE independent of other factors. It does not directly follow from this finding that an increased private contribution from students from lower income families would decrease their propensity to enter HE, but it does make it more likely. A plausible explanation for the interpreted 'low income' effect is one of 'perceived affordability'. Increasing the private contribution might reduce the perceived affordability.

Between 1994-95 and 2000-01, maintenance grants were abolished, fees introduced, and levels of student debt increased. Given the messages from the literature, an obvious question is why no effects from these factors were seen in the participation results. Of course, it is not known what the demand for HE would have been had the student support arrangements remained unchanged, so it is not possible to be certain what the real effect has been. But it seems unlikely that, if 'debt averseness' were a significant factor, we should see no effects in the year-on-year changes in participation.

In exploring this further, the changes in student support arrangements are more fully described, and then the evidence for the deterrent effect of these changes is examined.

## G.2 Changes in the private contribution to HE in England

The changes in student support over the period covered by this report are complex. Changes for students from different income groups have been different, and interpreting these changes depends on whether the basic 'unit' is taken to be the family, or the individual student. Assessing the impact of changes on students rather than family units is very difficult. For example, changes to the private contribution of the family unit can have unexpected effects on the contribution of the student, particularly so in cases where the parents are not making their assessed contribution. The scale of such shortfalls is significant and changing[71], and is likely to be influenced both by the particular student support arrangements and wider social, cultural and economic changes. There is also some evidence from the United States that different elements of the private contribution are viewed differently, and that changes in the different elements can have different effects on participation[72]. We do not attempt to describe these complexities in this summary. The changes in private contribution are between the public contribution and the private contribution by the family unit, and all elements of the private contribution are taken to be equivalent.

Up to 1989-90 students' living costs were supported through a means-tested grant, and parents were expected to make a contribution sufficient to bring the student's allowance at least up to the maximum grant available. Over the decades the real value of maintenance grants had eroded, and the need to increase students' income was evident. In 1990-91 the grant was increased in line with inflation and, in addition, a subsidised loan was introduced. Eligibility for the loan was independent of parental income, it attracted a zero real rate of interest and repayments only became due once the student earned 85 per cent of national average earnings. These loans increased the maximum available public-funded income for students by 14 per cent. However, subsequent increases in loans were balanced by real decreases in grants, so that the overall maximum support provided by loans and grants remained roughly constant in real terms.

By 1994-95 the maximum loan had reached £1,150. For the student from a family on low incomes, this represented a worsening situation compared to 1990-91, since nearly a third of the income from public funds was by then provided by the loan rather than a grant. For the student 'family unit' on high incomes, there was a net gain, since there was no entitlement to a maintenance grant, yet the loan, which was subsidised, was not means tested. The position of the student from a high income background, rather than the family unit, depended on whether the loan had replaced or been added to the parental contribution that would have been made if the loan had not been provided. In 1994-95, when entrants from the first cohort covered in this report were starting HE, financing through loans was well established with a take-up of 55 per cent.

The previous trend of incremental increases in loans for all eligible students and decreases in grant continues after 1994-95 through to the elimination of grants in 1999-2000. In addition, the 1998 Teaching and Higher Education Act brought about a number of other changes. The main changes to support were as follows:

- means-tested contribution to tuition fees (introduced in 1998-99)
- means testing of part of the loan entitlement for maintenance (introduced 1999-2000)
- starting salary for loan repayment reduced to £10,000 pa, but repayment levels graduated and dependent on income level (introduced 1998-99)
- increases in the funding available for discretionary payments and for special student groups.

The non-discretionary standard grants, loans and fees payable over the whole period are summarised in Table 14.

Table 14 **Grants, loans and fees 1994-95 to 2000-01 (1998-99 prices)**

| | Maximum grant | Income-independent loan | Means tested loan | Maximum fee payable |
|---|---|---|---|---|
| 1994-95 | £2,280 | £1,290 | £0 | £0 |
| 1995-96 | £2,040 | £1,500 | £0 | £0 |
| 1996-97 | £1,800 | £1,730 | £0 | £0 |
| 1997-98 | £1,800 | £1,730 | £0 | £0 |
| 1998-99 | £810 | £2,740 | £0 | £1,000 |
| 1999-00 | £0 | £2,670 | £890 | £1,000 |
| 2000-01 | £0 | £2,680 | £890 | £1,010 |

*Notes: Grants shown are for students studying away from home outside London, not in their final year. Values to nearest £10. Compiled from DfEE Statistical First Release SFR37/1999 (30/11/1999) Table 1, National Statistics (DfES) First Release SFR18/2001 (30/4/2001) Table 1 and National Statistics (DfES) First Release SFR08/2002 (30/4/2002) Table 1.*

It is difficult to assess the value to students and their parents of the increased provision of loans. In Table 15 below two alternatives are given. The first is where loans are treated just like any other income, ignoring the fact that repayments will need to be made. The second is where loans are valued at the approximate value of the subsidy required to make the loan at zero real interest rates. The calculations include grant plus maximum loan, without the fee, which would apply to students from a low income background; and the income-independent loan minus the full fee, which would apply to students from high incomes.

Table 15 **Net value of combinations of grants, loans and fees under different circumstances and different assumptions (1998-99 prices)**

| | Loan valued at full amount – ignoring repayments | | Loan valued at approximate cost of the loan – 30 per cent of full amount | |
|---|---|---|---|---|
| | Low income<br><br>Maximum grant plus maximum loan | High income<br><br>Income-independent loan minus maximum fee | Low income<br><br>Maximum grant plus maximum loan 'value' | High income<br><br>Income-independent loan 'value' minus maximum fee |
| **1994-95** | £3,570 | £1,290 | £2,670 | £390 |
| **1995-96** | £3,550 | £1,500 | £2,490 | £450 |
| **1996-97** | £3,530 | £1,730 | £2,320 | £520 |
| **1997-98** | £3,530 | £1,730 | £2,320 | £520 |
| **1998-99** | £3,550 | £1,740 | £1,630 | -£180 |
| **1999-00** | £3,560 | £1,670 | £1,070 | -£200 |
| **2000-01** | £3,570 | £1,670 | £1,070 | -£200 |

*Notes: The residual income defining low and high income has remained at about £17,000 and £34-£36,000 respectively at 1998-99 prices for families with one child in higher education. For families with more children in higher education the defining income levels will be higher. Compiled from the sources listed for Table 14 together with the DfEE publications 'Student Grants and Loans – A Brief Guide for Higher Education Students' (1994-95 to 1997-98 editions) and 'Financial Support for Students' (1998-99 to 2000-01 editions).*

We can see that, under both loan value assumptions, the change in the net private contribution from the low income family unit is less favourable than that from the high income family unit. This is also true if we discount the loans and assume they have no value, since the reduction in grant has been greater than the size of the fee payable. This is summarised in Table 16.

Table 16 **Increase (decrease) in net private contribution for the 'family unit' of students between 1994-95 and 2000-01 (1998-99 prices)**

| Loan assumption | Low income families | High income families |
|---|---|---|
| Discount (ignore) loans – 'debt averse' | £2,280 | £1,010 |
| Value loans at subsidy cost – 'rational' | £1,600 | £590 |
| Treat loans simply as income – 'debt tolerant' | £0 | (£380) |

Under any reasonable assumption, the change in the net private contribution from low income families was less favourable than that from high income families, so, even if the 'elasticity of demand' were the same for the two groups, we would expect any negative impact of the changes to be greater for the low income group.

Over the period, the take-up and average size of government loans has generally increased. This is shown in Table 17.

Table 17 **Take-up of loans (1998-99 prices)**

| | Proportion of students taking out loans | Average loan |
|---|---|---|
| 1994-95 | 55% | £1,200 |
| 1995-96 | 59% | £1,400 |
| 1996-97 | 62% | £1,600 |
| 1997-98 | 64% | £1,600 |
| *1998-99* | *69%* | *£2,600* |
| *1999-00* | *76%* | *£3,100* |
| *2000-01* | *81%* | *£3,000* |

*Notes: Values to nearest £100. Values refer to all eligible students in the UK. Figures for 1998-99 onwards refer to students taking out the new loans. Compiled from DfES 'Statistics of Education: Student Support Volumes' (1994-95 to 1997-98 editions) and National Statistics (DfES) First Release SFR29/2002.*

The evidence from detailed sample surveys underpins the trends suggested by these administrative statistics. We can get an approximate estimate of the impact on the cohorts in our time series by looking at the average debt of students on completing their studies in 1998-99 (typically those starting around the same time as the 1994 and 1995 cohorts) and 2002-03 (typically those starting around the same time as the 1998 and 1999 cohorts). Over this period the leaving debt increased by 144 per cent in real terms to reach around £8,700 in 2002-03[73]. Further, the surveys show that those from lower income families are more likely to have debts[73].

## G.3 The introduction of fees and the proportion of students taking a 'gap' year

Students who gained a place in 1997 but deferred entry until 1998 did not have to pay a fee, so there was no financial penalty for taking a gap year in this way. However not all students who entered at 19 made such arrangements and some might have been expected to modify their entry year to avoid paying the fee. However no significant change in the proportion of students entering at 19 for the 1997 cohort was found (Figure 8).

The API participation statistic shows an apparent dip for 1998-99 and 1999-2000 and it has been suggested that this may be due to the introduction of fees and the replacement of grants by loans. However, although there was a fall in the participation of the 1998 cohort this is largely explicable in terms of the changing cohort size and pace of GCSE examination improvement (see Figure 7). In addition over this period the API statistic is being distorted by rapid changes in the size of the 18 year-old cohort which exaggerates some of the participation trends (see Annex E).

## G.4 Possible explanations for the apparent lack of impact on demand for higher education

Over the period 1994-95 to 2000-01 the private contribution to higher education increased differentially. Students from lower income families have seen bigger increases in the private contribution than those from high income families. Furthermore, they are more concerned about financial issues and tend to be more debt averse, and yet to borrow more[73], despite working longer during term time[74]. Finally, young people from low income backgrounds appear to be less likely to enter HE, even after taking into account prior educational achievement and other factors[70].

We cannot estimate the size of sub-populations by family income, and therefore cannot make an exact comparison between family income and changes in participation rates. However, as we have seen, the various classifications based on where young people live enable us to define populations with very different income distributions. For example, using the classification by ward participation quintiles, we see a two-fold ratio in the numbers of students whose parents pay the entire fee between the highest and lowest quintiles (see Table 2). The income ratio between

the populations in these quintiles will almost certainly be greater. If the differing increases in private contribution had differentially affected participation rates, the area-based measures should have detected these differences. A number of possible explanations for why the participation trends in this report do not appear to fit the expected behaviour of young people from advantaged and disadvantaged areas are discussed below.

### What would have happened if there had been no change to the private contribution?

This question cannot be answered with certainty, given that there is nothing equivalent to an experimental control. It would be possible, in principle, to investigate specific scenarios. For example, it could be that the effect of a decrease in demand for HE from students from lower income families, due to reduced support, is balanced by an increase in the propensity to enter, due to a differential improvement in their pre-HE achievement. The Youth Cohort Surveys enable participation rates conditional on pre-HE achievement to be determined though, for reasons given below, we would not recommend trying to use this source for such analysis. In the longer term, it should be possible, by using the new individualised pupil data sets, to determine participation rates by the area-based groups for given pre-HE educational levels.

Though such analysis would further our understanding, it would not completely overcome the difficulties created by the lack of a control for comparison. It may be that it is the strength of the desire to go into higher education that leads to a commitment to study which in turn determines the levels of prior attainment.

### Imperfect knowledge and delayed effects

Many students set off on the path to higher education at least three years before they enter[75], and their knowledge about the costs involved is far from perfect[67]. Negative experiences, for example the student who builds up large debts and then drops out, may take some years to make an impact on the decisions of later cohorts.

However, given that student debt has been an issue, widely reported and discussed since the first introduction of loans in 1990-91, and given the evidence that prospective students, especially from low income families, are concerned about financial issues, we would have expected the changes to have had some impact over the cohorts investigated.

### Confounding debt averseness, prior academic attainment and propensity to enter HE

Students from lower social classes are more likely to have negative views about debt[69], and have lower participation rates, but we cannot conclude that these are connected. Other categories, for example women, are also relatively more debt averse, and yet the gap between the participation rates for women and men has increased during this period of increasing student debt.

Reported intentions are not always an accurate indication of actual behaviour. Further, given that the decision whether to go into HE will involve a number of factors, the reason given may in part reflect what the respondent feels most happy to report, or believes is the answer expected. Even if we assume that reported decisions to enter HE are followed by actual entry, and that the reported reasons for not going into HE are the actual factors determining behaviour, the interpretation of survey results is still far from straightforward. This is because there are a number of other factors, all of which are associated with a propensity to enter HE.

The level of prior academic attainment is strongly associated with entry to HE. The difficulty in interpreting a univariate analysis is that debt averseness and prior academic achievement are associated, so disadvantaged low income students will typically have lower prior academic achievement as well as greater concerns about debt than students from high income families. If the prior academic achievement is not allowed for, or not fully allowed for, then debt averseness may act as a proxy for the unaccounted for academic achievement. This would result in an apparent association between debt averseness and entry to HE.

In the study into attitudes to debt, a measure of debt tolerance was found to be positively associated with a decision to enter higher education. The analysis controlled for a range of factors but not, critically, the expected or actual prior academic achievement.

Since the Universities UK report was published, further analysis[76] has been carried out. This further study separates two aspects of the general 'debt tolerance' factor of the first study into 'debt aversion' and 'the expected cost/benefit of going to university'; and, crucially, the expected prior academic achievement was controlled for.

For A-level students it was shown that 'neither debt aversion nor cost/benefit balance' were significant and it was concluded that for these students debt aversion was not important. These students may be concerned about finances, and wish if at all possible to avoid or minimise debts, but their concerns do not seem to deter them from entering higher education.

The authors also analysed the responses for all the students in their sample, where they did find an association between going into higher education and debt aversion, and concluded that 'debt aversion deters poorer students from entering higher education'. The authors suggest that the A-level analysis may be anomalous due to a low proportion of students from low income groups. However, the comments made on their original study also apply to this latest analysis of the non-A-level students, who are simply categorised into 'AS' and 'other'. For these non-A-level students there were no measures of their relative academic achievements, even though the variation within these groups is likely to be as least as great as for A-level students. For example, if we take the number of A* to C GCSE passes as our measure, we find that GNVQ students vary more than A-level students[77]. Whatever the explanation for their analysis including non-A-level students, the analysis of the A-level students is the most relevant to the interpretation of our participation monitoring, since 87 per cent (Table 2) of the English domiciled young entrants included in the YPR(H) measures presented A-levels as their highest qualification on entry to HE.

### Difficulties with longitudinal sample studies

The 'Econometric analysis of the demand for higher education' study[70] used data from the Youth Cohort Study (a longitudinal sample data set) and showed that even after prior educational achievement and other factors had been allowed for, students from low income backgrounds (as identified by housing tenure) were less likely to enter HE. This does not mean that increasing the private contribution for these students, relative to students from higher income backgrounds, would necessarily lead to a relative reduction in demand, but it does make it more likely.

However, we should not necessarily accept such results at face value. This study used the first three sweeps and therefore only includes entry at 18, which, as we have seen, gives only a partial picture. This is likely to be the main reason why the study fails to identify London as a uniquely high participation region within England. Further, the effects of sampling and response biases may be more pervasive than is sometimes appreciated. The entry rate at 18 is estimated to be 37 per cent compared to 19 per cent found for 1999 in this study. They also found 'no significant difference' in the participation rates for men and women, whereas this study showed that the entry rate at 18 was 3.6 percentage points (over 20 per cent proportionally) higher for women than men. This does not mean that the identified association with housing tenure is incorrect, but it does suggest that we should be cautious in our use of these results.

## G.5 Changes in the private contribution to HE in Scotland

The summaries of the private contribution outlined in Tables 1 to 4 above refer to students in England and Wales. Prior to 1984-85 student support arrangements were standard throughout the UK. In 1984 the then Department for Education and Science (DES) decided that English students should no longer be eligible to claim course-related travel expenses, and in compensation they received a one-off additional increase to their grants. However, the Scottish Education Minister decided that Scottish students should continue to be eligible to receive travel expenses, so Scottish students did not get the special increase and only received the normal inflation-linked rise. The differences were not large, and so up to 1999-2000 the grants, loans and fees payable for students in Scotland were very similar to those for students in England and Wales, so that the value of the total package including travel expenses was broadly equivalent.

However, student tuition fees were one of the first issues to be considered by the newly formed Scottish Parliament in June 1999. The 'Cubie Inquiry' was set up to look into the issue of fees and student support and student contributions more widely. This inquiry reported on 21 December 1999 and the findings and recommendations were debated by the Scottish Parliament on 26 January 2000. During this period these developments were widely reported, and there was an expectation that tuition fees would be abolished.

The Scottish Executive decided that, from 2000-01, Scottish students attending institutions in Scotland (around 92 per cent of Scottish YPR(H) entrants, higher

again for YPR(A) entrants) would not have to make a contribution to the fee, independent of family income. The income-independent loan entitlement was reduced, and the means-tested loan increased, by an amount equivalent to the fee. A summary of the grants, loans and fees for Scottish students between 1994-95 and 2000-01 is shown in Table 18 below.

Table 18 **Grants, loans and fees 1994-95 to 2000-01 (1998-99 values) – Scottish students at Scottish institutions**

| | Maximum grant | Income-independent loan | Means-tested loan | Maximum fee payable |
|---|---|---|---|---|
| 1994-95 | £2,210 | £1,290 | £0 | £0 |
| 1995-96 | £1,970 | £1,500 | £0 | £0 |
| 1996-97 | £1,730 | £1,730 | £0 | £0 |
| 1997-98 | £1,730 | £1,730 | £0 | £0 |
| 1998-99 | £740 | £2,740 | £0 | £1,000 |
| 1999-00 | £0 | £2,670 | £890 | £1,000 |
| 2000-01 | £0 | £1,670 | £1,900 | £0 |

*Notes: Values to nearest £10. Cash values provided by the Student Support Agency for Scotland. The adjustment to give 1998-99 values is calculated using the deflators used in the DfES publications. Grants shown are for Scottish students studying away from home at an institution in Scotland, not in their final year.*

Further changes, which benefited students from very low income families, were introduced from the following year, 2001-02. For those students whose parental annual income was below £10,000, a bursary, equivalent to a grant, of £2,000 per annum was available; and for students whose parental annual income was below £15,000 there was an additional loan entitlement of £500. The entitlement to a loan was reduced for those on very high incomes. There was also a requirement for students to make a payment of £2,000 on graduating to a 'graduate endowment fund'. Income-contingent loans were available so that graduates could make their contribution to the graduate endowment funds through future earnings.

The impact of the full set of changes arising out of the Cubie Inquiry introduced in 2001-02 will only be known when data for further years is available. Therefore the question of what distinctly Scottish participation effects would be likely if students acted to reduce their and their families' private contribution under these arrangements is not discussed here.

