

Town & Country Planning

Tomorrow Series Paper 10

new and higher projections of future population in england – a first look at their implications for households and housing

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part 1: summary and highlights

1.1 In 2007 the Office for National Statistics (ONS) published new and much higher projections of the future population of the United Kingdom and its constituent countries. Since then, it has issued population projections for the Government Office regions of England and sub-regional areas.

1.2 These projections suggest that population in England in 2026 will be almost 3 million higher than had been projected in 2004 – an upward revision of some 5 per cent. This revision also suggests that, proportionately, rather more people will be living in the Midlands and the North.

1.3 Given the magnitude of these upward revisions, it is useful to review their implications for housing and households without waiting for the new official household projections expected to be produced by the Department for Communities and Local Government (DCLG) at the end of 2008. The results suggest that the numbers of households will rise by some 785,000 more than the current estimate, which uses the 2004-based population projection.

1.4 These figures suggest that Government targets to increase the annual rate of additions to the housing stock to 240,000 per annum by 2016 and to add 3 million additional units by 2020 fall significantly short of requirements.

The 2006-based population projections

1.5 The 2006-based projection of population for England in 2026, at 58.7 million, is some 2.86 million higher than the 2004-based estimate. This implies an increase of 7.9 million over the 20 years from 2006, which is considerably more than in any previous 20-year period.

1.6 The reasons for the increase are threefold:

- lower death rates;
- higher net immigration rates (but with migration between the UK and the European Union 'accession' countries in balance from 2014-15); and

- higher fertility, both because of evidence that past low numbers of births reflected the postponement of child-bearing and because of the number of women migrants of child-bearing age.

1.7 About one half of the upward revision in the projected population in 2026 is among those under 20, and so does not lead to an increase in the number of housing units required. On the other hand, the impact of higher migration on the number of households comes mainly from those aged between 20 and 44, whose projected number in 2026 has been raised by nearly 1.1 million. This immediately affects total household numbers.

1.8 Out of the projected national total upward revision of 1.4 million for the population aged 20 and over (the household-forming population), only 600,000 are in the South, with – in contrast to previous experience – 800,000 in the North and the Midlands.

Implications for the household projections

1.9 The projected number of households in future years can be estimated from the detail of current household projections applied to the 2006-based population projections. Such a calculation may not be exactly the same as that to be published by the DCLG. But the results of the calculation are sufficiently close to provide a starting point for discussing the housing, planning and policy implications of these new and much higher population projections. They also provide a starting point for raising queries about the accuracy of these population projections and their translation into future numbers of households.

1.10 To assess the effect of the upward revision of population on the projected number of households, we use the details from the 2004-based household

projections to estimate household representatives by sex, age, and marital status across each of 15 age groups and combine them with the population projections. The two estimates are compared in Table 1.1.

1.11 Between 2006 and 2026 the upward revision in the number of households generates almost 40,000 additional households per annum – resulting in an annual increase of 260,000 households each year and a total of 26.75 million households in 2026. These projections suggest considerably higher growth in the numbers of households than has been experienced over past decades.

1.12 Regional household projections made in the same way suggest that nearly two-thirds of the upward revision to the total number of households in 2026 will be located in the Midlands and the North. This implies an increase of 1,650,000 households in the three regions of the North of England between 2001 and 2026, with almost three-quarters of a million in Yorkshire and Humber alone.

Uncertainties about these projections

1.13 There are three main reasons why the national projections look less than robust:

- Household formation between 2001 and 2006 has been considerably lower than projected.
- At least in their early years in the country, migrants tend to form fewer households than equivalent indigenous households.
- Net migration may itself be an overestimate, because although the last few years have seen very rapid rises, the evidence is not yet in on how many of these households will remain in the country in the longer term.

Table 1.1
2004-based and 2006-based household projections for England

	2004-based (official)	2006-based (not official) (authors' estimate)	Upward revision
	thousands		
2001	20,523	20,523	–
2006	21,519	21,532	+13
2011	22,646	22,804	+158
2016	23,837	24,137	+300
2021	24,973	25,569	+596
2026	25,975	26,761	+786
Percentage increase 2001-26	26.6	30.4	
Percentage increase 2006-26	20.7	24.3	

Table 1.2**Net increase in households in England between 2001 and 2006 as estimated through the 'stock and households identities'**