The private contribution for different groups of Scottish students was very similar to students from the rest of the UK from 1994-95 through to 1999-2000. Confirmation of the removal of fee payment in 2000-01 came too late for students to postpone entry from 1999-2000, and even if they guessed at the eventual outcome early in the Cubie Inquiry, it would still be very late in the application

process. Therefore participation effects relating to different arrangements in Scotland would not be expected in the period covered by this report and the participation results show similar patterns for Scotland and England in most respects.

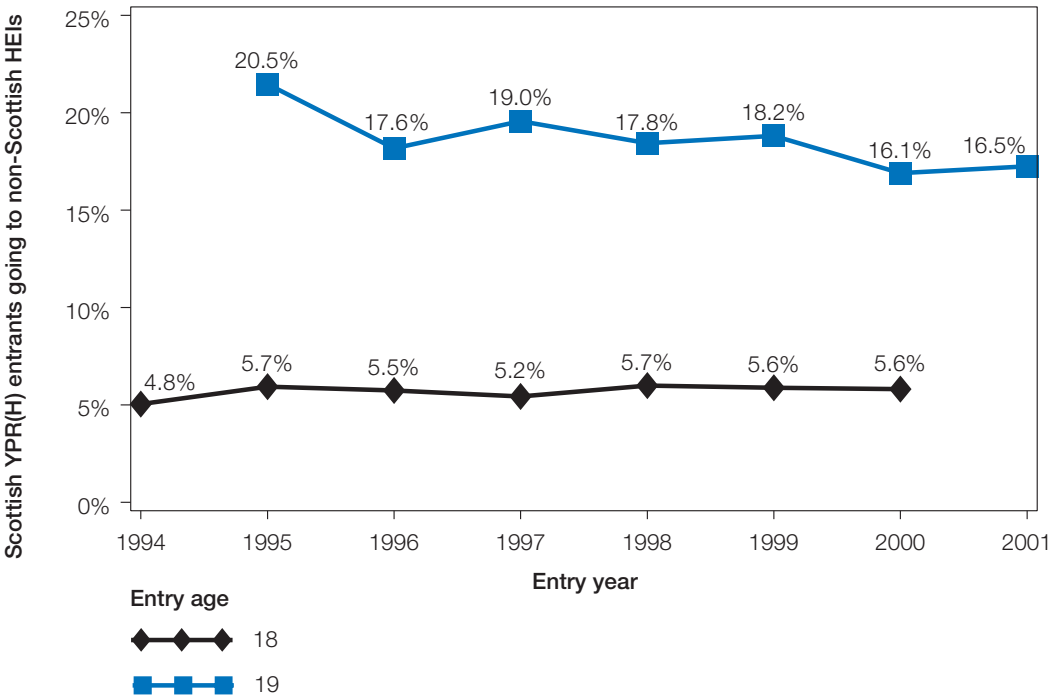
## G.6 The decision to study in Scotland

Entrants in 2000-01 from Scottish high income families were in a particularly advantageous position compared to similar entrants in the previous and later years. They also had a clearer and stronger incentive to study in Scotland than other cohorts. They were not required to pay a fee throughout their course (so long as they studied in Scotland) nor were they required to make a contribution to the endowment fund on graduating. They would not be eligible for the bursaries introduced in 2001-02, but, given that these were means tested, they would not be entitled to this support in any case. The announcement that fees would not be payable for entry to Scottish institutions in 2000-01 was made in January 2000, in time for students choosing between offers from institutions in Scotland and elsewhere in the UK to take the new arrangements into account.

In both England and Scotland the entrants to HE courses in FEIs are almost entirely from the country of the institution. For entrants to HE courses in HEIs (the entrants for the YPR(H) measure) there is a higher degree of migration. Typically 6 per cent of English YPR(H) entrants study outside of their home country compared to 8 per cent of Scottish YPR(H) entrants and much higher 50 per cent of Welsh YPR(H) entrants. The Scottish YPR(H) entrants who choose to study outside Scotland, numbering around 1,200 per cohort, can be used as a limited test to investigate if entrants changed their behaviour to avoid paying a tuition fee.

Just under half of the Scottish YPR(H) entrants studying outside Scotland paid the full fee in 1999-2000, and a large proportion of the remainder would be expected to pay part of the fee. The equivalent entrants in 2000-01 had an extra financial incentive to study in Scotland (that is, avoiding a tuition fee) of up to around £3,000 for a three-year course. Figure 84 shows the proportion of Scottish YPR(H) entrants going to HEIs outside Scotland by entry age and entry year. Around 800 Scottish YPR(H) entrants enter UK institutions outside Scotland at (Scottish school-aligned) age 18, with a further 400 entering at age 19. The proportion of entrants aged 19 going to non-Scottish UK HEIs appears to show a small decline over the period, whereas the proportion of 18 year-olds going to non-Scottish UK HEIs remained steady. In particular there are no significant perturbations to these trends for the entry year 2000-01, where Scottish entrants could avoid fees by studying in Scotland. Although this is a limited test (the numbers are small and not all would be eligible to pay the fee in any case) it does suggest that even the decision about where to study is relatively insensitive to the fee contributions as introduced in 1998-99.

Figure 84 **The proportion of Scottish YPR(H) entrants that enter institutions outside Scotland by entry year and entry age**




*Note: The horizontal axis used here is the entry year rather than the year when the cohort is aged 18 that is usually used. This is because the effect being looked for was specific to entry in a particular year rather than from a particular cohort.*

## G.7 Student support, fees and young participation: conclusions

Though it is possible that the removal of grants and the introduction of fees has had an impact on the young participation rates which has been disguised by other changes, this seems unlikely. The decisions of Scottish students about whether to study in Scotland do not seem to have been significantly influenced by the selective removal of the means-tested fee, and English entrants did not make any substantial changes to their pattern of entry at ages 18 and 19 to avoid the introduction of the fee. It seems that even the decision as to where or when to study, as well as whether to study, is unaffected for those entering immediately after changes to the costs of HE to students and their families.

The evidence from survey-based studies suggested that potential entrants, especially from low income families, were debt averse and that this reduced the likelihood of them entering HE. However, citing financial reasons may be a convenient and readily available explanation for young people who have other reasons to be diffident about applying to HE; and, at least for A-level entrants, debt averseness does not seem to be important once other factors have been taken into account. The debt tolerant, rather than debt averse, behaviour of students is exemplified by an increase in average student expenditure supported, to a large extent, by increasing debts.

We need to be cautious in interpreting these findings and extrapolating them to other future changes. The decisions to aim for higher education are made some years before application, and it is possible that the effects of changing the private contribution are diffuse and delayed so as to be impossible to detect without a control. The changes in the private contribution over the period were small compared to the total costs of HE entry, including lost earnings, even under the 'debt averse' viewpoint. It is possible that financial changes that are larger or different in nature could have a significant effect on behaviour, and that the behaviour of potential entrants may be determined by changes in the behaviour of parents which are difficult to predict.

# Annex H
# POLAR

The wide distribution of 1991 Census ward participation rates was shown (Figure 22) in the national results section, and the suitability of wards for examining patterns of local participation explained. The participation homogeneity of wards was investigated in Annex F, where they were found to be acceptably homogeneous for participation measurement. The large number of wards means it is not feasible to map all the local patterns of young participation in a report such as this. However, it is possible to present such maps on a computer, which has several advantages: maps can accessed via the internet and in a format that allows some basic functions, such as zooming in on areas and searching for place names, without the need for specialised software. POLAR (an acronym of Participation Of Local AReas, www.hefce.ac.uk/polar) is such a system and was developed from early results of the work in this report. This annex describes the aims and contents of POLAR.

## POLAR background

POLAR was developed by HEFCE from early results of the work in this report. It was made available in 2002 (through a user account system) on the HEFCE web-site to people involved in the planning and execution of schemes relating to young participation in higher education. At this time significant sums of public money were being, or planned to be, spent on participation-related projects, yet there was a conspicuous absence of reliable data on young participation rates, especially for areas smaller than regions. The early release of these provisional local participation rates through POLAR was an effort to make a set of reliable and nationally consistent estimates of young participation available to those who needed them to target their activities.

The resources available through POLAR have been widely used by those working on young participation projects, and have also been used in some resource allocations for widening participation activities[78]. Comments from users have suggested that the POLAR results have been helpful in their work and are consistent with local knowledge of deprived or assumed low participation areas. With the results verified and the issues relating to measuring young participation set out in this report, access to the POLAR resource has been made public to supplement this report.

## POLAR content

POLAR provides maps and tables of young participation rates for a series of geographical units ranging in size from regions to wards. The POLAR maps are choropleths, showing the participation of each area by a colour indicating to which participation quintile (cohort weighted and specific to that geographical unit) it belongs. The maps take two forms: conventional geographical maps (as in Figure 24) and cohort scaled cartograms (such as Figure 21). At the expense of some geographical readability, the cartogram presentation can provide a fairer impression of the participation profile of an area since the visual impact of each ward is related to the size of its cohort rather than its surface area. This is particularly important for young participation as low participation wards are often geographically small but populous, whereas the opposite is the case for high participation wards.

For the larger geographies the POLAR tables provide participation rate and cohort estimates. For the ward-level tables the participation rates are recorded only as quintiles. The main reason for this is that with only three cohorts contributing to the ward participation rate the expected random variability is substantial (see Annex F). Thus finer divisions than quintiles would draw attention more to random 'noise' than to real differences in participation propensity.

### POLAR measures

POLAR was developed in 2002 and reflects the data available at that time. The POLAR measure of participation is very similar to the YPR(A) measure used in this report and is based on entrants to HE courses in HEIs and FEIs from the 1997, 1998 and 1999 cohorts. The POLAR quintiles differ slightly from the ward quintiles used in this report, mainly because they are calculated for Great Britain as a whole and then adjusted to give integer ranges. Despite this, and the different cohort bases, the correspondence between the POLAR ward quintiles and the English ward whole-period YPR(A) quintiles is very good, and the group trends and characteristics recorded in this report can be taken to apply to the POLAR ward quintiles. One advantage of an internet-based resource is that it can be readily updated. It is planned to update POLAR both to use the new 2001 Census small area geography and to incorporate the extra cohorts used in this report.

# Annex I

## The effect of nursing entrants on participation trends by sex

One concern of using HESA data in participation time series is that during the mid-1990s a number of nursing colleges were absorbed into HEIs. This means there is a danger that some of the apparent rise in the YPR(H) is not a result of changes in participation but due rather to the addition to the HESA record of students at HE courses in these absorbed colleges. There is a particular concern with the participation trends by sex since the predominance of women in the absorbed nursing colleges would mean that any apparent increase in the YPR(H) would be concentrated in the participation rate for women.

To determine the extent of this effect a special YPR(H) time series was created, without any entrants whose subject of study falls within the HESA subject group 'Subjects Allied to Medicine' (which is mainly nursing but also includes, for example, pharmacy). Figure 85 shows the trend of YPR(H) by sex for England with this 'no nurses' data set and is the analogue to Figure 9 in the main results. Figure 86 uses this 'no nurses' data set to show the degree of inequality by sex (as the proportional participation advantage of young women over young men) which can be compared to Figure 10 in the main results.

The exclusion of these (mainly) nursing entrants depresses the YPR(H) figure for England by 0.9 per cent for the 1994 cohort, rising to 1.2 per cent for the 1997 cohort and stable thereafter. This suggests that any distortion resulting from the addition of the nursing colleges to the time series is concentrated in the first few years. Around 80 per cent of the entrants excluded by the 'no nurses' measure are women, so the YPR(H) on this basis is 1.4-2.0 percentage points lower for women but only 0.4-0.6 percentage points lower for men. Because more women are removed than men, the degree of sex inequality is reduced compared to the full YPR(H) measure. With the subjects allied to medicine excluded, young women are 13 per cent more likely to participate than young men for the 2000 cohort, compared to 18 per cent more likely under the full YPR(H) definition. However, the trend across the period, of a steady growth in inequality, is the same whether nurses are included or not.

We also examined the effect on the participation rates of the ward participation quintiles of removing the subjects allied to medicine entrants. This showed that the proportional reduction in YPR(H) was marginally greater for disadvantaged areas but only very slightly: there was a proportional 5 per cent reduction in YPR(H) for the first quintile and a proportional 4 per cent reduction in YPR(H) for the fifth quintile. The trends reported in the quintile analysis section are not affected by the removal of these entrants.

Taken together, these results suggest that the distortion to the full YPR(H) series is minimal from the merging of nursing colleges with HEIs making returns to HESA. Most of the growth in gender inequality over the period remains when HE entrants to nursing and allied subjects are removed. Additionally the higher proportional YPR(H) growth of disadvantaged areas in the quintile analysis is not accounted for by the nursing and allied subjects entrants.

Figure 85 **YPR(H) by sex (England) with 'Subjects Allied to Medicine' entrants removed**

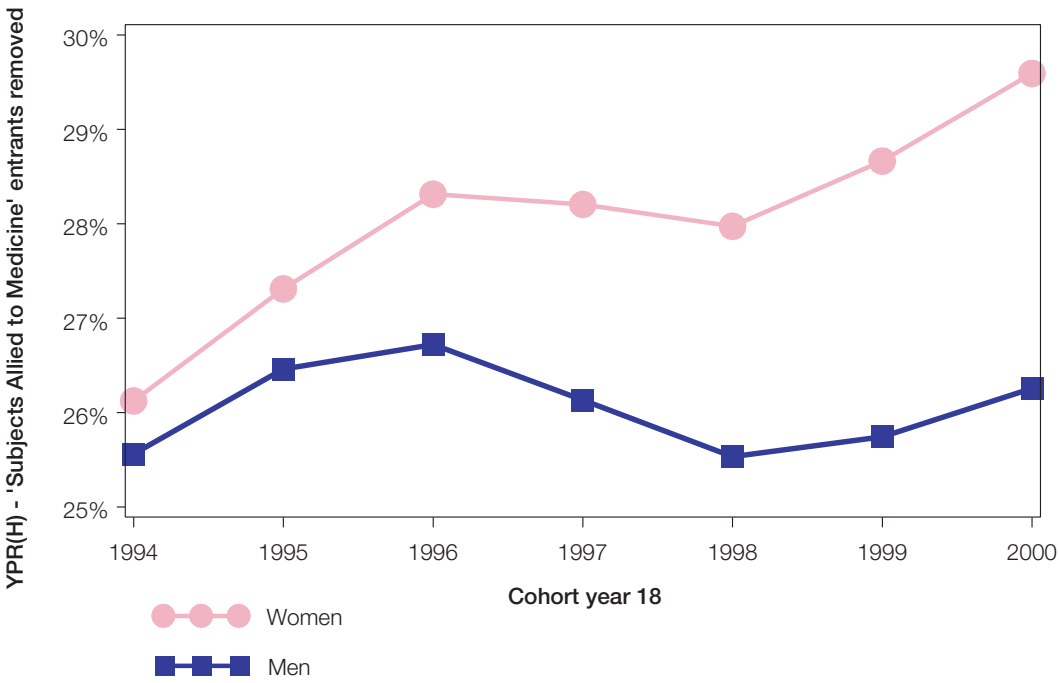
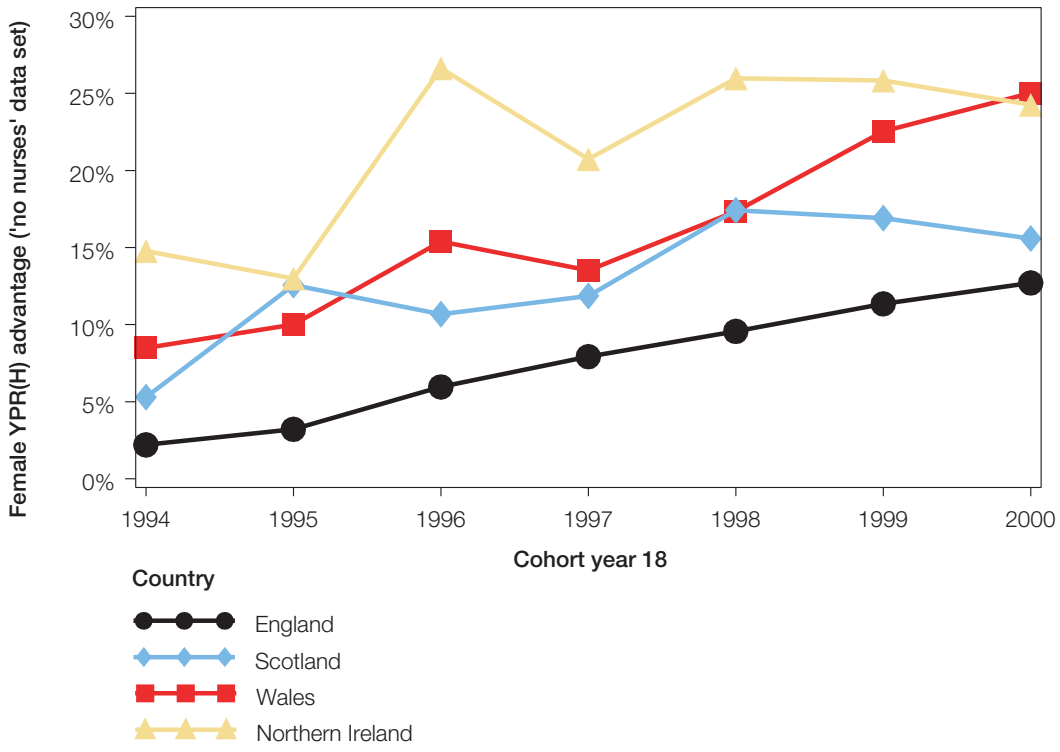



Figure 86 **YPR(H) Sex inequality by country ('Subjects Allied to Medicine' entrants removed)**



# Annex J

## Regional effects on group participation patterns

The series of quintile participation results in Figures 27 to 45 mostly show a common pattern across the different area groupings but there are a few notable differences. For example, the proportional growth in the first quintile is much greater when the groups are formed by ranking on the measures from the IMD rather than on a measure of participation. Some of these differences are associated with the regional pattern of the quintile growth, in particular the varying influence of London between grouping schemes.

### J.1 Regional cohort profiles across quintiles

When ranked by the IMD2000 itself or the IMD child poverty measure the most deprived quintile of wards shows a proportional increase in YPR(H) of around 25 per cent (Figures 34, 35) over the period. This is substantially greater than that typically recorded under other grouping systems, such as the proportional increase of 15 per cent seen by the lowest participating quintile of wards and 17 per cent for the wards with the lowest levels of HE-qualified adults (see Table 30). The IMD quintiles also have a very different regional distribution compared to the qualified adults or ward participation quintiles. This is shown in Table 19 which gives the share of the regional cohort across (English) quintiles based on ranking wards by the IMD, proportion of adults with an HE qualification (Census 1991), and the whole-period YPR(H).