(i)	Net increase in dwellings	782,000
(ii)	Reduction in vacant dwellings	62,000
(iii)	Increase in dwellings used as second homes	64,000
(iv)	Increase in dwellings used as main residences = (i) plus (ii) minus (iii)	780,000
(v)	Increase in shared dwellings	27,000
(vi)	Increase in singly occupied main residences = (iv) minus (v)	753,000
(vii)	Increase in households in non-shared dwellings = (vi) (by definition)	753,000
(viii)	Increase in households in shared dwellings	85,000
(ix)	Total increase in households = (vii) plus (viii)	838,000

Table 1.3**Regional estimates of actual increase in households between 2001 and 2006 compared with projections**

	Estimated actual increase	Projected increase	Difference
	thousands		per cent
North East	22	37	41
North West	92	107	14
Yorkshire and the Humber	84	116	28
East Midlands	88	115	23
West Midlands	62	86	28
East of England	104	138	25
London	123	138	11
South East	145	152	5
South West	116	122	5
England	838	1,009	17

Minor discrepancies in totals are due to rounding

A direct estimate of the increase in households 2001-26

1.14 To make a direct assessment of household growth we make the reasonable assumption that households must live somewhere. We can therefore specify three 'stock and households identities':

- Total stock *minus* second homes *minus* vacant dwellings *minus* shared dwellings *equals* singly occupied main residences.
- Total households *minus* those living in shared dwellings *equals* households in dwellings that are not shared.
- Households in dwellings that are not shared *equals* singly occupied main residences.

Thus if we can estimate new building and changes in the number of second homes, vacant units, shared dwellings and shared households, we can estimate the increase in the number of households. Results are set out below – but they must be

treated with caution because of uncertainties in the data.

1.15 Table 1.2 suggests that there has been considerable tightening in the housing system between 2001 and 2006, reflected in declining vacancies and increases in sharing. This has allowed households to increase more rapidly than the housing stock. Even so, the evidence points to a total increase in households of around 840,000, compared with over 1 million based on 2006-based population projections and slightly under 1 million from the 2004-based household projections.

1.16 It is possible to make similar direct estimates at the regional level. These are shown in Table 1.3 and suggest that the projection overestimates the actual growth in households in all regions. Surprisingly, the big differences are concentrated in the Midlands and the North, where the estimated numbers of households may anyway be too high as the private sector vacancy figures may well be underestimated.

1.17 The regional analysis therefore suggests that the number of households is being constrained more by lack of demand than by supply. In the more pressured areas of the South the direct estimate and projected household numbers are much closer to one another, implying a considerable tightening of the market, including increased sharing – but also suggesting that households have found it possible to form.

1.18 The picture in Table 1.3 could be a short-run effect arising because house prices have risen faster than incomes to degree way above the past trends implicit in the household projections. But there are other possible explanations that would have longer-term implications – for instance a slower increase in middle-aged one-person households, or the effect of lower household formation by immigrants. Moreover, the regional evidence suggests that the observed lower level of household formation would not necessarily have been fully offset by greater supply response.

Uncertainties about immigration

1.19 Evidence from the Labour Force Survey shows very clearly that recent immigrants have lower than average propensities to form their own homes, although that propensity tends towards indigenous levels over the years. The impact of migration on household formation therefore depends not only on total net immigration, but also on ‘turnover’ and exactly who stays in the country and who leaves. The major differences are concentrated among those who have been in the country for less than ten years. Taking this effect into account would reduce the projected number of households by about 30,000 a year.

1.20 Long-term net immigration may itself have been overestimated, because there has been such a rapid rise in the last few years and because the extent to which these particular groups will remain can only be guessed at. Given potential changes in the UK’s exchange rate and competitive position, the chances are that more immigrants will return home and the actual outcome will turn out to be lower, but there is as yet no evidence on which to base a re-assessment.

Implications for homebuilding

1.21 The Government’s targets for required additions to the housing stock were set on the basis of the 2004-based household projections, as well as on what was regarded as feasible in the longer term. They include achieving 240,000 net additions to the housing stock per annum by 2016 and 3 million units by 2020.

1.22 The 2006-based household projections, taken at face value, would suggest that the target figure would have to rise to around 275,000-280,000 per annum if identified housing requirements were to be met. If in addition, as the National Housing and Planning Advice Unit (NHPAU) advises, there should be higher levels of output to restrain long-term increases in real house prices, the requirement would rise to around 300,000 per annum.

1.23 Even taking account of the potential overestimates in household numbers that we have identified, both national and regional requirements are likely to be significantly above current targets. More practically, they are far above what it is likely to prove possible to provide.

Overview

1.24 The 2006 population projections are far higher than those underlying the 2004-based household projections. As a result the projected numbers of households must also rise.

1.25 The implied upward revision in households is of the order of 785,000 over the 25-year period 2001-26. Were these projections to be correct they would imply the need for much higher levels of new building than currently envisaged – of the order of 275,000-280,000 – in order to meet resultant housing requirements. Still higher levels would be necessary to restrain the projected long-term rise of house prices.

1.26 On the other hand, evidence suggests that both the 2004-based and 2006-based projections may well overestimate the growth in the number of households, because:

- A direct estimate of household formation suggests that current household projections overestimate actual household formation between 2001 and 2006, by between 35,000 and 40,000 households per annum.
- The official household projections do not take account of the reality of lower household formation by recent immigrants. This is particularly important because of the high rates of immigration assumed. Taking account of lower rates of household formation in the early years could reduce out-turn numbers by as much as 30,000 per annum.
- Net migration may run at lower rates in the longer term, especially if UK employment opportunities worsen so that more migrants return home.

1.27 Even if the 2006-based population projections are qualified in the ways we suggest, the figures point to the need for an increase in the number of homes well above current Government targets, both nationally and, increasingly, across almost all regions.

part 2: the population projections in detail and future increases in households

2006-based projections of the population of England and the regions

2.1 The 2006-based population projections assume higher net inward migration, more births and fewer deaths than did the 2004-based projections which they superseded. For migration, the 'headline' figure for average net inward migration to the United Kingdom in the medium to long term is 190,000 a year, in place of the 145,000 a year in the 2004-based projections. From 2014-15 when the figure of 190,000 a year applies, migration from the European Union 'accession' countries is assumed to be in balance. Net inward migration is assumed to run at an average of 171,500 a year. The assumptions about fertility (average numbers of births annually) have been revised upwards, in the light of evidence that previous low numbers of births were to a greater extent due to postponement of child-bearing rather than long-term lower average numbers of births per woman. Higher inward migration also results in more births, because a considerable number of inward migrants are women of child-bearing age. Further downward revisions have been made to the assumptions about mortality (death rates).

2.2 Regional population projections take on board the national assumptions about future birth rates and death rates. Assumptions are required also about where the immigrants will live, and particularly how many will move out of London, where they will go, and how quickly. Migration between regions within England is projected from past trends, which are run on into the future. The assumptions about inter-regional migration were revised in the 2006-based regional projection. Table 2.1 shows the 2004-based and 2006-based population projections to 2026. Strictly speaking, in the 2006-based projections the figures for 2006 are mid-year estimates.

2.3 The 2006-based population projected puts the population of England 2,859,000 higher in 2026 than did the 2004-based projection. The 2006-based projection puts the increase in the population at 7,307,000 between 2001 and 2021, and at 7,919,000 between 2006 and 2026. Both are greater than in any previous 20-year period in English history. The previous highest was 7.1 million (for England and Wales) between 1891 and 1911.

2.4 The age distribution of the population is very important for the number of additional households that might be expected to form. The age distribution of the projected increase in the national population is shown in Table 2.2, for 2006-21 as well as for

Table 2.1
Projections of the population of England and the regions, 2006-26

	2001 Census based	2004-based projections			2006-based projections		
	thousands	2006	2016	2026	2006	2016	2026
England	49,450	50,714	53,276	55,823	50,763	54,724	58,682
North East	2,540	2,543	2,549	2,562	2,556	2,638	2,730
North West	6,773	6,863	7,066	7,276	6,853	7,193	7,546
Yorkshire and the Humber	4,977	5,125	5,397	5,664	5,142	5,621	6,101
East Midlands	4,190	4,354	4,637	4,910	4,364	4,825	5,286
West Midlands	5,281	5,362	5,522	5,692	5,367	5,663	5,977
East of England	5,400	5,604	6,014	6,412	5,607	6,180	6,747
London	7,322	7,512	7,946	8,344	7,512	8,114	8,633
South East	8,023	8,228	8,661	9,111	8,238	8,871	9,523
South West	4,944	5,122	5,484	5,851	5,124	5,620	6,139

Regional figures do not all add to England totals owing to rounding

Source: Government Actuary's Department (2004-based national projection) and Office for National Statistics

Table 2.2**Analysis by age of the projected increase in the population of England**

Age	2006-21			2006-26		
	Males	Females	Total	Males	Females	Total
	thousands			thousands		
Under 15	594	587	1,181	648	639	1,287
15-19	-155	-148	-303	26	31	57
20-29	328	208	536	243	130	373
30-44	211	76	287	541	326	867
45-64	803	833	1,636	780	813	1,593
65-74	635	659	1,294	697	707	1,404
75 and over	804	557	1,361	1,271	1,066	2,337
Total	3,220	2,774	5,994	4,207	3,712	7,919

Minor discrepancies in totals are due to rounding

Source: Office for National Statistics

2006-26. The period 2006-21 is shown because this time span appears in policy contexts, notably the target of 3 million more homes by 2020.