Table 19 **The profile of regional cohorts across three quintile groupings**

| | | Share of regional cohort (%) in each quintile (by three quintile types) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | IMD | | | | | HE-qualified adults | | | | | YPR(H) quintiles | | | | |
| Region | YPR(H) | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| North East | 22.6 | 42 | 28 | 16 | 8 | 6 | 37 | 23 | 14 | 13 | 13 | 36 | 23 | 14 | 15 | 11 |
| Yorkshire and the Humber | 23.7 | 29 | 23 | 19 | 20 | 10 | 26 | 24 | 21 | 17 | 12 | 33 | 21 | 18 | 16 | 12 |
| North West | 26.0 | 33 | 23 | 19 | 16 | 8 | 28 | 19 | 16 | 19 | 17 | 28 | 20 | 17 | 17 | 18 |
| West Midlands | 26.4 | 27 | 20 | 21 | 18 | 13 | 34 | 20 | 19 | 14 | 15 | 21 | 24 | 21 | 16 | 17 |
| East Midlands | 26.7 | 16 | 21 | 21 | 21 | 21 | 23 | 24 | 21 | 18 | 14 | 21 | 23 | 19 | 21 | 16 |
| East of England | 28.4 | 6 | 14 | 22 | 28 | 29 | 15 | 23 | 21 | 22 | 19 | 17 | 20 | 23 | 23 | 18 |
| South West | 29.2 | 7 | 18 | 26 | 28 | 21 | 11 | 21 | 26 | 25 | 18 | 14 | 18 | 24 | 26 | 19 |
| South East | 32.1 | 4 | 12 | 18 | 22 | 44 | 9 | 16 | 19 | 26 | 31 | 13 | 15 | 20 | 25 | 28 |
| London | 33.1 | 25 | 25 | 18 | 16 | 15 | 9 | 17 | 22 | 22 | 30 | 9 | 20 | 22 | 18 | 31 |
| | | | | | | | | | | | | | | | | |
| **England** | **28.1** | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **20** |

*Note: The table figures give the percentage of the cohort within each region that is in wards assigned to each of the five quintiles under each of the three quintile schemes. The five row percentages within each quintile type may not sum to 100 due to rounding. Combined 1994 to 2000 cohorts are used. The three quintile groupings are based on ranking wards by the IMD2000, the proportion of adults with an HE qualification, and the YPR(H). Regions are ranked by average YPR(H) over the 1994 to 2000 cohorts.*

The share of the cohort in the first ward YPR(H) quintile reflects the order of regional participation rates: the North East and Yorkshire and the Humber have over a third of their cohort living in wards in this first YPR(H) quintile, and London has just 9 per cent of children living in such wards. The ordering of the shares of the regional cohorts assigned to the first qualified adults quintile is similar, reflecting the close association between these two measures (highlighted in Figure 53).

The IMD quintiles have a different pattern: the highest participating region, London, has an above average proportion (25 per cent) of its cohort living in the IMD defined most deprived 20 per cent of wards. London also has a lower than average proportion (15 per cent) of its cohort living in the IMD defined least deprived wards. This share is lower than that shown by the East Midlands and in sharp contrast with the YPR(H) and qualified adults quintiles, where London has over 30 per cent of its cohort living in fifth quintile wards.

The result of these differences is that, when using the IMD based quintiles, London (which has around 13 per cent of the cohort over this period) has a strong presence in the first quintile (17 per cent of the quintile total) and a relatively slight presence in the fifth quintile (10 per cent of the quintile total). When using the YPR(H) or qualified adults quintiles the situation is reversed, with London having only a marginal presence in the first quintile (6 per cent of quintile total) but a substantial presence in the fifth quintile (20 per cent of the quintile total). This means that participation trend in London will have a much stronger influence on the first quintile participation trend when the quintiles are based on the IMD compared to when they are based on the other measures.

## J.2 Differences in quintile participation patterns by region

### Average participation of quintiles by region

Table 19 shows that the regional composition of quintiles varies according to the grouping scheme used. This could introduce regional effects into, for example, the quintile participation ratios if the pattern of participation by quintile differs across regions. Table 20 shows the whole-period regional YPR(H) rates for the IMD, qualified adults and period YPR(H) ward quintiles.

Table 20 **YPR(H) of three quintile groupings by English region**

| | | YPR(H) of regional cohort (%) in each quintile (by three quintile types) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | IMD | | | | | HE-qualified adults | | | | | YPR(H) quintiles | | | | |
| **Region** | **YPR(H)** | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** |
| North East | 22.6 | 12 | 21 | 32 | 39 | 56 | 11 | 18 | 27 | 33 | 47 | 10 | 18 | 26 | 34 | 52 |
| Yorkshire and the Humber | 23.7 | 12 | 17 | 26 | 35 | 46 | 10 | 18 | 26 | 34 | 47 | 10 | 18 | 26 | 35 | 49 |
| North West | 26.0 | 13 | 21 | 31 | 40 | 51 | 12 | 18 | 26 | 35 | 48 | 10 | 19 | 26 | 36 | 50 |
| West Midlands | 26.4 | 15 | 20 | 26 | 36 | 46 | 15 | 20 | 28 | 38 | 48 | 11 | 18 | 25 | 35 | 49 |
| East Midlands | 26.7 | 13 | 19 | 25 | 33 | 41 | 14 | 20 | 27 | 36 | 48 | 10 | 18 | 26 | 35 | 49 |
| East of England | 28.4 | 12 | 16 | 22 | 30 | 41 | 13 | 20 | 26 | 34 | 47 | 11 | 19 | 26 | 35 | 51 |
| South West | 29.2 | 14 | 21 | 26 | 33 | 40 | 13 | 19 | 28 | 34 | 46 | 11 | 19 | 26 | 35 | 49 |
| South East | 32.1 | 11 | 18 | 23 | 31 | 42 | 11 | 19 | 25 | 35 | 47 | 11 | 18 | 26 | 36 | 50 |
| London | 33.1 | 21 | 28 | 35 | 44 | 48 | 13 | 23 | 30 | 33 | 46 | 11 | 19 | 26 | 35 | 52 |
| | | | | | | | | | | | | | | | | |
| **England** | **28.1** | **14** | **21** | **27** | **35** | **44** | **13** | **19** | **27** | **35** | **47** | **10** | **18** | **26** | **35** | **51** |

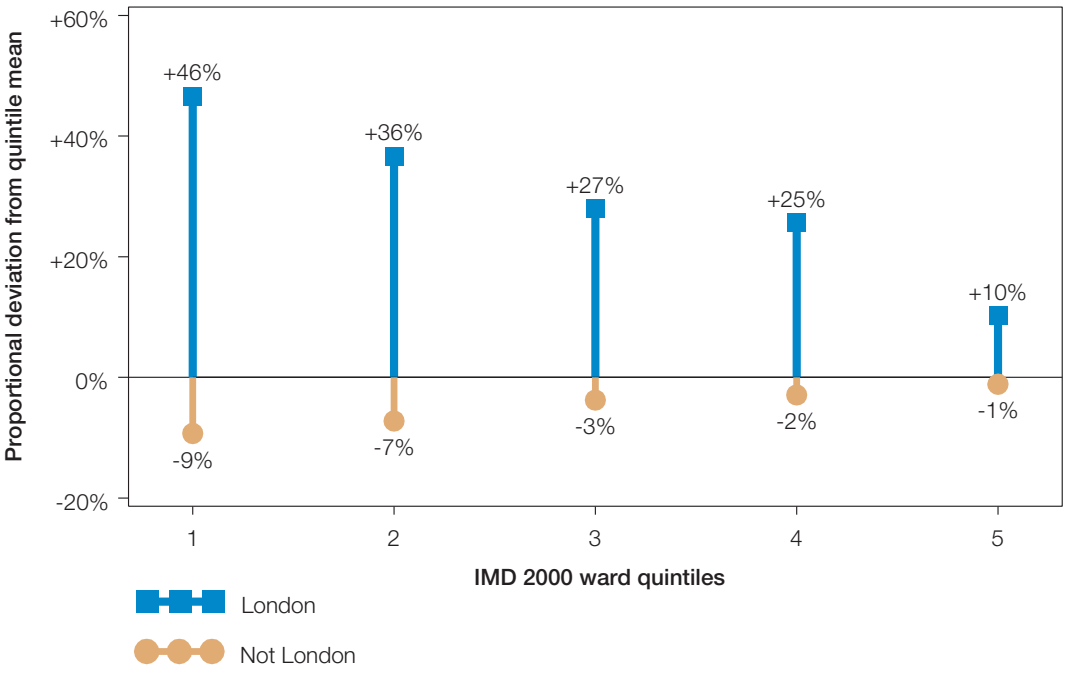
*Note: The table gives the participation (YPR(H), 1994 to 2000 cohorts combined) of each (national) quintile within each region under each of the three quintile schemes. The regions are ranked by their average YPR(H) over the 1994 to 2000 cohorts.*

One advantage of using ward participation quintiles is immediately clear: by definition the quintile rates do not vary much by region, with the first quintile ranging from 10 per cent to 11 per cent and the fifth from 49 per cent to 52 per cent across the English regions. The qualified adults quintiles show more variation in their regional first quintile rates, which range from 10 per cent (Yorkshire and the Humber) to 15 per cent (East Midlands) but are remarkably constant for the fifth quintile rates, with the YPR(H) for this quintile between 46 per cent and 48 per cent for all regions.

In contrast, the IMD quintiles show a very mixed pattern of regional quintile rates. Most regions have a first quintile participation rate in an 11 per cent to 15 per cent band; but the first IMD quintile in London has a strikingly higher – at 21 per cent – participation rate. The fifth quintile is variable across all regions, ranging from 40 per cent (South West) to 56 per cent (North East) with London being unexceptional in this case.

Figure 87 summarises the difference between the participation rates for IMD quintiles in London compared to the rest of England. This shows that the relatively higher participation rate of the London IMD quintiles persists across all five quintiles, but noticeably declines as the quintiles become progressively less deprived. The first IMD quintile shows a participation rate in London that is proportionally 46 per cent higher than the average for the rest of England. By the fifth quintile this enhanced London participation has fallen to just 10 per cent above the average for the rest of England.

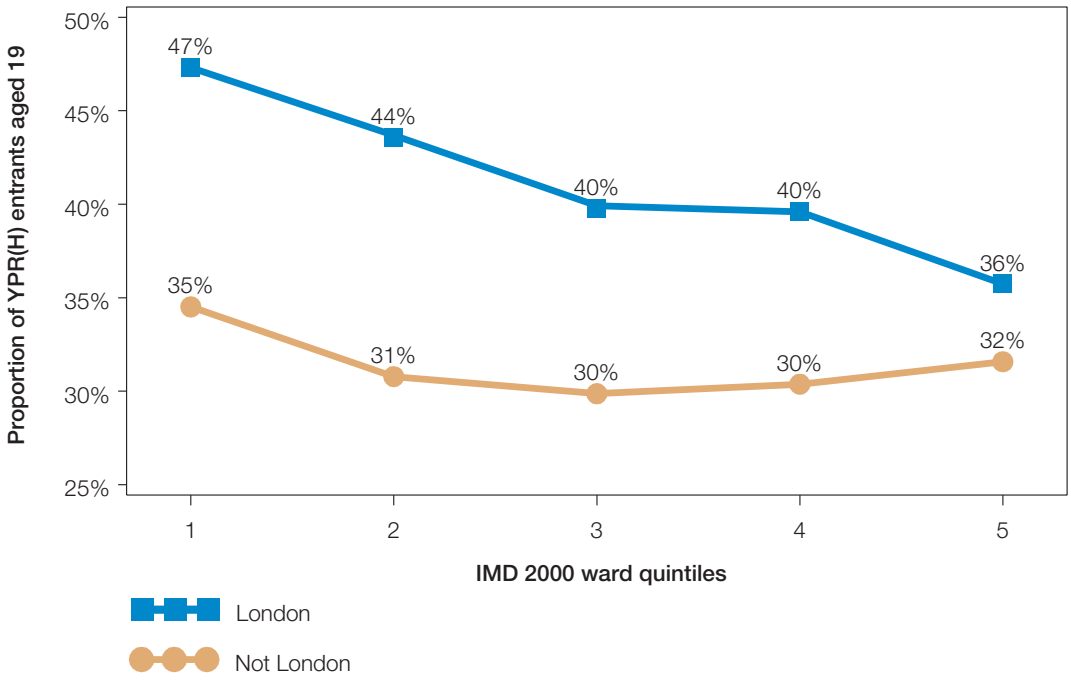
Figure 87 **The proportional difference in participation (YPR(H), 1994 to 2000 cohorts) between London and the rest of England for English IMD ward quintiles**



### Entry age differences by IMD quintile and region

The theme of IMD quintiles being different in London compared to other regions, and especially so for the most deprived quintiles, is repeated when the age of entry is looked at. The proportion of YPR(H) entrants who enter at age 19, split by London and the rest of England, is shown for each quintile in Figure 88.

Figure 88 **Proportion of YPR(H) entrants who enter HE aged 19 from London and the rest of England by English IMD quintile (1994-2000 cohorts combined)**



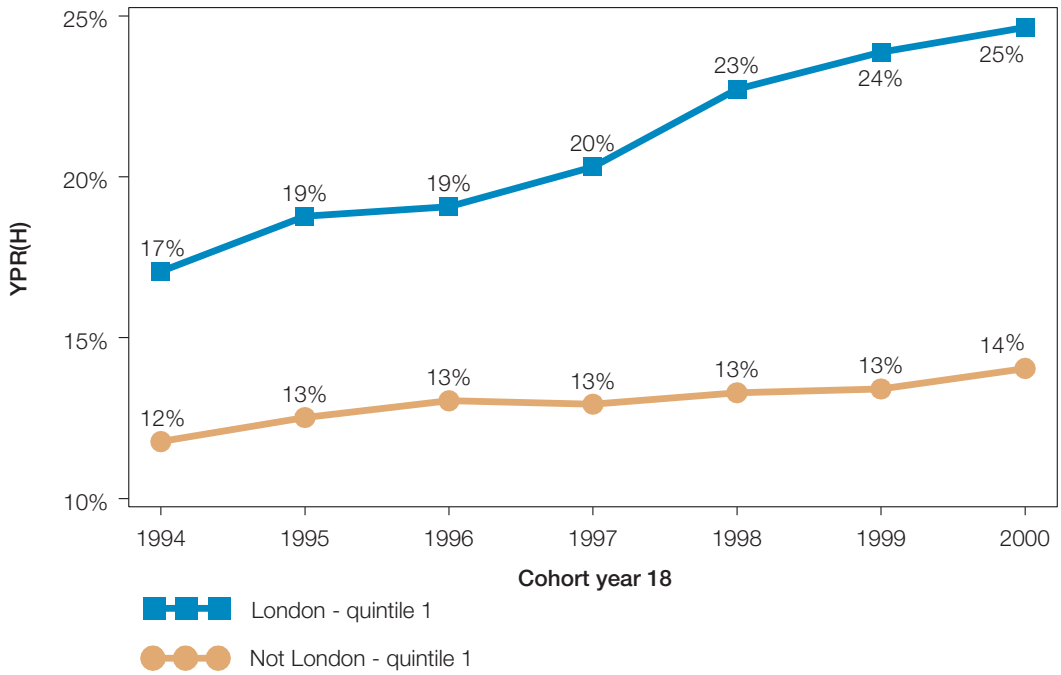

The high proportion of age 19 entrants from London that was noted in the main results (see Figure 18) is reflected in there being a higher proportion of entrants aged 19 from London than from the rest of England for each IMD quintile. For all regions the proportion entering at age 19 is highest for the most deprived IMD quintile. This is particularly marked for London, where nearly half of the entrants from the first IMD quintile enter HE at age 19 compared to just over a third from the rest of England. For London the proportion entering at age 19 falls steadily as the IMD quintiles become progressively less deprived, reducing the difference between other regions. For the least deprived fifth quintile 36 per cent of entrants enter at age 19 from London compared to 32 per cent from other regions. The relationship between the regional proportions entering at age 19 and the ethnic group of entrants by region was looked at in the main section of the report (Figure 19).

### Differences in quintile participation growth by region

A large proportion of the English cohort living in IMD first quintile wards are to be found in London. The enhanced participation of the first IMD quintile seen for

London will mean that the London entrants will form an even larger proportion of the first IMD quintile entrants. This, in turn, means that London will exert a strong influence on the overall participation trends of the first IMD quintile. Figure 89 examines whether this has the potential to alter the participation trend for this quintile by plotting the YPR(H) for the first IMD quintile with London and the rest of England shown separately.

Figure 89 **YPR(H) for first IMD2000 quintile 1994-2000 by London/Not London**

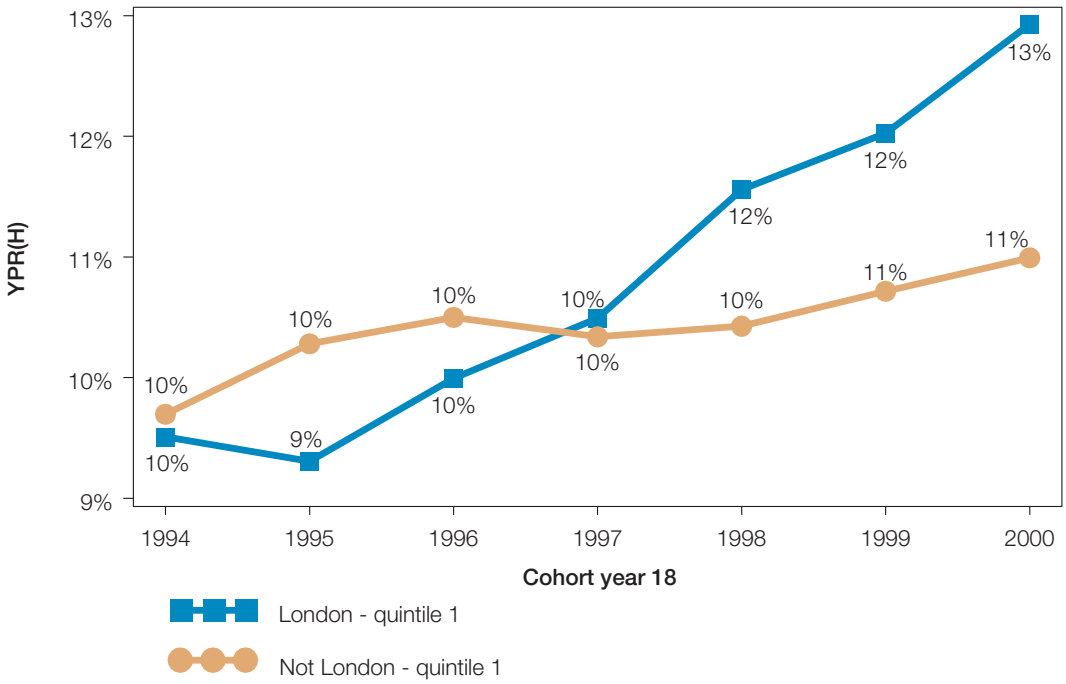



Outside of London, the participation of the first IMD quintile increases from 12 per cent to 14 per cent across the period, a proportional rise of 18 per cent. Participation of the first IMD quintile in London starts out higher, at 17 per cent, and rises to 25 per cent by the 2000 cohort. This is a dramatic 50 per cent proportional increase with the consequence that, for the 2000 cohort, the YPR(H) of the first IMD quintile in London is 75 per cent higher than the average for the rest of England, and 22 per cent higher than the average YPR(H) of the *second* quintile for the rest of England. The second IMD quintile shows a similar pattern, showing a small YPR(H) increase of 18 per cent to 20 per cent across the period outside of London and a larger increase, from a higher base, of 25 per cent to 32 per cent for London.