2.5 Worthy of note is that one-fifth of the projected population increase between 2006 and 2021, and one-sixth of the increase between 2006 and 2026, consists of children under age 15, who cannot affect the number of households until well beyond 2026. At the other end of the age distribution, 3.7 million of the projected increase in the population between 2006 and 2026 consists of men and women aged 65 and over – i.e. 47 per cent of the projected total increase, and 57 per cent of the increase in the adult population. Comparing the 2004 constant mortality projection (i.e. assuming no further fall in death rate) with the principal projection, with allowance for the downward revision to mortality assumptions in the 2006-based projections (para. 2.1 above), indicates that about 1.7 million of the projected increase in the population aged 65 and over between 2006 and 2026 is due to the projected fall in age-specific death rates. The other 2 million is

the result of the interaction between the passage of time, the profile of births year by year, and past reductions in death rates. Persons aged 65 and over in 2006 were born in 1941 or earlier; persons aged 65 and over in 2026 were born in 1961 or earlier. Persons aged 65 and over in 2026 therefore include those born in the so-called post-war ‘bulge’ of births in 1946, 1947 and 1948, and also include the first years of the ‘baby boom’, which in England began in 1956 and reached its peak in 1964.

2.6 How much of the projected increase in the England population total between 2006 and 2026 that is shown by the 2006-based projections is the result of changes since the 2004-based projections in the assumptions about births, deaths and migration is shown in Table 2.3.

2.7 The upward revision to the projection of the population aged under 15 and 15-19 is mainly the result of the higher assumptions about fertility rates, although births to the additional immigrants contribute. The effect of higher assumed migration is seen in the higher projections of the population in the 20-29 and 30-44 age groups. Lower mortality assumptions explain the upward revision of almost a quarter of a million in the population aged 75 and over. For the implications of the 2006-based projections of the number of households in future years, it is the upward revision to the projections of the population aged 20 and over that is significant. Only 0.5 per cent of all households have ‘household representatives’ (see para. 2.10 below) aged under 20. The projected population in 2026 aged 20 and over is 1,404,000 higher in the 2006-based projection than in the 2004-based projection, a little less than one-half of the total difference between them.

2.8 The proportion of the total difference between the 2004-based and 2006-based population projections that is in the 20 and over groups is very important in considering what the difference between the regional population projections implies for regional household totals. For reasons of space a

Table 2.3**Difference between the 2004-based and 2006-based projections of the population of England in 2026**

Age	Males	Females	Total
	thousands		
Under 15	569	538	1,107
15-19	183	165	348
20-29	166	116	282
30-44	407	372	779
45-64	36	67	103
65-74	4	-11	-7
75 and over	137	110	247
Total	1,504	1,356	2,859

Minor discrepancies in totals are due to rounding

Source: Government Actuary’s Department for the 2004-based projections; ONS for the the 2006-based projections

region-by-region analysis that would be comparable to Table 2.3 for England is not shown here. A simpler comparison, which shows the projected increase in the population aged under 20 and 20 and over is shown in Table 2.4. Aggregation for the North, Midlands, and South is also shown.

2.9 How much of the difference between the 2004-based and 2006-based projections of the population in 2026 is in the 20 and over age group varies very considerably between regions, from 60 per cent in Yorkshire and Humber and in the East Midlands, to 33 per cent in London and 38 per cent in the North West. Probable causes are differences between regions in age structure, and the size and age composition of migration flows between regions. Inter-regional differences in birth rates specific for age are not large enough to go far towards explaining why the increases in the under-20 populations differ so much as proportions of the total upward revisions in the projected population total. These large upward revisions to the projected population aged 20 and over in the Yorkshire and Humber and East Midlands regions (19 and 16 per cent, respectively, of the national total) are the reasons for the household projections in those regions being raised so much (see Table 2.7, later in this paper).

Projections of households derived from the 2006-based population projection

2.10 That an upward revision to the projection of households can come from only one-half of the total revision of the population projection means

that a revised household projection cannot be derived from the 2006-based population projection simply by dividing by an average household size. The method used here depends on the working detail of the 2004-based household projections, made available by the (then) Office of the Deputy Prime Minister. For each of 2006, 2011, 2016, 2021, and 2026, for male and female populations separately, ratios of household representatives to private household population were calculated, for each of 15 age groups. The concept of the household representative is defined and explained in *Projections of Households in England to 2011*¹ and in *Projections of Households in England to 2016*.² By definition all households must have one, and only one, household representative. The numbers of households and of household representatives are equal, by definition. Projecting the number of household representatives in future years therefore projects the number of households. Household representative rates are ratios of household representatives to private household population in specified groups defined by age, sex, and marital status – for example non-cohabiting divorced women aged 55-59. Household representative rates in future years are projected from past trends. A full re-working of the household projections would require the 2006-based projection of the private household population to be partitioned by sex, age, legal marital status, and cohabitation status. This would be part of the procedure for running the 2006-based population projection through the official household projection model that is understood to be planned for late in 2008. Here and now a simpler procedure is used.

Table 2.4
Difference between the 2004-based and 2006-based regional projections of the population in 2026

	Aged under 20	Aged 20 and over	Total
	thousands		
North East	73	95	168
North West	167	103	270
Yorkshire and the Humber	173	264	437
East Midlands	150	226	376
West Midlands	159	126	285
East of England	161	174	335
London	195	94	289
South East	223	189	412
South West	150	138	288
England	1,454	1,404	2,859
North	413	463	875
Midlands	309	352	661
South	729	595	1,324

Minor discrepancies in totals are due to rounding

Source: Derived from Table 1

2.11 The first stage is to derive a projection of the private household population from ONS's projection of the whole population, by subtracting the institutional population. At ages up to and including 70-74 the institutional population is assumed in the official projection model to remain at 2001 Census levels in absolute terms in each sex/age/marital status category. At ages 75-79, 80-84, and 85 and over, the 2001 Census ratio of institutional population to total population is assumed for future years. The working detail of the 2004-based household projections is used for the institutional population to be subtracted from the 2006-based projections of the total resident population. Because at age 75 and upwards the institutional population is derived by a ratio, the higher 2006-based projection of the population aged 75 and over (see Table 2.3) results in higher figures for the institutional population than in the 2004-based household projection. In practice this only matters for the population aged 85 and over. The institutional population is subtracted to leave the private household population.

2.12 The second stage of the calculation is to work out in each year, in each of the 15 age groups for

men and women separately, the ratio of household representatives to private household population, from the detail of the 2004-based household projections (see para. 2.10 above). These ratios depend on a changing mix of marital statuses and household representative rates. To work with these overall ratios is, however, proper and does not introduce significant error so long as future marital statuses are not revised.

2.13 The third stage is to multiply the 2006-based private household population in each age group, for men and women separately, by the ratio of household representatives to private household population for each projection year, 2006 to 2026 at five-year intervals. Table 2.5 shows the household projections derived by this procedure from the 2006-based population projections, with the official 2004-based projections shown for comparison.

2.14 The household estimates derived from the 2006-based projections of the population are much higher than the official 2004-based household projections. The 2006-based figure for 2021 is almost 600,000 higher, and for 2026 nearly 800,000 higher – in other words just under 40,000 a year above the 2004-based household projections. The net increase in the number of households in the period 2006-21 according to estimates derived from the 2006 population is just over 4 million, almost 270,000 a year; and in 2006-26 some 5.2 million, 260,000 a year. These figures are far above current thinking about the number of dwellings to be added to the stock to balance the increase in households, or still more to add to the supply of housing sufficiently to slow down the rate of rise in house prices.

2.15 Regional household projections for 2026 were derived from the regional population projections by the same method as used for the household projections for England. The regional household projections estimated independently were then scaled to agree with the national figure for 2026 – 26,761,000. Scaling in this way is used to secure

Table 2.5
2004-based and 2006-based projections of households in England

	2004-based (official)	2006-based (not official)
	thousands	
2001	20,523	20,523
2006	21,519	21,532
2011	22,646	22,804
2016	23,837	24,137
2021	24,973	25,569
2026	25,975	26,761

Source: See text (paras 13-15)

Table 2.6
Regional household projections for 2026

	2004-based	2006-based	Difference
	thousands		
North East	1,229	1,292	63
North West	3,453	3,514	61
Yorkshire and the Humber	2,645	2,815	170
East Midlands	2,290	2,432	142
West Midlands	2,607	2,676	69
East of England	2,968	3,060	92
London	3,835	3,881	46
South East	4,160	4,236	76
South West	2,789	2,858	69
England	25,975	26,761	786

Minor discrepancies in totals are due to rounding

Source: See text (paras. 13-15)

agreement between regional and national household projections.