Using the whole period YPR(H) quintiles – instead of the IMD quintiles – acts to reduce these effects. This is because if a low participation ward experienced very strong participation growth it would be less likely to be classified as low participation overall using the whole-period measure. Figure 90 shows the participation trends of the first YPR(H) ward quintile for London and the rest of England. As expected, the gap between the participation of the first YPR(H)

quintile in London and the same quintile in the rest of England is much smaller than seen for the IMD quintiles. Nevertheless the pattern of higher London growth remains, with the small number (see Table 19) of London wards in the first YPR(H) quintile showing a much higher rise than those outside of London. London's first quintile wards increase their aggregate YPR(H) by over 3 percentage points (a proportional 36 per cent increase) compared to just over 1 percentage point (a proportional 13 per cent increase) for first YPR(H) quintile wards elsewhere in England.

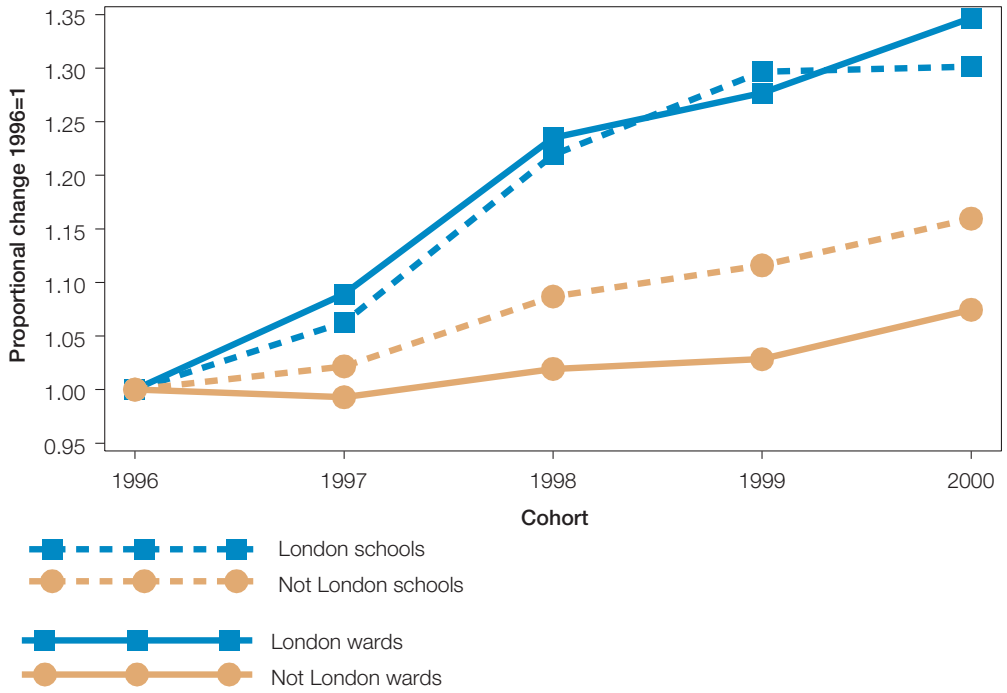
Figure 90 **YPR(H) for first ward YPR(H) quintile for the 1994 to 2000 cohorts**



## J.3 Investigating the high participation growth for deprived areas in London

One concern with the apparent high participation growth observed for London, and the disadvantaged groups in London in particular, is that it may be a result of a regional bias in, for example, the cohort estimates rather than a real change in participation rates. In the group trend results, quintiles based on schools ranked by the GCSE 5AC measure were compared against participation quintiles of wards and the similarities noted (see Figures 42 and 43). In an analogous way, the trend of GCSE results improvement for the first school GCSE 5AC quintile for London and the rest of England can be compared against the participation of the first IMD2000 quintile, to see if the differences in participation growth are reflected in the school results trends.

Figure 91 **Proportional growth of the first quintile of wards and schools for England**




*Note: Unlike the previous figures the quintiles of IMD deprived wards and GCSE 5AC ranked schools shown here are formed independently within the two groups London and the rest of England. This ensures that the most disadvantaged 20 per cent of children (as defined by the two measures) are being compared within each regional group.*

Figure 91 shows the proportional change in the YPR(H) for the most deprived quintile of wards in London, together with the proportional change in the GCSE 5AC measure for the lowest achieving 20 per cent of schools for each cohort, both indexed to the 1996 cohort being one (this being the first year of school results).

The same statistics are shown for the rest of England as a single group. In London both the participation of the first IMD quintile and the GCSE performance of the lowest achieving schools have increased substantially, and in step, over the period, to finish proportionally 34 per cent and 30 per cent higher respectively. Outside of London the improvement in the lowest achieving schools is much smaller at 16 per cent proportionally and the increase in participation from the first IMD quintile is just 7 per cent proportionally.

This simple comparison to GCSE results trends is clearly not the full explanation of the participation patterns observed. For example, for the 2000 cohort the most deprived 20 per cent of wards in London have a participation rate 73 per cent[79] higher than the most deprived 20 per cent of wards outside London, yet the GCSE 5AC measure for the lowest ranked 20 per cent of schools in London is 12 per cent less than for the lowest ranked 20 per cent of schools elsewhere in England. There are also difficulties in the assumption that the school and ward quintiles are referring to broadly the same group of children; these are outlined in the discussion of the school results shown in Figure 42. Nevertheless this comparison does suggests that the high proportional increases in YPR(H) observed for the first IMD quintile in London are not inconsistent with the proportional improvement in GCSE 5AC results at the lowest achieving schools for the same cohorts. In particular they do not indicate that a problem with the cohort estimates is leading to the observed increases.

## J.4 Summary of regional effects on IMD quintile analysis

In the main results the group trends for quintiles based on ranking on the IMD were noted to differ from those from ranking on other measures. The regional distribution of the IMD quintiles differs from groupings formed on other measures of disadvantage in that a high proportion of the cohort in London lives in first and second quintile wards. With other ranking measures, such as whole-period YPR(H) or the proportion of qualified adults from the 1991 Census, London is a minor component of the first quintile and a major component of the fifth quintile. This means that differences in participation patterns between London and the rest of the country have the potential to show up as differences in the detailed participation patterns of IMD quintiles compared to other ranking measures.

The YPR(H) of IMD quintiles differs from other groupings in showing substantial regional variation. In particular the YPR(H) of IMD deprived wards in London is very much higher than similarly deprived wards elsewhere in England. In addition, the YPR(H) of IMD deprived wards in London has increased by 50 per cent proportionally between the 1994 and 2000 cohorts, whereas similar wards outside of London show a much smaller proportional increase of 18 per cent. A comparison to the improvement of school GCSE results for these cohorts indicates that this growth pattern is not unfeasible in the light of faster improvements in GCSE results for London's lowest ranked schools.

The high participating London wards in the IMD first quintile act to increase the first quintile participation rate and reduce the inequality ratio compared to, say, the ward participation quintiles. This is the main reason why the inequality ratio for the IMD quintiles is much lower than for quintiles formed with other ranking measures.

Similarly, the high influence of London on the first IMD quintile, and the high share of 19 year-old first IMD quintile entrants that are from London, cause the participation inequality at age 19 to be lower than at age 18 (which is another way that the IMD groupings differ). Finally, the high proportional growth of the IMD first quintile compared to other groupings is reflecting the exceptionally high proportional participation growth of heavily weighted first IMD quintile wards in London. In contrast the first ward participation quintile has relatively few wards from London and its participation growth is less, closer to that of first quintile IMD wards outside of London.

# Annex K

## Estimating young postgraduate participation using the HESA survey of the first destinations of graduates

In the main report an analysis of the progression of qualifiers into postgraduate study using record linking methods was reported (see Table 5). A potential weakness of this method is that it relies on tracking individual students that will not be possible in all cases, especially where a change of institution is involved. This annex uses the same population of young standard qualifiers from the 1995 and 1996 cohorts, but estimates their progression to postgraduate study using the HESA first destination survey of graduates to provide an independent check on the linking results.

Institutions survey a sub-set of their qualifiers each year to find out what their main activity is on 31 December following the academic year of their qualification. These responses are collated into the first destinations data set by HESA and aggregate results reported in an annual reference volume[80]. Compared to the linking method, using the FDS has the limitations of non-response to the survey, inconsistencies of self-classification and the restriction of recording the main activity on the survey date. Table 21 shows selected first destinations of young standard qualifiers from the 1995 and 1996 cohorts.

Table 21 **Selected first destinations of young English YPR(H) degree entrants (1995 and 1996 cohorts) that qualify in 3 or 4 years by ward YPR(H) quintile**

| | Ward whole-period YPR(H) quintiles | | | | | |
|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **All** |
| *SQ FDS response rate (%)* | 84.1 | 84.8 | 85.6 | 86.5 | 85.9 | **85.7** |
| *Of SQ FDS respondents (%)* | | | | | | |
| Working | 73.0 | 72.0 | 72.2 | 71.9 | 69.5 | **71.1** |
| Higher Degree – Research | 3.1 | 2.8 | 2.7 | 2.8 | 2.8 | **2.8** |
| Higher Degree – Taught | 6.0 | 6.4 | 6.5 | 6.3 | 6.8 | **6.5** |
| Other PG (incl PGCE) | 6.4 | 6.6 | 6.1 | 6.1 | 7.0 | **6.5** |
| *All PG* | *15.5* | *15.9* | *15.3* | *15.1* | *16.6* | ***15.8*** |
| **All PG of all SQ (%)** | **13.0** | **13.5** | **13.1** | **13.1** | **14.3** | **13.6** |

*Notes: Standard qualifiers (SQ) are those YPR(H) entrants who graduate (from full-time study at the same institution) with a first degree within 3 or 4 years of entry. 'All PG of all SQ' expresses the postgraduate FDS respondents as a proportion of all standard qualifiers (including non-respondents to the FDS). Comparison with the linking results suggests that the FDS response rate is very high for those in postgraduate study so this is likely to be a better estimate than the proportion of respondents.*

The response rate to the FDS survey for this group is high at 86 per cent, with only minor variation between participation backgrounds. A cross-comparison at the individual level with the record linking method used in the main results indicates that the response rate is higher (over 90 per cent) for those who continue to postgraduate study in the UK than for other standard qualifiers. This means that the proportions of the FDS survey *respondents* recorded as being in postgraduate study (in the UK) are likely to be slight over-estimates. Accordingly Table 21 also reports the postgraduate FDS respondents as a proportion of all standard qualifiers (which will be a slight under-estimate).

Of the standard qualifiers who responded to the FDS survey, 15.8 per cent are recorded as having postgraduate study as their main activity on the survey date. The overwhelming majority (98 per cent) are in the UK, though it is likely that those overseas may be harder to contact so this may be an under-estimate of those studying overseas. Using the assumption that few of the non-respondents will be in postgraduate study gives an estimate of 13.6 per cent of young standard qualifiers who progress to having postgraduate study as their main activity at the end of the year in which they qualified. This is very similar to the 13.3 per cent of standard qualifiers linked to postgraduate study in the year following graduation (from Table 5).

Within this total figure the proportions studying taught or research higher degrees are very similar to the linking method results. Just over twice as many standard qualifier respondents are studying for a taught higher degree than a research higher degree; and although this ratio is highest for the fifth quintile and lowest for the first there is no clear pattern across the participation quintiles. The proportion of standard qualifier respondents who are studying for other postgraduate qualifications (including PGCE) does show a different pattern from the linking results. Although the overall figure (6.5 per cent of respondents, 5.6 per cent of standard qualifiers) is comparable to the 5.4 per cent from the linking method results, the distribution is very different: the FDS results show no clear pattern across the quintiles, whereas the linking results show higher proportions, especially for PGCE, for standard qualifiers from the lower participating quintiles.

This difference is the main reason why, overall, there are slightly greater proportions of standard qualifier respondents from the higher participation quintiles in postgraduate study than from the lower participation quintiles – the opposite finding from the linking method results. Closer investigation of this result shows that the majority of those linked to a PGCE course have their main activity on the FDS classified as 'working' (for unknown reasons, possibly due to a misinterpretation of the teaching practice component of such courses). Progression to PGCE courses is nearly twice as important for standard qualifiers from the first quintile compared to those from the fifth quintile, so the apparent misclassification of this route as 'working' will differentially reduce the apparent postgraduate participation of those from the first participation quintile. This misclassification problem with the FDS explains why the pattern of the 'Other PG' and total postgraduate progression quintile patterns differ from those found with the linking method results. Once this is taken into account the two methods show very good agreement and increase the confidence in the patterns found.

# Annex L

## Selected result tables

Table 22 **Cohort size, entrants and YPR(H) for 1994 to 2000 cohorts**

| | | Cohort year | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** |
| **Cohort size** | England | 540,600 | 521,500 | 533,100 | 581,100 | 600,400 | 591,400 | 575,800 |
| | Wales | 33,600 | 31,900 | 32,600 | 35,600 | 36,600 | 35,500 | 35,000 |
| | Scotland | 59,600 | 57,300 | 59,200 | 63,100 | 64,500 | 63,900 | 61,100 |
| | Northern Ireland | 24,500 | 24,200 | 24,500 | 25,800 | 26,700 | 26,300 | 25,300 |
| | UK | 658,200 | 635,000 | 649,400 | 705,500 | 728,300 | 717,200 | 697,200 |
| **Entrants** | England | 144,400 | 145,400 | 152,500 | 164,500 | 167,500 | 167,700 | 167,600 |
| | Wales | 9,300 | 8,900 | 9,400 | 10,200 | 10,700 | 10,500 | 10,600 |
| | Scotland | 14,900 | 15,200 | 15,700 | 16,500 | 16,100 | 16,500 | 16,600 |
| | Northern Ireland | 6,900 | 7,100 | 7,300 | 7,800 | 8,000 | 8,000 | 8,100 |
| | UK | 175,500 | 176,700 | 184,800 | 199,100 | 202,400 | 202,700 | 202,800 |
| **YPR(H)** | England | 26.7% | 27.9% | 28.6% | 28.3% | 27.9% | 28.4% | 29.1% |
| | Wales | 27.5% | 28.0% | 29.0% | 28.8% | 29.4% | 29.5% | 30.2% |
| | Scotland | 25.0% | 26.6% | 26.5% | 26.2% | 25.0% | 25.8% | 27.1% |
| | Northern Ireland | 28.3% | 29.5% | 29.6% | 30.2% | 29.8% | 30.3% | 31.9% |
| | UK | 26.7% | 27.8% | 28.5% | 28.2% | 27.8% | 28.3% | 29.1% |

Table 23 **Cohort size, entrants and YPR(A) for 1997 to 2000 cohorts**

| | | Cohort year | | | |
|---|---|---|---|---|---|
| | | **1997** | **1998** | **1999** | **2000** |
| **Cohort size** | England | 581,100 | 600,400 | 591,400 | 575,800 |
| | Wales | 35,600 | 36,600 | 35,500 | 35,000 |
| | Scotland | 63,100 | 64,500 | 63,900 | 61,100 |
| | GB | 679,800 | 701,600 | 690,900 | 671,900 |
| **Entrants** | England | 169,700 | 172,700 | 172,600 | 172,200 |
| | Wales | 10,400 | 10,900 | nc | nc |
| | Scotland | 24,000 | 23,500 | 23,700 | 23,700 |
| | GB | 204,100 | 207,100 | 206,900 | 206,500 |
| **YPR(A)** | England | 29.2% | 28.8% | 29.2% | 29.9% |
| | Wales | 29.2% | 29.8% | nc | nc |
| | Scotland | 38.1% | 36.4% | 37.0% | 38.7% |
| | GB | 30.0% | 29.5% | 29.9% | 30.7% |

*Note: YPR(A) can only be calculated for the 1997 and later cohorts. nc=not calculated: Welsh FEI data is available for this project for the 1997 and 1998 cohorts only, where a comparison with the YPR(H) rates shows that it makes a net contribution of about 0.5 per cent to the YPR(A). The GB YPR(A) figure for 1999 and 2000 is therefore not strictly correct as it does not include entrants to HE in Welsh FEIs (around 70 per cohort for 1997 and 1998, the remaining difference between the Welsh YPR(A) and YPR(H) entrants being Welsh entrants to HE in English FEIs) but will not affect the GB YPR(A) figure at the precision shown.*

Table 24 **Cohort size, entrants and YPR(H) by sex and country (1994 to 2000 cohorts)**

| | | | Cohort year | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** |
| **Cohort size** | England | Men | 276,800 | 267,000 | 272,900 | 297,500 | 307,900 | 302,900 | 295,300 |
| | | Women | 263,800 | 254,500 | 260,100 | 283,600 | 292,500 | 288,500 | 280,500 |
| | Wales | Men | 17,200 | 16,400 | 16,700 | 18,200 | 18,900 | 18,100 | 17,900 |
| | | Women | 16,400 | 15,600 | 15,900 | 17,400 | 17,700 | 17,500 | 17,100 |
| | Scotland | Men | 30,500 | 29,400 | 30,300 | 32,300 | 33,000 | 32,700 | 31,300 |
| | | Women | 29,100 | 28,000 | 28,900 | 30,800 | 31,500 | 31,200 | 29,800 |
| | Northern Ireland | Men | 12,500 | 12,400 | 12,600 | 13,200 | 13,700 | 13,500 | 12,900 |
| | | Women | 11,900 | 11,800 | 12,000 | 12,600 | 13,000 | 12,800 | 12,300 |
| | UK | Men | 337,000 | 325,100 | 332,500 | 361,200 | 373,600 | 367,200 | 357,400 |
| | | Women | 321,200 | 309,900 | 316,900 | 344,300 | 354,700 | 350,000 | 339,700 |
| **Entrants** | England | Men | 71,800 | 71,900 | 74,400 | 79,500 | 80,300 | 79,600 | 79,100 |
| | | Women | 72,600 | 73,500 | 78,100 | 85,100 | 87,300 | 88,100 | 88,500 |
| | Wales | Men | 4,500 | 4,300 | 4,400 | 4,900 | 5,000 | 4,700 | 4,700 |
| | | Women | 4,800 | 4,600 | 5,000 | 5,400 | 5,700 | 5,800 | 5,800 |
| | Scotland | Men | 7,200 | 7,000 | 7,300 | 7,700 | 7,300 | 7,500 | 7,600 |
| | | Women | 7,700 | 8,200 | 8,300 | 8,800 | 8,800 | 9,000 | 9,000 |
| | Northern Ireland | Men | 3,200 | 3,400 | 3,200 | 3,500 | 3,500 | 3,500 | 3,500 |
| | | Women | 3,700 | 3,800 | 4,100 | 4,300 | 4,500 | 4,500 | 4,500 |
| | UK | Men | 86,700 | 86,600 | 89,300 | 95,500 | 96,200 | 95,300 | 95,000 |
| | | Women | 88,900 | 90,200 | 95,600 | 103,500 | 106,300 | 107,300 | 107,800 |
| **YPR(H)** | England | Men | 26.0% | 26.9% | 27.3% | 26.7% | 26.1% | 26.3% | 26.8% |
| | | Women | 27.5% | 28.9% | 30.0% | 30.0% | 29.8% | 30.5% | 31.6% |
| | Wales | Men | 26.0% | 26.2% | 26.6% | 26.6% | 26.6% | 26.0% | 26.4% |
| | | Women | 29.1% | 29.8% | 31.6% | 31.1% | 32.3% | 33.2% | 34.1% |
| | Scotland | Men | 23.5% | 23.9% | 24.2% | 23.9% | 22.2% | 23.0% | 24.3% |
| | | Women | 26.6% | 29.4% | 28.9% | 28.5% | 27.9% | 28.8% | 30.1% |
| | Northern Ireland | Men | 25.5% | 27.1% | 25.3% | 26.6% | 25.7% | 25.8% | 27.4% |
| | | Women | 31.3% | 32.1% | 34.2% | 34.1% | 34.2% | 35.0% | 36.6% |
| | UK | Men | 25.7% | 26.6% | 26.9% | 26.4% | 25.7% | 26.0% | 26.6% |
| | | Women | 27.7% | 29.1% | 30.2% | 30.1% | 30.0% | 30.7% | 31.7% |