2.16 The projections of households in 2026 shown in Table 2.6 may be set in the context of overall projected changes between 2001 and 2026, and the actual changes between 1981 and 2001.

2.17 Table 2.7 shows that the 2004-based projections estimated a much higher proportion of the total increase in households between 2001 and 2026 as being in the North of England than actually occurred during 1981-2001. The 2006-based household projections make this contrast even greater, with over 36 per cent of the total increase being in the three regions of the North of England as compared with only 19 per cent during 1981-2001. The totals themselves are striking: upward revisions of 170,000 households in Yorkshire and Humber and 142,000 in East Midlands. This is the consequence arithmetically of increases in the population aged 20 and over (Table 4), bringing the projected increase in households in Yorkshire and Humber to three-quarters of a million between 2001 and 2026, and to 700,000 in East Midlands. These are the implications of official population projections. Three-quarters of a million more households in Yorkshire and Humber in 25 years implies a different prospect for the economy of the North of England from what is often assumed.

2.18 Not least because the implications of the 2006-based estimates of households for housing demand and need would be so far-reaching if acted on, they require close scrutiny. It is contended in this paper that there are reasons for thinking that the 2006-based figures could be too high, but not

by enough to radically alter the prospect until possibly in the second decade after 2006. The reasons are: (a) the actual increase in households between 2001 and 2006 appears to be well short of the 1,009,000 shown in Table 2.5, which implies that household representative rates (see para. 10) have risen by less than projected; and (b) there is evidence that household representative rates for recent immigrants are lower than for the whole population, a matter made much more important by the large number of immigrants assumed in the 2006-based population projections. These factors are considered in turn. A third, more speculative, consideration is that the 'headline' figure of net migration into the UK averaging 190,000 a year in the medium to long term (2014-15 onwards) may be on the high side. From that year migration from and to the EU accession countries is assumed to be in balance. In the medium term a larger return flow might take place if the economies of those countries do well, and all the more so if employment opportunities in Britain are not as plentiful as when the rise in immigration occurred.

Directly estimated increase in households during 2001-06 compared with the projections

2.19 An estimate of the increase in households between 2001 and 2006 that is independent of population and household projections and so to be contrasted with the net increase of 1,009,000

Table 2.7
Regional distribution of increase in households

	1981-2001		2001-26		Proportions		
	thousands	2004-based 2006-based		1981-2001	2001-26		
		thousands			2004-based 2006-based		
		per cent					
North East	96	154	217	3.0	2.8	3.5	
North West	269	626	687	8.5	11.5	11.0	
Yorkshire and the Humber	238	576	746	7.5	10.6	11.9	
East Midlands	322	553	695	10.2	10.1	11.1	
West Midlands	285	453	522	9.0	8.3	8.4	
East of England	465	732	824	14.7	13.4	13.2	
London	402	799	845	12.7	14.6	13.5	
South East	635	866	942	20.1	15.9	15.1	
South West	447	696	765	14.2	12.8	12.3	
England	3,161	5,452	6,238	100.0	100.0	100.0	
North	603	1,356	1,650	19.1	24.9	26.4	
Midlands	607	1,006	1,217	19.2	18.4	19.5	
South	1,949	3,093	3,376	61.7	56.7	54.1	

Minor discrepancies in totals are due to rounding

Source: Office for National Statistics

households during 2001-06 shown in Table 2.5 can be made by using what may be termed the 'stock and household identities'. This procedure was used in an article by A.E. Holmans in *Town & Country Planning* of May 2007³ to produce an estimate of the net increase in households between 2001 and 2006. A slightly modified version of that estimate is used here, with a division between Government Office regions so that a comparison can be made with the projections at regional as well as national level.

2.20 The stock and households identities comprise three identities that hold by definition:

- (1) Total dwellings *minus* dwellings used as second homes *minus* vacant dwellings *minus* shared dwellings *equals* singly occupied main residences.
- (2) Total households *minus* households in shared dwellings *equals* households in dwellings that are not shared.
- (3) Households in dwellings that are not shared *equals* singly occupied main residences.

These identities state that all dwellings must be one (and only one) of occupied as an un-shared main residence, occupied as a shared main residence, occupied as a second home, or vacant. The identities state also that households must live either in an unshared dwelling as their main residence or in a shared dwelling; and that the number of un-shared dwellings occupied as a main residence equals the number of households in un-shared dwellings. The number of households that share a dwelling is a multiple of the number of shared dwellings.

2.21 The stock and households identities can also be written as first differences, i.e. in terms of the following changes:

- (4) The increase in the stock of dwellings *minus* the increase in second dwellings *minus* the increase or *plus* the decrease in shared dwellings *plus* the decrease or *minus* the increase in vacant dwellings *equals* the increase in singly occupied main residences.
- (5) The increase in households in total *minus* the increase in households in shared dwellings *equals* the increase in households in un-shared dwellings.
- (6) The increase in households in shared dwellings *equals* the increase in shared dwellings *times* the average number of sharing households per shared dwelling.
- (7) The increase in households in un-shared dwellings (equals the number of singly occupied main residences) *plus* the increase in households in shared dwellings *equals* the total increase in households.

2.22 The information required for deriving an estimate of the net increase in households from the stock and households identities therefore comprises:

- (a) the net increase in the stock of dwellings;
- (b) the change in the number of second homes;

- (c) the change in the number of vacant dwellings;
- (d) the change in the number of shared dwellings; and
- (e) the change in the number of sharing households.

2.23 The number of shared dwellings can be estimated only by a specialist survey, but sharing households can be estimated from a household interview survey. The number of shared dwellings can be estimated from sharing households from the ratio between them in the 2001 Census.

2.24 Of the items of information required – in practice (a), (b), (c), and (e) – the least problematic is (a), the net increase in the dwelling stock between 2001 and 2006, which can be obtained from the official estimates of the housing stock published by the DCLG. The other three all are subject to difficulties. For the increase in the number of second homes there are two sources: from the Survey of English Housing (SEH) there is an estimate of the number of households with a second home in England; and council tax information includes the number of dwellings for which a second homes discount is claimed. Estimates of second homes from the SEH are subject to sampling variation, and refer only to second homes owned by members of private households. Second homes belonging to corporate bodies (for example *pieds à terre* for occasional use) are therefore not included. The council tax totals, on the other hand, vary erratically from year to year, especially at regional level.

2.25 The number of vacant dwellings belonging to local authorities and registered social landlords (RSLs) is known from administrative sources and is published by the DCLG, most recently in *Housing Statistics 2006*. For privately owned vacant dwellings, however, it is necessary to use Housing Strategy Statistical Appendixes (HSSAs). Local authorities are understood to use a variety of sources in their HSSA returns. A particular question is whether completed but not yet occupied flats in city centre developments, which are widely thought to be numerous, are fully included.

2.26 For sharing households, the information source is the number of households in non-self-contained accommodation as estimated from the SEH. These estimates are subject to sampling variation; and there is considerable doubt about how far multiple occupations by migrant workers are recorded. Reports are widespread of instances of several un-related persons living in one dwelling. The concept of a separate household is difficult to apply in such circumstances. The SEH figures are used, which probably is to assume implicitly that the migrant workers are counted as living in large households of un-related persons, not as two or more separate households living in the same dwelling.

Table 2.8**Vacant local authority dwellings in England in 2001 and 2006**

	2001	2006	Change 2001-06
All vacant dwellings	80,300	42,900	-37,400
Management vacants	41,200	22,000	-19,200
Other vacant dwellings	39,100	20,900	-18,200

Source: Housing Statistics 2006, Table 1.7

2.27 The official estimate of the *net increase in the stock of dwellings* between 2001 and 2006 is **782,000** (taken from *Housing Statistics 2007*, Table 1.3). The figure is subject to revision because it is derived from a provisional estimate of the stock in 2006.

2.28 The number of *second homes* according to council tax information made available by the DCLG increased by **64,000** between 2002 and 2006. The figure for 2001 is considered to be too uncertain to use.