Table 25 **Cohort size, entrants and YPR(A) by sex and country (1997 to 2000 cohorts)**

| | | | Cohort year | | | |
|---|---|---|---|---|---|---|
| | | | **1997** | **1998** | **1999** | **2000** |
| **Cohort size** | England | Men | 297,500 | 307,900 | 302,900 | 295,300 |
| | | Women | 283,600 | 292,500 | 288,500 | 280,500 |
| | Wales | Men | 18,200 | 18,900 | 18,100 | 17,900 |
| | | Women | 17,400 | 17,700 | 17,500 | 17,100 |
| | Scotland | Men | 32,300 | 33,000 | 32,700 | 31,300 |
| | | Women | 30,800 | 31,500 | 31,200 | 29,800 |
| | GB | Men | 348,000 | 359,900 | 353,700 | 344,500 |
| | | Women | 331,700 | 341,700 | 337,200 | 327,400 |
| **Entrants** | England | Men | 82,100 | 82,900 | 82,100 | 81,500 |
| | | Women | 87,600 | 89,900 | 90,500 | 90,800 |
| | Wales | Men | 4,900 | 5,100 | nc | nc |
| | | Women | 5,500 | 5,800 | nc | nc |
| | Scotland | Men | 11,200 | 10,700 | 10,700 | 10,800 |
| | | Women | 12,900 | 12,800 | 13,000 | 12,900 |
| | GB | Men | 98,200 | 98,700 | 97,600 | 97,000 |
| | | Women | 106,000 | 108,500 | 109,300 | 109,500 |
| **YPR(A)** | England | Men | 27.6% | 26.9% | 27.1% | 27.6% |
| | | Women | 30.9% | 30.7% | 31.4% | 32.4% |
| | Wales | Men | 27.0% | 27.0% | nc | nc |
| | | Women | 31.6% | 32.8% | nc | nc |
| | Scotland | Men | 34.6% | 32.4% | 32.8% | 34.5% |
| | | Women | 41.8% | 40.7% | 41.5% | 43.2% |
| | GB | Men | 28.2% | 27.4% | 27.6% | 28.2% |
| | | Women | 32.0% | 31.7% | 32.4% | 33.4% |

*Note: nc indicates not calculated. See footnote to Table 23.*

Table 26 **YPR(A) by month of birth and sex for the 1998, 1999 and 2000 English cohorts**

| | YPR(A) | | | | | |
|---|---|---|---|---|---|---|
| | Men | | Women | | All | |
| | Entry age | | Entry age | | Entry age | |
| Month of birth | 18 | 19 | 18 | 19 | 18 | 19 |
| September | 19.7% | 9.7% | 23.9% | 9.6% | 21.7% | 9.7% |
| October | 18.8% | 9.7% | 23.0% | 10.0% | 20.8% | 9.9% |
| November | 18.4% | 9.5% | 21.8% | 10.0% | 20.1% | 9.8% |
| December | 17.9% | 9.3% | 21.3% | 9.9% | 19.6% | 9.6% |
| January | 17.7% | 9.6% | 21.4% | 10.3% | 19.5% | 9.9% |
| February | 17.5% | 9.6% | 21.2% | 10.3% | 19.3% | 10.0% |
| March | 17.6% | 9.5% | 21.1% | 10.4% | 19.3% | 9.9% |
| April | 17.7% | 9.6% | 21.4% | 10.1% | 19.5% | 9.9% |
| May | 17.5% | 9.7% | 21.4% | 10.4% | 19.4% | 10.1% |
| June | 17.1% | 9.7% | 20.3% | 10.3% | 18.6% | 10.0% |
| July | 16.2% | 9.9% | 20.3% | 10.3% | 18.2% | 10.1% |
| August | 15.7% | 10.1% | 19.8% | 10.8% | 17.7% | 10.4% |
| Year | 17.6% | 9.7% | 21.4% | 10.2% | 19.5% | 9.9% |

Table 27 **Cohort size, entrants and YPR(H) by English region for 1994 to 2000 cohorts**

| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|
| **Cohort size** | North East | 30,100 | 28,800 | 29,700 | 33,000 | 34,100 | 33,000 | 32,000 |
| | North West | 80,000 | 77,000 | 78,800 | 86,200 | 88,400 | 87,100 | 85,900 |
| | Yorkshire and the Humber | 56,700 | 54,000 | 55,400 | 60,400 | 62,600 | 61,500 | 59,900 |
| | East Midlands | 46,600 | 44,800 | 45,700 | 49,700 | 52,200 | 51,200 | 49,400 |
| | West Midlands | 61,400 | 58,900 | 60,200 | 65,800 | 68,100 | 66,200 | 65,300 |
| | East of England | 59,600 | 57,300 | 58,300 | 63,200 | 65,500 | 64,500 | 61,800 |
| | London | 68,800 | 68,100 | 70,000 | 76,200 | 76,900 | 77,300 | 76,500 |
| | South East | 85,900 | 82,800 | 84,400 | 91,600 | 94,700 | 94,100 | 89,800 |
| | South West | 51,400 | 49,700 | 50,600 | 55,000 | 57,900 | 56,500 | 55,200 |
| **Entrants** | North East | 6,700 | 6,600 | 6,900 | 7,600 | 7,600 | 7,500 | 7,300 |
| | North West | 19,300 | 19,900 | 20,900 | 22,400 | 23,100 | 23,000 | 23,300 |
| | Yorkshire and the Humber | 12,600 | 12,700 | 13,500 | 14,700 | 14,600 | 14,600 | 14,500 |
| | East Midlands | 11,900 | 12,100 | 12,500 | 13,500 | 13,900 | 13,700 | 13,400 |
| | West Midlands | 15,400 | 15,400 | 16,200 | 17,400 | 17,900 | 17,700 | 17,900 |
| | East of England | 16,300 | 16,200 | 16,800 | 18,000 | 18,300 | 18,100 | 18,200 |
| | London | 20,500 | 21,200 | 22,900 | 24,800 | 25,900 | 26,700 | 27,500 |
| | South East | 26,900 | 26,800 | 27,700 | 29,600 | 29,700 | 30,100 | 29,200 |
| | South West | 14,800 | 14,400 | 15,200 | 16,500 | 16,500 | 16,200 | 16,300 |
| **YPR(H)** | North East | 22.2% | 23.0% | 23.0% | 23.0% | 22.3% | 22.8% | 22.8% |
| | North West | 24.1% | 25.9% | 26.5% | 26.0% | 26.1% | 26.4% | 27.1% |
| | Yorkshire and the Humber | 22.3% | 23.6% | 24.4% | 24.3% | 23.3% | 23.8% | 24.2% |
| | East Midlands | 25.6% | 27.0% | 27.3% | 27.1% | 26.6% | 26.8% | 27.2% |
| | West Midlands | 25.0% | 26.1% | 27.0% | 26.4% | 26.2% | 26.8% | 27.4% |
| | East of England | 27.4% | 28.4% | 28.7% | 28.5% | 28.0% | 28.0% | 29.5% |
| | London | 29.8% | 31.2% | 32.7% | 32.6% | 33.7% | 34.6% | 36.0% |
| | South East | 31.3% | 32.3% | 32.9% | 32.4% | 31.4% | 31.9% | 32.5% |
| | South West | 28.8% | 29.0% | 30.0% | 30.0% | 28.5% | 28.6% | 29.5% |

*Note: There are alternative values for the regional YPR(H) rates for the 1994 cohort that use a different adjustment method to better allow for the likely regional distribution of unmapped entrants from that cohort. These figures and details of the adjustment are given in Annex C.*

Table 28 **Typical cohort and YPR(H) ranges for different geographies (England, 2000 cohort)**

| Geography | Number of units | Cohort 10th percentile | Cohort median | Cohort 90th percentile | YPR(H) 10th percentile | YPR(H) 90th percentile |
|---|---|---|---|---|---|---|
| Country | 1 | 580,000 | 580,000 | 580,000 | 29% | 29% |
| Region | 9 | 32,000 | 62,000 | 90,000 | 23% | 36% |
| LSC area | 47 | 6,100 | 11,000 | 20,000 | 23% | 38% |
| MOSAIC type | 53 | 1,200 | 7,900 | 25,000 | 10% | 49% |
| ACORN type | 54 | 2,100 | 8,700 | 20,000 | 9% | 49% |
| Super Profiles cluster | 128 | 490 | 3,200 | 9,900 | 8% | 46% |
| LEA | 150 | 1,500 | 2,800 | 7,700 | 19% | 42% |
| Census district | 366 | 710 | 1,200 | 2,900 | 19% | 42% |
| Parliamentary constituency | 529 | 910 | 1,100 | 1,300 | 18% | 43% |
| Census ward | 8,602 | 17 | 52 | 140 | 12% | 56% |
| Census ED | 101,837 | 1 | 5 | 10 | 0% | 75% |

*Note: Cohort sizes given to two significant figures. YPR(H) rates given to nearest percentage point. Distribution statistics are by number of units rather than weighted by cohort size.*

Table 29 **Cohort size, entrants and YPR(H) for English ward participation quintiles**

| Ward YPR(H) quintiles | | Cohort year | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| **Cohort size** | 1 | 106,700 | 101,600 | 104,700 | 115,600 | 117,700 | 116,600 | 115,400 |
| | 2 | 106,000 | 102,100 | 104,700 | 114,900 | 118,500 | 117,300 | 115,300 |
| | 3 | 106,600 | 102,900 | 105,300 | 114,900 | 119,700 | 117,200 | 114,000 |
| | 4 | 107,800 | 104,200 | 106,200 | 115,100 | 119,300 | 117,200 | 112,800 |
| | 5 | 111,200 | 107,200 | 108,300 | 116,000 | 118,000 | 115,600 | 110,700 |
| **Entrants** | 1 | 10,300 | 10,500 | 11,100 | 12,000 | 12,300 | 12,600 | 12,800 |
| | 2 | 17,900 | 18,300 | 19,500 | 21,200 | 22,000 | 22,200 | 22,800 |
| | 3 | 26,000 | 26,200 | 27,300 | 30,100 | 30,800 | 30,700 | 31,000 |
| | 4 | 36,000 | 36,200 | 37,900 | 40,900 | 41,600 | 41,500 | 41,300 |
| | 5 | 53,200 | 53,200 | 55,300 | 58,600 | 58,800 | 58,400 | 57,500 |
| **YPR(H)** | 1 | 9.7% | 10.3% | 10.6% | 10.4% | 10.5% | 10.8% | 11.1% |
| | 2 | 16.8% | 17.9% | 18.6% | 18.4% | 18.6% | 18.9% | 19.8% |
| | 3 | 24.4% | 25.4% | 25.9% | 26.2% | 25.7% | 26.2% | 27.2% |
| | 4 | 33.4% | 34.7% | 35.7% | 35.6% | 34.8% | 35.4% | 36.6% |
| | 5 | 47.9% | 49.6% | 51.1% | 50.5% | 49.9% | 50.5% | 51.9% |

*Note: Cohort size estimates are adjusted by the post-quintile formation correction (see Annex B). Cohort sizes and entrants are shown to nearest 100. Participation measure shown is YPR(H). Ward quintiles formed by ranking English wards by whole-period YPR(H).*

Table 30 **Summary of quintile results for selected groupings for England**

| | | | | First quintile YPR(H) | | Fifth quintile YPR(H) | | Absolute change | | Proportional change | | Inequality ratio | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Geographical unit** | **Ranking measure** | **Ranking period** | **Sex** | **1994** | **2000** | **1994** | **2000** | **Q1** | **Q5** | **Q1** | **Q5** | **1994** | **2000** |
| Parliamentary constituency | Young participation | Whole period | All | 14.9% | 17.0% | 40.2% | 43.9% | +2.1% | +3.8% | +14% | +9% | 2.7 | 2.6 |
| 1998 electoral ward | Index of Multiple Deprivation (2000) | Late 1990s | All | 12.6% | 15.8% | 41.7% | 44.6% | +3.2% | +2.9% | +25% | +7% | 3.3 | 2.8 |
| 1998 electoral ward | IMD child poverty | 1998-99 | All | 12.4% | 15.7% | 42.6% | 46.1% | +3.3% | +3.5% | +26% | +8% | 3.4 | 2.9 |
| 1991 Census ward | Proportion of adults with HE qualification (1991) | Whole period | All | 11.4% | 13.4% | 44.4% | 48.4% | +2.0% | +4.0% | +17% | +9% | 3.9 | 3.6 |
| 1991 Census enumeration district | Proportion of adults with HE qualification (1991) | Whole period | All | 10.8% | 12.8% | 46.7% | 50.5% | +1.9% | +3.8% | +18% | +8% | 4.3 | 4.0 |
| 1991 Census ward | Young participation | Whole period | All | 9.7% | 11.1% | 47.9% | 51.9% | +1.4% | +4.0% | +15% | +8% | 4.9 | 4.7 |
| 1991 Census ward | Young participation | Whole period | Women | 9.8% | 12.4% | 49.3% | 55.4% | +2.5% | +6.1% | +26% | +12% | 5.0 | 4.5 |
| 1991 Census ward | Young participation | Whole period | Men | 9.0% | 9.5% | 47.4% | 49.2% | +0.5% | +1.8% | +5% | +4% | 5.2 | 5.2 |
| Super Profiles type | Young participation | Whole period | All | 8.1% | 9.4% | 47.6% | 51.8% | +1.3% | +4.2% | +16% | +9% | 5.9 | 5.5 |
| 1991 Census ward | Young participation | Per cohort | All | 8.5% | 10.0% | 50.7% | 53.4% | +1.5% | +2.8% | +17% | +5% | 5.9 | 5.3 |
| MOSAIC type | Young participation | Whole period | All | 7.9% | 9.4% | 47.2% | 50.4% | +1.5% | +3.3% | +19% | +7% | 6.0 | 5.3 |
| ACORN type | Young participation | Whole period | All | 7.7% | 9.1% | 47.2% | 51.4% | +1.4% | +4.2% | +19% | +9% | 6.2 | 5.6 |
| 1991 Census enumeration district | Young participation | Whole period | All | 4.7% | 5.9% | 56.8% | 59.6% | +1.2% | +2.8% | +26% | +5% | 12.2 | 10.1 |

*Note: 'Young participation' is YPR(H) in all cases shown. When the small census enumeration district is used, random fluctuations act to exaggerate the inequality ratio. The 'Inequality ratio' is the participation for the (most advantaged) fifth quintile divided by that of the (least advantaged) first quintile. The units are ranked by the inequality ratio for the 1994 cohort.*

Table 31 **YPR(H) 1994-2000 cohorts for ACORN types (1991 Census version of ACORN)**

| Group | Type | ACORN description | Quintile | Period YPR(H) | Period cohort share % | Typical annual cohort |
|---|---|---|---|---|---|---|
| 01 Wealthy Achievers, Suburban Areas | 01 | Wealthy Suburbs, Large Detached Houses | 5 | 63% | 3.4 | 19,000 |
| | 02 | Villages with Wealthy Commuters | 5 | 46% | 3.6 | 20,000 |
| | 03 | Mature Affluent Home Owning Areas | 5 | 55% | 2.8 | 16,000 |
| | 04 | Affluent Suburbs, Older Families | 5 | 43% | 4.6 | 26,000 |
| | 05 | Mature, Well-Off Suburbs | 5 | 46% | 3.2 | 18,000 |
| 02 Affluent Greys, Rural Communities | 06 | Agricultural Villages, Home Based Workers | 4 | 37% | 1.3 | 7,000 |
| | 07 | Holiday Retreats, Older People, Home Based Workers | 4 | 35% | 0.4 | 2,000 |
| 03 Prosperous Pensioners, Retirement Areas | 08 | Home Owning Areas, Well-Off Older Residents | 4 | 37% | 1.0 | 6,000 |
| | 09 | Private Flats, Elderly People | 4 | 42% | 0.6 | 3,000 |
| 04 Affluent Executives, Family Areas | 10 | Affluent Working Families with Mortgages | 5 | 44% | 2.9 | 16,000 |
| | 11 | Affluent Working Couples with Mortgages, New Homes | 3 | 28% | 1.0 | 6,000 |
| | 12 | Transient Workforces, Living at their Place of Work | 2 | 18% | 0.2 | 1,000 |
| 05 Well-Off Workers, Family Areas | 13 | Home Owning Family Areas | 4 | 30% | 2.9 | 16,000 |
| | 14 | Home Owning Family Areas, Older Children | 3 | 29% | 3.7 | 21,000 |
| | 15 | Families with Mortgages, Younger Children | 3 | 25% | 2.6 | 14,000 |
| 06 Affluent Urbanites, Town and City Areas | 16 | Well-Off Town & City Areas | 5 | 64% | 1.1 | 6,000 |
| | 17 | Flats & Mortgages, Singles & Young Working Couples | 3 | 27% | 0.4 | 2,000 |
| | 18 | Furnished Flats & Bedsits, Younger Single People | 4 | 39% | 0.2 | 1,000 |

Table 31 (continued)

| Group | Type | ACORN description | Quintile | Period YPR(H) | Period cohort share % | Typical annual cohort |
|---|---|---|---|---|---|---|
| 07 Prosperous Professionals, Metropolitan Areas | 19 | Apartments, Young Professional Singles & Couples | 5 | 49% | 0.7 | 4,000 |
| | 20 | Gentrified Multi-Ethnic Areas | 4 | 38% | 0.8 | 4,000 |
| 08 Better-Off Executives, Inner City Areas | 21 | Prosperous Enclaves, Highly Qualified Executives | 5 | 61% | 0.4 | 2,000 |
| | 22 | Academic Centres, Students & Young Professionals | 4 | 34% | 0.3 | 2,000 |
| | 23 | Affluent City Centre Areas, Tenements & Flats | 4 | 40% | 0.1 | 1,000 |
| | 24 | Partially Gentrified Multi-Ethnic Areas | 4 | 30% | 0.6 | 4,000 |
| | 25 | Converted Flats & Bedsits, Single People | 3 | 29% | 0.7 | 4,000 |
| 09 Comfortable Middle Agers, Mature Home Owning Areas | 26 | Mature Established Home Owning Areas | 4 | 34% | 3.3 | 18,000 |
| | 27 | Rural Areas, Mixed Occupations | 4 | 31% | 3.3 | 19,000 |
| | 28 | Established Home Owning Areas | 3 | 28% | 4.6 | 26,000 |
| | 29 | Home Owning Areas, Council Tenants, Retired People | 4 | 35% | 2.4 | 13,000 |
| 10 Skilled Workers, Home Owning Areas | 30 | Established Home Owning Areas, Skilled Workers | 3 | 21% | 4.9 | 27,000 |
| | 31 | Home Owners in Older Properties, Younger Workers | 2 | 20% | 2.8 | 16,000 |
| | 32 | Home Owning Areas with Skilled Workers | 2 | 14% | 2.9 | 16,000 |
| 11 New Home Owners, Mature Communities | 33 | Council Areas, Some New Home Owners | 2 | 13% | 3.7 | 21,000 |
| | 34 | Mature Home Owning Areas, Skilled Workers | 2 | 21% | 2.8 | 16,000 |
| | 35 | Low Rise Estates, Older Workers, New Home Owners | 1 | 11% | 2.5 | 14,000 |
| | 36 | Home Owning Multi-Ethnic Areas, Young Families | 4 | 42% | 1.5 | 8,000 |
| | 37 | Multi-Occupied Town Centres, Mixed Occupations | 3 | 27% | 1.5 | 8,000 |
| | 38 | Multi-Ethnic Areas, White Collar Workers | 3 | 26% | 1.3 | 7,000 |

Table 31 (continued)

| Group | Type | ACORN description | Quintile | Period YPR(H) | Period cohort share % | Typical annual cohort |
|---|---|---|---|---|---|---|
| 13 Older People, Less Prosperous Areas | 39 | Home Owners, Small Council Flats, Single Pensioners | 2 | 18% | 1.4 | 8,000 |
| | 40 | Council Areas, Older People, Health Problems | 1 | 11% | 1.1 | 6,000 |
| 14 Council Estate Residents, Better-Off Homes | 41 | Better-Off Council Areas, New Home Owners | 1 | 12% | 2.8 | 15,000 |
| | 42 | Council Areas, Young Families, Some New Home Owners | 1 | 7% | 3.3 | 19,000 |
| | 43 | Council Areas, Young Families, Many Lone Parents | 1 | 9% | 1.5 | 9,000 |
| | 44 | Multi-Occupied Terraces, Multi-Ethnic Areas | 3 | 24% | 1.3 | 7,000 |
| | 45 | Low Rise Council Housing, Less Well-Off Families | 1 | 8% | 1.8 | 10,000 |
| | 46 | Council Areas, Residents with Health Problems | 1 | 6% | 1.9 | 11,000 |
| 15 Council Estate Residents, High Unemployment | 47 | Estates with High Unemployment | 2 | 19% | 1.0 | 6,000 |
| | 48 | Council Flats, Elderly People, Health Problems | 1 | 13% | 0.3 | 1,000 |
| | 49 | Council Flats, Very High Unemployment, Singles | 1 | 8% | 0.5 | 3,000 |
| 16 Council Estate Residents, Greatest Hardship | 50 | Council Areas, High Unemployment, Lone Parents | 1 | 5% | 2.3 | 13,000 |
| | 51 | Council Flats, Greatest Hardship, Many Lone Parents | 1 | 6% | 0.6 | 3,000 |
| 17 People in Multi-Ethnic, Low-Income Areas | 52 | Multi-Ethnic, Large Families, Overcrowding | 3 | 29% | 1.0 | 6,000 |
| | 53 | Multi-Ethnic, Severe Unemployment, Lone Parents | 2 | 17% | 1.2 | 7,000 |
| | 54 | Multi-Ethnic, High Unemployment, Overcrowding | 2 | 20% | 1.1 | 6,000 |

*Note: The ACORN types used here are the ones based on the 1991 Census (not reflecting any subsequent updating or the 2001 Census). The quintile column refers to the YPR(H) ranked quintile that each group is assigned to (see Figure 36). 'Typical annual cohort' is the mean cohort size of the seven cohorts and is rounded to the nearest 1,000.*

Table 32 **YPR(H) 1994-2000 cohorts for MOSAIC types (1991 Census version of MOSAIC)**

| Group | Type | MOSAIC description | Quintile | Period YPR(H) | Period cohort share % | Typical annual cohort |
|---|---|---|---|---|---|---|
| A High Income Families | 01 | Clever Capitalists | 5 | 65% | 1.4 | 8,000 |
| | 02 | Rising Materialists | 4 | 37% | 1.8 | 10,000 |
| | 03 | Corporate Careerists | 5 | 52% | 4.8 | 27,000 |
| | 04 | Ageing Professionals | 5 | 60% | 1.9 | 10,000 |
| | 05 | Small Time Business | 5 | 50% | 3.2 | 18,000 |
| B Suburban Semis | 06 | Green Belt Expansion | 4 | 38% | 4.4 | 24,000 |
| | 07 | Suburban Mock Tudor | 4 | 37% | 2.3 | 13,000 |
| | 08 | Pebble Dash Subtopia | 4 | 37% | 6.2 | 35,000 |
| C Blue Collar Owners | 09 | Affluent Blue Collar | 4 | 29% | 4.8 | 27,000 |
| | 10 | 30s Industrial Spec | 3 | 26% | 4.4 | 25,000 |
| | 11 | Lo-rise Right To Buy | 2 | 19% | 3.7 | 21,000 |
| | 12 | Smokestack Shiftwork | 2 | 15% | 3.0 | 17,000 |
| D Low Rise Council | 13 | Coalfield Legacy | 1 | 9% | 4.5 | 25,000 |
| | 14 | Better Off Council | 1 | 9% | 2.0 | 11,000 |
| | 15 | Low Rise Pensioners | 1 | 11% | 2.3 | 13,000 |
| | 16 | Low Rise Subsistence | 1 | 8% | 4.4 | 25,000 |
| | 17 | Peripheral Poverty | 1 | 6% | 3.2 | 18,000 |
| E Council Flats | 18 | Families In The Sky | 1 | 8% | 1.0 | 6,000 |
| | 19 | Victims Of Clearance | 1 | 8% | 0.1 | 0 |
| | 20 | Small Town Industry | 1 | 10% | 1.0 | 6,000 |
| | 21 | Mid Rise Overspill | 2 | 20% | 0.0 | 0 |
| | 22 | Flats For The Aged | 1 | 13% | 0.4 | 2,000 |
| | 23 | Inner City Towers | 2 | 17% | 1.3 | 7,000 |
| F Victorian Low Status | 24 | Bohemian Melting Pot | 3 | 26% | 2.5 | 14,000 |
| | 25 | Smartened Tenements | 4 | 37% | 0.0 | 0 |
| | 26 | Rootless Renters | 1 | 15% | 0.5 | 3,000 |
| | 27 | Asian Heartlands | 3 | 25% | 2.6 | 15,000 |
| | 28 | Depopulated Terraces | 2 | 19% | 0.6 | 3,000 |
| | 29 | Rejuvenated Terraces | 2 | 17% | 3.0 | 17,000 |

Table 32 (continued)

| Group | Type | MOSAIC description | Quintile | Period YPR(H) | Period cohort share % | Typical annual cohort |
|---|---|---|---|---|---|---|
| G Town Houses & Flats | 30 | Bijou Homemakers | 3 | 24% | 4.6 | 26,000 |
| | 31 | Market Town Mixture | 2 | 22% | 4.7 | 26,000 |
| | 32 | Town Centre Singles | 5 | 39% | 1.4 | 8,000 |
| H Stylish Singles | 33 | Bedsits & Shop Flats | 4 | 36% | 0.7 | 4,000 |
| | 34 | Studio Singles | 5 | 40% | 0.6 | 3,000 |
| | 35 | College & Communal | 4 | 33% | 0.3 | 1,000 |
| | 36 | Chattering Classes | 5 | 56% | 1.3 | 7,000 |
| I Independent Elders | 37 | Solo Pensioners | 2 | 20% | 0.2 | 1,000 |
| | 38 | High Spending Greys | 5 | 41% | 0.7 | 4,000 |
| | 39 | Aged Owner Occupiers | 4 | 30% | 1.7 | 10,000 |
| | 40 | Elderly In Own Flats | 4 | 37% | 0.2 | 1,000 |
| J Mortgaged Families | 41 | Brand New Areas | 3 | 27% | 0.2 | 1,000 |
| | 42 | Pre-Nuptial Owners | 2 | 20% | 0.6 | 4,000 |
| | 43 | Nestmaking Families | 3 | 25% | 1.1 | 6,000 |
| | 44 | Maturing Mortgagees | 3 | 25% | 3.8 | 21,000 |
| K Country Dwellers | 45 | Gentrified Villages | 5 | 53% | 1.5 | 8,000 |
| | 46 | Rural Retirement Mix | 4 | 31% | 0.4 | 2,000 |
| | 47 | Lowland Agribusiness | 5 | 40% | 2.0 | 11,000 |
| | 48 | Rural Disadvantage | 4 | 30% | 0.8 | 5,000 |
| | 49 | Tied/Tenant Farmers | 5 | 38% | 0.5 | 3,000 |
| | 50 | Upland & Small Farms | 5 | 39% | 1.1 | 6,000 |
| L Institutional Areas | 51 | Military Bases | 2 | 18% | 0.3 | 1,000 |
| | 52 | Non Private Housing | 5 | 47% | 0.1 | 0 |

*Note: The MOSAIC types used here are the ones based on the 1991 Census (not reflecting any subsequent updating or the 2001 Census). The quintile column refers to the YPR(H) ranked quintile that each group is assigned to (see Figure 37). 'Typical annual cohort' is the mean cohort size of the seven cohorts and is rounded to the nearest 1,000.*

Table 33 **YPR(H) 1994-2000 cohorts for Super Profile Clusters (1991 Census version)**

| 'Lifestyle' | 'Target market' | Super Profiles Description | Cluster | Quintile | Period YPR(H) | Period cohort share % | Typical annual cohort |
|---|---|---|---|---|---|---|---|
| A | 01 | Very High Income Professionals in Exclusive Areas | 001 | 5 | 66% | 2.3 | 15,000 |
| | | | 014 | 5 | 65% | 0.5 | 4,000 |
| | 04 | Mature Families with Large Detached properties in 'Stockbroker Belts' | 002 | 5 | 55% | 4.0 | 26,000 |
| | | | 004 | 5 | 47% | 1.5 | 10,000 |
| | 06 | Mature Families in Select Suburban Properties | 006 | 5 | 43% | 3.2 | 21,000 |
| B | 05 | Highly Qualified Professionals in Mixed Housing | 032 | 5 | 53% | 0.4 | 2,000 |
| | | | 035 | 5 | 47% | 0.6 | 4,000 |
| | 07 | Affluent Ageing Couples, Many in Purchased Property | 008 | 4 | 40% | 3.2 | 21,000 |
| | 12 | Older Professionals in Retirement Areas | 011 | 5 | 50% | 0.9 | 6,000 |
| | | | 021 | 5 | 45% | 1.4 | 9,000 |
| | | | 027 | 3 | 31% | 0.0 | 0 |
| | | | 030 | 4 | 38% | 0.3 | 2,000 |
| | 17 | Comfortably Well-Off Older Owner Occupiers | 023 | 4 | 35% | 1.6 | 10,000 |
| | 18 | Affluent Ageing Couples in Rural Areas | 009 | 4 | 41% | 1.3 | 9,000 |
| | | | 018 | 3 | 30% | 1.2 | 8,000 |
| C | 11 | White Collar Families in Owner Occupied Suburban Semis | 016 | 4 | 31% | 3.3 | 21,000 |
| | | | 020 | 3 | 28% | 4.1 | 26,000 |
| | | | 025 | 4 | 37% | 2.0 | 13,000 |
| | 14 | Mature White Collar Couples Established in Suburban Semis | 026 | 4 | 31% | 1.7 | 11,000 |
| | 16 | White Collar Couples in Mixed Suburban Housing | 031 | 3 | 30% | 1.2 | 7,000 |
| | | | 038 | 3 | 29% | 1.2 | 8,000 |
| D | 02 | Mortgaged Commuting Professionals, With Children, in Detached Properties | 003 | 5 | 45% | 2.7 | 17,000 |
| | 08 | Double Income Young Families in Select Properties | 019 | 4 | 34% | 1.4 | 9,000 |
| | | | 024 | 4 | 35% | 0.5 | 3,000 |
| | 09 | Military Families | 034 | 4 | 32% | 0.2 | 1,000 |
| | | | 067 | 2 | 21% | 0.1 | 1,000 |
| | 13 | Young Families in Small Semis and Terraces | 043 | 2 | 21% | 1.7 | 11,000 |

Table 33 (continued)

| 'Lifestyle' | 'Target market' | Super Profiles Description | Cluster | Quintile | Period YPR(H) | Period cohort share % | Typical annual cohort |
|---|---|---|---|---|---|---|---|
| | 15 | Young White Collar Families in Semis | 017 | 4 | 36% | 0.4 | 2,000 |
| | | | 028 | 3 | 25% | 1.2 | 8,000 |
| | | | 037 | 2 | 21% | 0.9 | 6,000 |
| | | | 042 | 2 | 21% | 0.6 | 4,000 |
| | 27 | Young Blue and White Collar Families in Semis and Terraces | 052 | 2 | 17% | 1.4 | 9,000 |
| | | | 053 | 2 | 16% | 1.1 | 7,000 |
| | | | 054 | 2 | 20% | 1.3 | 9,000 |
| | | | 057 | 2 | 15% | 0.4 | 2,000 |
| | | | 058 | 2 | 20% | 1.1 | 7,000 |
| | 28 | Young Families in Terraces – many Council | 065 | 1 | 12% | 1.2 | 8,000 |
| | | | 069 | 2 | 14% | 1.0 | 6,000 |
| | | | 083 | 1 | 12% | 0.4 | 3,000 |
| E | 03 | High Income, Young Professionals, Many Renting (mainly Greater London) | 045 | 5 | 52% | 0.4 | 3,000 |
| | | | 049 | 5 | 74% | 0.1 | 1,000 |
| | | | 103 | 3 | 26% | 0.1 | 0 |
| | 10 | Young Professionals in Multi-Racial Areas (mainly Greater London) | 061 | 5 | 45% | 0.2 | 2,000 |
| | | | 062 | 5 | 48% | 0.3 | 2,000 |
| | | | 070 | 3 | 28% | 0.6 | 4,000 |
| | | | 079 | 4 | 34% | 0.3 | 2,000 |
| | | | 087 | 4 | 39% | 0.2 | 1,000 |
| | 20 | Young White Collar Couples Buying Properties | 046 | 3 | 23% | 0.4 | 2,000 |
| | | | 059 | 3 | 27% | 0.1 | 0 |
| | | | 060 | 4 | 36% | 0.3 | 2,000 |
| | 21 | Young Families Buying Terraces in Multi-Racial Areas | 051 | 5 | 44% | 1.5 | 9,000 |
| | | | 095 | 3 | 27% | 0.3 | 2,000 |
| | | | 106 | 3 | 23% | 0.7 | 4,000 |
| | 29 | Young Families Renting Basic Accommodation in Multi-Racial Areas | 104 | 4 | 31% | 0.7 | 4,000 |
| | | | 116 | 4 | 32% | 0.0 | 0 |
| | | | 130 | 3 | 23% | 1.8 | 12,000 |
| | | | 136 | 3 | 29% | 1.0 | 6,000 |
| | | | 143 | 2 | 18% | 0.6 | 4,000 |
| | 30 | Young White Collar Singles, Sharing City Centre Accommodation | 096 | 5 | 46% | 0.0 | 0 |
| | | | 102 | 3 | 23% | 0.1 | 1,000 |

Table 33 (continued)

| 'Lifestyle' | 'Target market' | Super Profiles Description | Cluster | Quintile | Period YPR(H) | Period cohort share % | Typical annual cohort |
|---|---|---|---|---|---|---|---|
| F | 19 | Prosperous Farming Communities | 005 | 4 | 42% | 2.0 | 13,000 |
| | | | 007 | 4 | 38% | 0.1 | 0 |
| | 25 | Small Holders and Rural Workers (mainly in Scotland) | 012 | 4 | 39% | 0.2 | 1,000 |
| | | | 013 | 4 | 35% | 0.1 | 1,000 |
| | | | 015 | 4 | 34% | 0.1 | 0 |
| | | | 029 | 4 | 39% | 0.0 | 0 |
| G | 22 | Retired White Collar Workers in Owner Occupied Flats | 041 | 4 | 32% | 0.8 | 5,000 |
| | | | 048 | 4 | 42% | 0.4 | 3,000 |
| | | | 078 | 5 | 43% | 0.1 | 0 |
| | | | 090 | 3 | 31% | 0.1 | 1,000 |
| | 23 | Older Residents and Young Transient Singles, Many in Seaside Resorts | 066 | 4 | 36% | 0.3 | 2,000 |
| | | | 075 | 2 | 20% | 0.4 | 2,000 |
| | | | 076 | 2 | 20% | 0.1 | 0 |
| | | | 094 | 4 | 38% | 0.1 | 1,000 |
| | | | 121 | 3 | 23% | 0.2 | 1,000 |
| | 26 | Old and Young Buying Terraces and Flats | 033 | 3 | 27% | 0.0 | 0 |
| | | | 050 | 3 | 28% | 0.5 | 3,000 |
| | | | 068 | 3 | 23% | 0.3 | 2,000 |
| | | | 088 | 2 | 16% | 0.8 | 5,000 |
| | 32 | Retired Blue Collar Workers in Council Flats (mainly in Scotland) | 091 | 2 | 20% | 0.1 | 1,000 |
| | | | 114 | 2 | 17% | 0.3 | 2,000 |
| | | | 135 | 1 | 10% | 0.0 | 0 |
| H | 24 | Older White Collar Owner-Occupiers in Semis | 039 | 3 | 23% | 2.3 | 15,000 |
| | | | 040 | 3 | 24% | 1.7 | 11,000 |
| | | | 044 | 3 | 28% | 0.3 | 2,000 |
| | | | 047 | 2 | 19% | 0.5 | 3,000 |
| | | | 056 | 2 | 22% | 0.7 | 5,000 |
| | 33 | Older Workers Established in Semis and Terraces | 055 | 2 | 14% | 1.3 | 9,000 |
| | | | 063 | 1 | 13% | 0.2 | 1,000 |
| | | | 071 | 2 | 13% | 0.8 | 5,000 |
| | | | 072 | 1 | 8% | 0.2 | 1,000 |
| | | | 086 | 1 | 12% | 1.8 | 12,000 |
| | 36 | Older and Retired Blue Collar Workers in Small Council Properties | 077 | 1 | 13% | 0.3 | 2,000 |
| | | | 080 | 1 | 13% | 0.6 | 4,000 |
| | | | 097 | 1 | 12% | 0.7 | 5,000 |
| | | | 117 | 1 | 10% | 0.2 | 1,000 |
| | | | 120 | 1 | 12% | 0.6 | 4,000 |
| | | | 123 | 1 | 8% | 0.4 | 3,000 |

Table 33 (continued)

| 'Lifestyle' | 'Target market' | Super Profiles Description | Cluster | Quintile | Period YPR(H) | Period cohort share % | Typical annual cohort |
|---|---|---|---|---|---|---|---|
| I | 34 | Blue Collar Families in Council Properties | 082 | 2 | 16% | 0.7 | 5,000 |
| | | | 092 | 1 | 8% | 1.5 | 10,000 |
| | | | 098 | 1 | 13% | 0.5 | 4,000 |
| | | | 100 | 1 | 8% | 1.4 | 9,000 |
| | 35 | Young Blue Collar Families in Council Terraces | 105 | 1 | 9% | 0.3 | 2,000 |
| | | | 113 | 1 | 8% | 0.9 | 6,000 |
| | 37 | Manufacturing Workers in Terraced Housing | 085 | 2 | 14% | 1.1 | 7,000 |
| | | | 115 | 1 | 8% | 1.5 | 10,000 |
| J | 31 | Council Tenants in Multi-Racial Areas – High Unemployment | 101 | 3 | 25% | 0.4 | 2,000 |
| | | | 112 | 2 | 22% | 0.1 | 1,000 |
| | | | 127 | 2 | 18% | 0.4 | 3,000 |
| | | | 129 | 2 | 14% | 0.6 | 4,000 |
| | | | 140 | 2 | 19% | 0.8 | 6,000 |
| | 38 | Blue Collar Families in Council Properties – High Unemployment | 111 | 1 | 8% | 0.6 | 4,000 |
| | | | 119 | 1 | 11% | 0.2 | 1,000 |
| | | | 122 | 1 | 10% | 0.4 | 2,000 |
| | | | 128 | 1 | 7% | 0.9 | 6,000 |
| | | | 132 | 1 | 7% | 0.2 | 1,000 |
| | | | 133 | 1 | 5% | 1.6 | 10,000 |
| | | | 139 | 1 | 5% | 0.6 | 4,000 |
| | 39 | Young Families, Many Single Parents – High Unemployment | 144 | 1 | 4% | 0.3 | 2,000 |
| | | | 148 | 1 | 9% | 0.0 | 0 |
| | | | 150 | 1 | 4% | 0.9 | 6,000 |
| | | | 152 | 1 | 6% | 0.1 | 1,000 |
| | | | 153 | 2 | 15% | 0.2 | 1,000 |
| | 40 | Young Singles and Pensioners in Council Flats – High Unemployment | 137 | 1 | 11% | 0.1 | 1,000 |
| | | | 141 | 1 | 8% | 0.2 | 1,000 |
| | | | 149 | 1 | 6% | 0.1 | 1,000 |
| | | | 154 | 1 | 6% | 0.3 | 2,000 |
| | | | 155 | 1 | 9% | 0.1 | 1,000 |

*Note: The Super Profiles clusters used here are the ones based on the 1991 Census (not reflecting any subsequent updating). The quintile column refers to the YPR(H) ranked quintile that each group is assigned to (see Figure 38). 'Typical annual cohort' is the mean cohort size of the seven cohorts and is rounded to the nearest 1,000.*

# Annex M

## Glossary of key terms used in this report

**Absolute increase (decrease)** The change in the participation rate for a group expressed as the difference (in percentage points) between the two rates. For example, if the participation rate of a group increased from 10 per cent to 14 per cent then that would be an absolute increase of 4 percentage points. (See also 'Proportional increase'.)

**AFPD, All Fields Postcode Directory** This directory lists all current and extinct unit postcodes in the United Kingdom and assigns them to a range of administrative, health, electoral and other geographies. It is used in the mapping of the postcodes of entrants and child benefit claims to the range of geographies used in this report. (www.statistics.gov.uk/geography/afpd.asp)

**API, Age Participation Index** A government measure of young (aged 20 or under) participation in full-time undergraduate higher education (see Annex E).

**Child benefit** A government benefit paid to people bringing up children. It is paid for each child and is not means tested. Extracts from the child benefit data base are used in the small area cohort estimates (see Annex A).

**Cohort** This term is used in the report to describe a group of people of the same school-aligned year of age, that is, people who would have been in the same year in school. Cohorts are usually referenced by the year in which they would be 18 (typically their first opportunity to enter HE), so the English 2000 cohort are that group of people who would be aged 18 on 31 August 2000.

**ED, enumeration district** Small areas used in reporting the results of the 1991 Census. They are used as the smallest geographical unit for the cohort estimates in this report. There were around 100,000 English enumeration districts in the 1991 Census with, typically, four to six cohort members a year.

**Effective participation** This term is used to describe young participation that leads to a qualification rather than non-completion. It is estimated from a combination of the young participation and qualification rates (for an example see Table 4).

**Entrants** People starting a course of higher education. They are used in combination with the cohort estimates to give participation rates. The entrants used by this report are defined in Annex C.

**FEI, further education institution** An establishment mainly offering courses at further education level. These institutions may also offer higher education courses, and young entrants to these courses can be included in the participation measures in this report.

**FDS, First Destination Supplement** A data set resulting from a survey (collated by HESA) to investigate the activities of qualifiers in the January after the (academic) year in which they qualified. It is used in this report to estimate postgraduate participation rates (Annex K). For qualifiers from 2002-03 onwards the FDS has been replaced by the HESA Destination of Leavers from Higher Education (DLHE) survey.

**FES, Further Education Statistics** Student and course data collected by the Scottish Further Education Funding Council from further education institutions in Scotland. Contributes to the count of entrants in this report.

**First degree** A higher education qualification that typically takes three or more years of full-time study. Some longer courses lead to an enhanced degree with a postgraduate level component (such as a first degree with Qualified Teacher Status).

**Franchise arrangement** Sometimes an FEI may offer an HE course under a franchise arrangement with an HEI. In these cases the student records are usually returned to HESA by the HEI partner even though the student studies at the FEI. The YPR(C) measure combines HE students returned by FEIs with those on franchised courses returned by HEIs to give a measure of the total HE level study at FEIs (for example, see Table 1).

**GCSE, General Certificate of Secondary Education** A non-compulsory examination typically set in the final year of compulsory education. GCSE 5AC refers to a statistic used in the school performance tables which records the proportion of candidates that gain a set of GCSE results with five or more grades at C or above.

**Geodemographics** The grouping together of small areas (typically census enumeration districts or output areas) judged to be similar in nature (usually across a large number of variables) into a small number of non-contiguous geodemographic types. This report uses 1991 Census based versions of three commercial geodemographic groupings (ACORN, MOSAIC and Super Profiles). The quintile groupings based on ranking areas by 1991 Census statistics, such as the proportion of adults with an HE qualification, can also be thought of as simple geodemographic groups, albeit formed on a single variable.

**HE** Higher education.

**HEI** Higher education institution.

**HEIPR, Higher Education Initial Participation Rate** A government measure of participation based on entrants aged 17-30 (see Annex E).

**HESA, Higher Education Statistics Agency** Collects student, staff and finance data from UK HEIs. The student data sets are used in this report in the entrant counts. (www.hesa.ac.uk)

**HNC, Higher National Certificate** A higher education qualification that typically takes two years of part-time study (the Scottish equivalent is often studied full-time).

**HND, Higher National Diploma** A higher education qualification that typically takes two years of full-time study.

**IMD2000** The 2000 Index of Multiple Deprivation[19]. This is a set of government area statistics designed to measure the level of six different domains of deprivation both individually and in combination. It is available at ward and district level. A special ward-level measure of child poverty (estimated from benefit statistics) is also provided.

**Inequality ratio** In the quintile analysis the participation of the most advantaged quintile (the fifth quintile) divided by the participation of the most disadvantaged quintile (the first quintile) gives the inequality ratio. This simple statistic increases with the degree of relative participation inequality between groups. For England, typical values are between 3 and 6 depending on the unit of geography and the measure of disadvantage used.

**ISR, ILR: Individual Student Record, Individual Learner Record** This is a student-level data collection from further education institutions in England administered by the Learning and Skills Council (LSC). The ILR superseded the ISR for the 2002-03 academic year.

**LSC, Learning and Skills Council** The Learning and Skills Council is responsible for all post-16 education and training other than in universities. It administers the collection of the ISR/ILR data collections from English FEIs that are used in the count of entrants in this report. There are 47 local LSCs and their geographical areas of responsibility are sometimes used for educational area statistics (such as in POLAR). (www.lsc.gov.uk)

**MYE, mid-year estimates** The main set of annual national population estimates produced by the Office for National Statistics.

**OAs, output areas** The 1991 small area statistics for Scotland were released for output areas (rather than the enumeration districts used elsewhere). There were around 38,000 output areas for Scotland in 1991 with the consequence that their annual cohort sizes (typically around one) are much smaller than for enumeration districts.

**Participation (rate)** Literally 'taking part' in the activity of higher education. It is usually expressed as a participation rate which indicates what proportion of a group enter higher education. The exact interpretation of a participation rate depends on the construction of the participation measure (see Annex E). With the YPR statistic in this report the participation rate is the proportion of a young cohort who enter higher education at age 18 or 19.

**PG** Postgraduate.

**PGCE** Postgraduate Certificate of Education (a postgraduate qualification for teaching).

**PLACE, Participation of Local Areas Cohort Estimate** Shorthand for the method used in this report to estimate the cohort for small areas (see Annex A).

**POLAR, Participation of Local Areas** A web-based series of maps and tables showing the young participation rates of geographical areas from regions to wards (see Annex H).

**Postcode** An identifier of between five and seven characters (usually split as 2-4 characters, a space and 3 characters for readability) developed for the efficient sorting and delivery of post. A unit postcode typically relates to 10 to 20 households and so, through the All Fields Postcode Directory, can be used as a precise geographical locator for records that contain a postcode such as the HESA student record and the child benefit records. The components of the unit postcode – the postcode area (the characters of the postcode up to the first number), postcode district (the unit postcode minus the last 3 characters) and the postcode sector (the unit postcode minus the last two characters) – are sometimes used as geographical units.

**Proportional increase (decrease)** The change in the participation rate for a group expressed as the proportional difference (typically as a percentage) between the two values. For example, if the participation rate of a group increased from 10 per cent to 14 per cent then that would be a proportional increase of 40 per cent. (See also 'Absolute increase'.)

**Quintile analysis** A method used in this report to track changes in participation for different groups. Areas are ranked by a measure of advantage and then divided into five equal sized groups – quintiles. The participation rates of these quintiles can then be calculated and followed through time. The large size of the quintiles gives the results relevance (each group refers to the experience of a substantial share of the child population) and allows the detection of small annual changes.

**School-aligned** This term refers to the practice of aligning the reference date for age calculations to the dates used to determine the school year that a child is in. These dates vary between countries (see Annex C). For England school-aligned ages are calculated on 31 August. Aggregate data that uses age calculated on a different date (such as the 1991 Census) can be school-aligned by combining different ages in ratios suggested by birth statistics (see Annex A).

**Social class** A grouping of individuals based on their occupation (or, if children, their parents' occupation). This report uses a UCAS assignment of social class based on the self-reported parental occupation of young entrants collected through the UCAS application procedure. For the period covered by this report this has the groupings used for the 1991 Census:

| | |
|---|---|
| I | Professional, etc, occupations |
| II | Managerial and technical occupations |
| III(N) | Skilled non-manual occupations |
| III(M) | Skilled manual occupations |
| IV | Partly skilled occupations |
| V | Unskilled occupations. |

**UCAS, Universities and Colleges Admissions Service** UCAS is the central organisation that processes applications for full-time undergraduate courses at UK universities and colleges. Extracts from the UCAS admissions data base are used in this report to improve the postcode information for entrants and to give information on their entry pathway and characteristics (such as school type or social class) that would otherwise be unavailable. (www.ucas.com)

**UFC, Universities Funding Council** Before HEFCE most English HEIs were funded by either the UFC or the Polytechnics and Colleges Funding Council (PCFC). Sometimes these groups of HEIs are referred to as 'old' and 'new' universities respectively.

**Ward** A small unit of census and administrative geography, typically covering a named neighbourhood and with an annual cohort size of around 50, though sizes vary (see Figure 25). There are around 8,600 1991 Census wards in England.

**Young** In this report 'young' is taken as a school-aligned age of 18 or 19 (see Annex D).

**YPR (and variants), Young Participation Rate** This is the measure of participation used in this report. It is constructed by summing the entrants aged 18 from one academic year and the entrants aged 19 from the *following* academic year and then dividing this total by the cohort estimate. The resulting rate shows what proportion of a young cohort has entered HE by age 19. The report uses a number of variants of this measure, denoted by letters in brackets after YPR.

| | |
|---|---|
| YPR(H) | Participation in HEIs only. |
| YPR(HX) | Participation in HEIs only (extended entrant definition). |
| YPR(A) | Participation in all HE, whether in HEIs or FEIs. |
| YPR(AX) | Participation in all HE, whether in HEIs or FEIs (extended entrant definition). |
| YPR(F) | Participation in HE courses in FEIs returned on the FES and ISR data sets only. |
| YPR(C) | Participation in HE courses in FEIs (including franchised courses). |

# Annex N
## References

[1] 'The Influence of Neighbourhood Type on Participation: Interim Report', HEFCE, 1997.

[2] HEFCE 2004/12. HEFCE allocated £3.8 billon to HEIs and FEIs for teaching. This figure covers teaching at both undergraduate and postgraduate levels and also includes, for example, the widening participation funding.

[3] There are statistics that appear to be measuring trends in participation inequality, but are not really doing so. An example of this is the API by social class time series (for example, Figure 3.13 in Social Trends 34, Office for National Statistics). This is calculated by using the distribution of entrants with known social class from annual UCAS statistics, divided by the proportions of economically active adults by social class from the 1991 Census. Even for 1991 this would be likely to give the wrong group participation rates, since the social class distribution of young people will not be the same as that of economically active adults. The coding of the applicant-reported parental occupation to social class is a difficult and unreliable process, and differences from the categorisation of young people in the 1991 Census would be expected. The substantial (and often annually varying) proportion of young entrants where social class is not known are likely to be different from those where it is known. The trend aspect of the time series will be even less secure. The population by social class will be changing in unknown ways and the problematic relationships between the UCAS entrants and the population described above may also change with time. These uncertainties and biases are very likely to swamp any differential changes in participation rates by social classes.

[4] For example, see 'All Fields Postcode Directory: user guide' (2004 version at www.statistics.gov.uk/geography/afpd.asp [accessed 1 October 2004]) and Simpson, L and Yu, A 'Updated UK Area Masterfiles' at www.ccsr.ac.uk/research/afpd/finalreport.pdf [accessed 1 October 2004].

[5] The 2003 White Paper 'The future of higher education' (Department for Education and Skills, 2003) noted that '...postcode analysis is a crude measure of disadvantage. Pockets of deprivation are often overlooked in affluent areas' (6.24). No evidence is provided for this view; and work in this report (see Annex F) suggests that the applicability of such concerns depends critically on the geographical unit used. This work finds that units of the size of wards generally show good participation homogeneity. In particular, micro-areas of low participation are only rarely found within above average participation wards.

[6] There are around 1,400 young full-time first years from Northern Ireland on HE courses in UK FEIs, almost entirely at FEIs in Northern Ireland (special tabulation of 2001-02 first year enrolments from the Department for Employment and Learning Northern Ireland, DELNI). This suggests that participation in FEIs contributes around 6 percentage points to young participation for Northern Ireland, so that a YPR(A) style measure would be around 37 per cent for the 2000 cohort. In addition, there are approximately 270 young entrants a year from Northern Ireland who study in the Republic of Ireland (estimate from statistics from the Higher Education Authority in the Republic of Ireland and DELNI). If these were to be included they would add around another percentage point to total young participation.

[7] Note that the sum of the YPR(H) and YPR(F) is sometimes more than the YPR(A). This occurs because some entrants may have records in both the HESA and FEI data sets. This means that they are correctly counted separately in the YPR(H) and YPR(F) measures (that is, twice in total) but only once (again correctly) in the combined YPR(A) measure. Often this can occur when a student studies under a franchise arrangement and, erroneously, student records are returned by both the FEI and the parent HEI.

[8] The GCSE results are from table 5.5 in the DfES web-based resource 'Trends in Education and Skills', www.dfes.gov.uk/trends/index.cfm [accessed 26 October 2004].

[9] At this time HEFCE was required to ensure that the number of students in higher education did not exceed the total planned by the Government in the Budget. This was done through a Maximum Aggregate Student Number (MASN) that was set for each institution (see, for example, HEFCE 6/97). If institutions recruited so many students that their total number of students exceeded their MASN by a specified margin, then they would be penalised by a reduction in HEFCE grant.

[10] Alton, A and Massey, A, 'Date of birth and achievement in GCSE and GCE A-level', Educational Research, Volume 40, Number 1, Spring 1998.

[11] For English YPR(H) entrants from the 2000 cohort (where the ethnic group is known), 46 per cent of ethnic minority group entrants were from London compared to 10 per cent of white entrants. Of 2000 cohort YPR(H) entrants from London (again where the ethnic group is known), 46 per cent were from ethnic minority groups.

[12] There are two additional problems that are specific to calculating ethnic minority young participation rates. The first is that the estimation of single year of age small area populations by ethnic group is more difficult than estimating the young population as a whole. The second problem is that the student's self-reported ethnic group on the HESA record may record a different view of ethnicity to that held of the student by the student's parents. This is a problem, as it would typically be the parents who completed the ethnicity information for the child on the census (or official survey) that forms the basis of the population estimate. This means that ethnic group categories in the numerator and denominator classifications are potentially misaligned.

[13] The DfES research report 'Why the Difference? A Closer Look at Higher Education Minority Ethnic Students and Graduates' (DfES Research Report No. 552, 2004 www.dfes.gov.uk/research/data/uploadfiles/rr552.pdf [accessed 26 October 2004]) includes some estimates of a HEIPR style statistic by ethnic group (section 4.1.1 and Table A1, note that these are qualified by the difficulties of calculating such statistics). These suggest that the average HEIPR for ethnic minority groups is around 56 per cent, much higher than that for the white ethnic group (38 per cent). Splitting the aggregate ethnic minority participation estimate into individual ethnic groups (such as Black Caribbean) suggests a wide range of participation rates across ethnic minority groups, but all remain higher than the rate estimated for the white group.

[14] Putting all minority ethnic groups into a single classification is not ideal: often sub-groups (such as Black African and Chinese) can show very different participation characteristics. However, in this case, analysis of English YPR(H) entrants from the 1994 to 1999 cohorts shows that the white group has the lowest proportion of entrants at age 19 of any of the 1991 Census based ethnic groups recorded on the HESA student record.

[15] A different approach to this problem is to build statistical models of the participation rates of small areas through time by using a set of area characteristics. The quintile approach is used in this report as it gives an easily understood overview of the participation experiences of different groups of young people over the period. Future work will include such modelling to provide a more detailed picture of the area characteristics associated with young participation and how these associations might have changed over the period.

[16] Although the groups formed in the whole-period analyses are quintiles of the cohort for the whole period, they may not be so in any one particular year. In fact for most of the groupings we see that the proportion of the cohort living in low participation areas increases slightly and the proportion of the cohort living in high participation areas decreases slightly over the period. This is investigated in Annex B where it is found that the main influences on the group cohort size are the changes in the overall population, and that the relative changes are quite small: the largest is a fall from 20.7 per cent to 19.5 per cent of the share of the cohort living in the fifth quintile. Nevertheless, the concern remains that the educational deprivation experienced by those living in the first quintile is being diluted over time as its share of the cohort increases (and the advantage of the fifth quintile is being concentrated as its share decreases). This could potentially have a marginal effect on the group trends.

[17] This comparison between YPR(H) and YPR(A) quintiles does not pick up the effect of participation in HE courses franchised from HEIs (since they are included in the YPR(H) measure). Using YPR(H) ward quintiles (participation through FEIs is too sparse to allow ranking of wards on this measure directly) suggests that total participation through FEIs – the YPR(C) measure – is approximately 1 per cent for the first quintile and 2 per cent for the fifth quintile. This gives an inequality ratio of less than 2, comparable to the YPR(F) results for Scotland.

[18] This statistic is from Table 84 'Qualified manpower (10% sample), residents aged 18 and over', of the 1991 Census local base statistics (cell 4 divided by cell 1). See 'Local base statistics: cell numbering layouts', 1991 Census user guide number 24, Office of Population Censuses and Surveys.

[19] 'Measuring Multiple Deprivation at the Small Area Level, The Indices of Deprivation 2000', 2000, Regeneration Research Summary Number 37, Department of Environment, Transport and Regions. Can be accessed at www.renewal.net/Documents/RNET/Research/Measuringmultipledeprivation.pdf [accessed 1 October 2004].

[20] For example, The Neighbourhood Renewal Fund (see 'Neighbourhood Renewal Fund: Analysis and Assessment of Statements of Use 2001/2002', Neighbourhood Renewal Unit, Office of the Deputy Prime Minister, London.)

[21] ACORN is a geodemographic classifier owned by CACI Limited. This report uses the 54 group version based on the 1991 Census, not the current 56 group version based on the 2001 Census. The nature of the ACORN groups used is described in 'The ACORN User Guide' (CACI, 1997) and 'ACORN: the complete consumer classification' (CACI, 2001).

[22] MOSAIC is a geodemographic classifier owned by Experian Limited. This report uses a fixed 52 group version based on the 1991 Census, not the current version which has 61 groups and is based on the 2001 Census. The 52 group version is described in MOSAIC promotional literature from the 1990s (such as 'Great Britain MOSAIC', Experian Limited, 1998) but these are no longer readily available. A description of the groups used in this report can be found at www.census.ac.uk/cdu/Datasets/Experian_data/gbmosaic.pdf [accessed 28 October 2004].

[23] Super Profiles is a geodemographic classifier using 1991 Census data. It was developed in the early 1990s by Peter Brown and Peter Batey at the University of Liverpool and subsequently marketed by a series of companies. For details of its construction see 'Super Profile Technical Note 1' and 'Super Profile Technical Note 2' both Department of Civic Design, University of Liverpool (1994).

[24] Using the geodemographic types in this way can be thought of as equivalent to using some kind of 1991-based ranking of areas (since the types are formed by reference to the conditions recorded by the 1991 Census). As such, some diminution of the power of the classifier to partition advantaged and disadvantaged areas might be expected across the period, as some areas drift away from their nature in 1991. In turn, this drift might manifest itself as an apparent decline in participation inequality when using these groupings. However, any such effect must be trivial, as the per cohort participation rankings (which eliminate this effect, see Figure 29) and the IMD based rankings (Figures 34 and 35, which would be subject to the opposite trend of improving discrimination since they are based on conditions at the end of the period) show broadly the same participation patterns.

[25] This is less than the 160 clusters in the GB version of Super Profiles as some of the clusters are specific to Scotland.

[26] The Pupil Level Annual School Census (PLASC) which provides individualised records for children in state schools. HEFCE hopes to use this data set to better investigate the relationship between area participation rates and schools results in a future report.

[27] The school performance tables are published by the Department for Education and Skills and can be found at www.dfes.gov.uk/performancetables/index_archived.shtml [accessed 1 October 2004].

[28] For example, the 'Households below average income' (HBAI) time series from the Department for Work and Pensions (www.dwp.gov.uk/asd/hbai/hbai2001/contents.asp [accessed 1 October 2004]) records some falls in the proportion of children living in households with below average income, particularly for the later period covered by this report.

[29] Annex D in 'Supply and demand in higher education' (HEFCE 01/62) shows the degree of over-recruitment against the MASN by academic year and type of institution. Institutions previously funded by the Universities Funding Council (sometimes called 'old' universities) show particularly heavy over-recruitment for the 1997-98 and 1998-99 academic years. Table 2 in this report indicates that this type of university is preferred by those from advantaged backgrounds.

[30] These results use pre-calculated deprivation index values from the Census Dissemination Unit (CDU). Details of the calculation methods are given on the CDU web-site at www.census.ac.uk/cdu/Datasets/1991_Census_datasets/Area_Stats/Derived_data/Deprivation_scores/Pre_calculated_deprivation_scores.htm [accessed 18 May 2004].

[31] An overview of some of the properties of different deprivation indicators can be found in Lee P, Murray A and Gordon D 'Area measures of deprivation', Centre for Urban and Regional Studies, University of Birmingham, 1995.

[32] The number of children resident in each ward can vary substantially. In particular, low participation wards (often in cities) generally have larger child populations than high participation wards (often in more rural areas). Consequently the most deprived 20 per cent of wards will contain more than 20 per cent of children.

[33] Using associations between grouped data, such as areas or social class, to infer association at the individual level can be problematic if done carelessly. Haining notes: 'Ecological (or aggregation) bias is the difference between the estimates of relationships obtained using grouped data and those estimates obtained using individual-level data. The analyst who takes the estimate obtained from grouped data and uses it to infer an individual-level relationship without specifying the conditions under which the estimates are reasonable would be said to be guilty of committing the ecological fallacy.' [Haining, R 'Spatial data analysis: theory and practice', 2003, Cambridge University Press, Cambridge].

[34] For the young entrants covered by this report, the A-level point scores are the main way of assessing the strength of qualifications held on entry to higher education. The system for calculating points is quite complex – involving, for example, counting only once A-levels that are in very closely related subjects – and is typically provided by UCAS. In brief, the point score is the sum of the points for the three best A-levels, with each A-level being awarded 10 points for an 'A' grade and decreasing by 2 points per grade to reach 2 points for an 'E' grade. Odd numbers of points result from AS-levels (which are weighted at 0.5 of A-levels) or Scottish Highers. Thus 16 A-level points might typically represent a set of 'C', 'C' and 'D' grades at A-level.

[35] See Annex B in 'Funding for widening participation in higher education', HEFCE 2003/14.

[36] These methods were developed by HEFCE in the late 1990s to determine undergraduate non-qualification rates for UK HEIs. They form the basis of the progression measures in the Performance Indicator publications[41].

[37] For example, using the definitions in Table 4, entrants with 6 or 8 A-level points had a non-qualification rate of 22 per cent, those with BTEC or GNVQ level 3 had a rate of 27 per cent, and those with 30 A-level points had a rate of 3 per cent.

[38] An example of this approach is 'Schooling effects on higher education achievement', HEFCE 2003/32.

[39] The remaining 30 per cent comprise 7 per cent who are studying for a qualification other than first degree, 10 per cent who have left HE without a qualification, 8 per cent who are still studying in HE after four years, 3 per cent who have gained a qualification outside of these definitions (for example, from part-time study) and around 2 per cent who are excluded from the analysis due to differences between the participation and progression entrant definitions.

[40] In this case 'young' does not take its usual meaning of entry at ages 18 or 19 but rather entry to an undergraduate course at ages 18 or 19 which then leads to PG study, either as part of the course or within a year of qualification. Thus the 'young' entrants to the postgraduate study will typically be aged between 21 and 23.

[41] 'Performance indicators in higher education', HEFCE 99/66 and annually until 2003.(www.hefce.ac.uk/pi)

[42] Kilbey, T and Scott, A, 'Can patient registers give an improved measure of internal migration in England and Wales?', Population Trends 96, 1999, Office for National Statistics.

[43] Office for National Statistics, 'Making a population estimate in England and Wales: update to occasional paper 37', Version 4 October 2002, www.statistics.gov.uk/downloads/theme_population/pap37v4.pdf [accessed 1 October 2004].

[44] The Office for National Statistics has a project – Small Area Population Estimates, SAPE, (www.statistics.gov.uk/sape [accessed 1 October 2004]) – that aims to provide estimates for geographical areas smaller than local authorities. The project started in 2000 and has considered a range of administrative data sources (including child benefit records) but has not yet (October 2004) produced any estimates at ward level.

[45] 'Child benefit quarterly statistics', Inland Revenue. Published quarterly and available at www.inlandrevenue.gov.uk/stats/child_benefit/quarterly.htm [accessed 26 October 2004].

[46] The exact take-up figure for child benefit is not known. Comparisons of child benefit counts against other sources, for example the census, are generally taken as

testing the reliability of (for example) the census rather than the child benefit data. The small differences that are found are quite possibly due to differences in definition but are sometimes interpreted as child benefit take-up being around 98 per cent (Hansard, House of Commons Written Answers for 8 December 2003 vol415 c330w question number 141839).

47 Hansard, House of Commons Written Answers for 7 July 1998 c440 question number 49558.

48 'All Fields Postcode Directory: user guide', Office for National Statistics, www.statistics.gov.uk/geography/afpd.asp.

49 The 1991 small area statistics used in this report were obtained through the census services (see www.census.ac.uk/cdu) provided as part of the JISC-supported Manchester Information & Associated Services (MIMAS). These data are presented as a series of fixed tabulations for small areas. The table layouts for the small area statistics (enumeration districts and, in Scotland, output areas) are given in 'Small area statistics: cell numbering layouts', 1991 Census user guide number 25, Office of Population Censuses and Surveys.

50 'Birth statistics: England and Wales', Series FM1. Annual publication, Office for National Statistics.

51 The child benefit counts are further advantaged in the exploratory models because, like the dependent variable count, they are referenced by postcode. This means that any misallocation of postcodes to EDs in the All Fields Postcode Directory would flatter the contribution of the child benefit 15 year-olds counts over census ED counts, as these misallocations would be reflected in both counts derived from child benefit.

52 The ONS mid-year estimates for the 1990s were revised (more than once) in the light of the 2001 Census. This report uses the revisions issued on 27 February 2003, www.statistics.gov.uk/pdfdir/rpe0203.pdf [accessed 1 June 2004].

53 The school rolls 1991, 1992 are from 'Statistics of education, schools' series (1991, 1992, Department for Education, ISSN 0266 271X). The school rolls for 1993 to 1998 are derived from the school performance tables[27].

54 The Government Actuary's Department population projections can be found on its web-site. (www.gad.gov.uk)

55 A description of the FES1 and FES2 collections can be found in 'Further Education Statistics (FES) data collection – notes and guidance for completion: academic year 2000-01', Scottish Further Education Funding Council, available at www.sfefc.ac.uk/about_us/departments/statistics/guidance_notes/0001/fes/fes0001.html [accessed 4 October 2004].

56 The qualifications not taken as HE for this report are those coded EA, EB, EC, ED and EE which are advanced diplomas, certificates and modules (some not leading to qualifications) that are not coded elsewhere in the classification; see Code List A55.

[57] The Royal Agricultural College and the Conservatoire for Dance and Drama are taken as new institutions to both the YPR(H) and YPR(A) measures. The Cumbria Institute of the Arts, UHI Millennium Institution, The Arts Institute at Bournemouth and Bell College are further taken as new institutions to the YPR(H) measure only.

[58] These entrants are 'approximate' as they are defined by using the recorded course starting date, reinforced by checking that the student has not been on a full-time first degree course in the preceding two years (rather than never having been on an HE course before). In particular, this means that someone who left an HE course when they were 19 and started another when they were 24 would be counted as an entrant under this definition, so that Figure 76 will overstate the proportion of new entrants in the older age bands.

[59] 'The Age Participation Index for Scotland 2002/03', 2 September 2004, Statistics Publication Notice, Lifelong Learning Series, Scottish Executive. Also available at www.scotland.gov.uk/stats/bulletins/00361-00.asp [accessed 18 October 2004].

[60] 'Higher Education Age Participation Index NI', Statistical Fact Sheet, Department for Employment and Learning, Northern Ireland (also at www.delni.gov.uk/docs/select/3HEAPI.pdf [accessed 18 October 2004]).

[61] Some of these definitions are discussed in 'The Influence of Neighbourhood Type on Participation'[1].

[62] 'Review of the Initial Entry Rate into Higher Education', National Statistics Quality Review Series Report No.24, Department for Education and Skills, 2003. www.statistics.gov.uk/methods_quality/quality_review/downloads/IER_Report.pdf [accessed 19 October 2004]

[63] This is a simplification: in practice the grouping of children, within families and schools for example, will mean that this chance is not truly independent.

[64] These simulations can only show what proportion of EDs would be expected, under discrete binomial assumptions, to be assigned to non-adjacent ward participation quintiles by chance if the underlying propensity to participate was completely uniform (that is, perfectly homogeneous wards). Observed proportions close to these simulated values are consistent with the ward being near uniform but do not demonstrate that that is the case. In addition, the power of the comparison depends on the combined cohort size. For example, using a single cohort leads to greater proportional random variability so that there is less potential to detect underlying heterogeneity. This analysis uses all three child benefit denominated cohorts; if more were available then it is possible that the simulated proportions in non-adjacent quintiles would fall more than the actual distribution, leading to a slightly higher estimate of heterogeneity. These simulations highlight that, even if wards were perfectly uniform, a range of micro-area rates within the ward would be expected but, because the exact results are dependent on the cohort size used, they should be taken only as indications of the likely degree of heterogeneity.

[65] Another way of looking at participation heterogeneity, which is of interest to those trying to target low participation areas, is to ask what proportion of micro-areas with 'true' (as opposed to observed) low participation are concealed within high participation wards. This is harder to assess because of the small cohort size of EDs. The simulations (based on three cohorts) suggest that if 'true' very low participation micro-areas were to be found only within very low participation wards (that is, complete participation homogeneity) then random fluctuations and integer effects would lead to around 4 per cent of observed low participation micro-areas being found within fourth and fifth quintile wards. The real distribution for these cohorts shows that around 10 per cent of very low participation micro-areas are found within fourth and fifth quintile wards. This suggests that, for these simulations based on three cohorts, although there are some genuine low participation micro-areas concealed within high participation areas they are relatively rare, perhaps accounting for 1 in 20 of the young population observed to be in low participation micro-areas.

[66] For example, Harris, R and Longley, P 'Creating small area measures of urban deprivation', Environment and Planning A, 2002, volume 34, pages 1073-1093.

[67] 'Impact on student demand of tuition fees and changes in higher education student support', a literature review for HEFCE by Nigel Brown and Tony Clark, Nigel Brown Associates (April 2003), paragraph 86. (www.hefce.ac.uk/pubs/rdreports/2003/rd06_03)

[68] This review uses the term 'lowest socio-economic groups' to refer to social classes IIIM, IV and V.

[69] 'Attitudes to debt: School leavers' and further education students' attitudes to debt and their impact on participation in higher education', Claire Callender, 2003, Universities UK, paragraph 8.2.2. This reports that those with anti-debt attitudes were disproportionately from lower social classes. In 'Attitudes to debt' these are defined as the lower supervisory and technical, and semi-routine and routine groups. (bookshop.universitiesuk.ac.uk/downloads/studentdebt.pdf [accessed 28 September 2004])

[70] 'Econometric analysis of the demand for higher education', Vernon Gayle, Damon Berridge, Richard B. Davies, 2003, DfES Research Report 472. (www.dfes.gov.uk/research/data/uploadfiles/RR472.pdf).

[71] 'Changing student finances: income, expenditure and the take-up of student loans among full and part-time higher education students in 1998/9', Claire Callender and Martin Kemp 2000, DfES research report 213, executive summary and section 6.3 (www.dfes.gov.uk/research/data/uploadfiles/RR213.PDF). This survey found that 20 per cent of 1998-99 students where a parental contribution to the fee had been assessed failed to receive the full assessed contribution to their fee from their parents. Also, between 1995-96 and 1998-99 the proportion of students who failed to receive their full assessed parental contribution for maintenance doubled to 30 per cent.

[72] See page 21 in 'Attitudes to debt'[69].

[73] '2002/03 Student Income and Expenditure Survey: Students' Income, Expenditure and Debt in 2002/03 and changes since 1998/99', Claire Callender and David Wilkinson, 2003, DfES research report 487, tables 4.12 (loans by whether fees paid) and 4.15 (increase in debt between 1998-99 and 2002-03). (www.dfes.gov.uk/research/data/uploadfiles/RR487.pdf)

[74] 'Debt, term-time working and attainment.' Ruth Van Dyke, Brenda Little and Claire Callender, Universities UK publication (www.universitiesuk.ac.uk, forthcoming). This study found that students from less advantaged backgrounds were more likely to work during term-time. 'Less advantaged' being characterised either by coming from a 'routine or manual occupation' background or by the parents not having to pay a fee. These students were also more likely to cite the inability of their families to help them financially as the reason for working during term time.

[75] Unpublished analysis by DfES using the HE module of the YCS found that over 60 per cent of young people intending to apply to HE made the decision to do so before their GCSE results.

[76] Callender C, and Jackson J (forthcoming), 'Does the fear of debt deter students from higher education?' Journal of Social Policy.

[77] From data supplied by the DfES from sweep 1 of cohort 10 of the YCS, it is found that the mean (and variance) of the number of GCSE A*-C grades is 5.8 (6.0) for GNVQ students and 8.5 (4.3) for A-level students (students recorded as having no GCSEs excluded).

[78] For instance, the Aimhigher:Partnerships for Progression programme (a set of activities designed to encourage young people from disadvantaged backgrounds to enter HE) has used area participation rates and populations from POLAR to assist in some resource allocation processes.

[79] This differs from the earlier 75 per cent figure as here the most deprived 20 per cent of wards in or not in London are being compared, rather than the regional components of the most deprived 20 per cent of wards for England.

[80] 'First destinations of students leaving higher education institutions', annual publication, Higher Education Statistics Agency, Cheltenham. The analysis of progression to postgraduate study in this report uses qualifiers from the 1997-98, 1998-99 and 1999-2000 surveys.

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