2.29 Vacant dwellings belonging to local authorities and RSLs are considered first. Published figures (*Housing Statistics 2006*, Tables 1.7 and 1.8 – not included in *Housing Statistics 2007*) show all vacant dwellings, and ‘management vacants’ which are ready for occupation immediately or after only minor repairs. The others are likely to be awaiting or undergoing regeneration or demolition. Dwellings emerging from regeneration are probably included in new supply, and hence are included in the stock increase. A reduction in ‘management’ vacants, on the other hand, could provide for an increase in households relative to total dwellings. The published figures for RSL vacant dwellings refer to ‘general needs’ housing only, and in 2005 the definition of ‘general needs’ was changed, with some housing reclassified as housing for older people (*Housing Statistics 2006*, Table 1.8, note 3). The published figure for all RSL vacant dwellings in 2005 (31 March) is 8,200 lower than in the previous year. In view of this large break in the series it seems best to use the totals of vacant RSL dwellings from the HSSA returns. These are 36,416 at 1 April 2001 and 40,061 at 1 April 2006. HSSAs do not give a division between management vacant RSL dwellings and other vacants, so recourse is had to the change in total RSL vacant dwellings and management vacants over a run of years to 2004 (*Housing Statistics 2006*, Table 1.8). Between 1996 and 2004 total RSL vacant dwellings rose by an average of 2,460 a year, whereas management vacants rose by 860 a year. The increase in management vacants was thus 35 per cent of the total increase in RSL vacants. This percentage, applied to the increase of 3,645 between 2001 and 2006 according to HSSA data, gives 1,300 as the increase in RSL management vacants.

2.30 For local authority vacant dwellings, compatible figures are available for 2001 and 2006. They are shown in Table 2.8.

2.31 With a reduction of 19,200 in local authority management vacants and an increase of 1,300 in the RSL sector, there was an overall decrease of 18,000 in round terms in social rented sector vacant dwellings that were available for occupation immediately or after minor repairs. The reduction in the local authority sector and the increase in the RSL sector are partly the consequence of transfers of dwellings from local authority ownership to RSLs.

2.32 HSSAs show a category of dwelling stock and vacant dwellings that is termed ‘other public sector’. Much of this appears to be Services family quarters accommodation. HSSA data show a fall of 7,658 between 2001 and 2006 in vacant dwellings in this sector – say 7,000 in round terms.

2.33 The number of vacant dwellings in the private sector is reported by HSSAs as having fallen by 36,668 between 2001 and 2006, which rounds to 37,000. Possible limitations to this figure were referred to in para. 2.25 above, but it is used here owing to lack of any other. The total reduction in vacant dwellings between 2001 and 2006 is therefore put at **62,000**.

2.34 For sharing households, the information used is estimates of households in non-self-contained accommodation from the SEH. The reported numbers are 157,000 in 2001/02; 172,000 in 2002/03; 184,000 in 2003/04; 212,000 in 2004/05; and 224,000 in 2005/06. The average annual increase was 17,000, so **85,000** is taken for the five-year period from 2001 to 2006. Information from the 2001 Census gives a ratio of 3.2:1 between sharing households and shared dwellings, so the increase in shared dwellings is put at **27,000**.

2.35 Table 2.9 on the following page shows the net increase in households between 2001 and 2006 as estimated through the stock and household identities.

2.36 The actual increase in households between 2001 and 2006 as estimated through the stock and household identities is put at 838,000, compared with 1,009,000 as estimated from the 2006-based population projection (Table 2.5), or 996,000 from the official 2004-based household projection. As is made clear above, none of the elements of the estimate of the increase in

households from the stock and household identities is very precise. But it is hard to conclude that the potential sources of error are such as to call into question the finding that the actual increase in households between 2001 and 2006 was substantially lower than the projected increase from the household projection model and official mid-year population estimates. At face value the difference averaged 34,000 a year.

Directly estimated increase in households compared with projections at regional level

2.37 An estimate of the increase in households in England in 2001-06 like that shown in Table 2.9 may be made also at regional level, and compared with the projected increase in households region by region. The sources for the entries in Table 2.9 for the net increase in the dwelling stock, the change in the number of dwellings used as second homes, and the change in the number of vacant dwellings all give regional figures as well as totals for England. The increase in households in shared dwellings and the number of shared dwellings is derived from the SEH only as a total for England, which for present purposes has to be apportioned between regions. The apportionment of the increase in sharing households is made *pro rata* to the numbers of sharing households in each region as recorded in the 2001 Census (Office for National Statistics, Standard Tables S49), and the increase in shared dwellings is derived from sharing households in each region by reference to the ratio of sharing households to shared dwellings given by the Census.

2.38 Regional household totals consistent with the 2006-based household projections were estimated from the 2004-based projections for 2006 by scaling

up with reference to the 2006 estimate of the adult population in each region.

2.39 Table 2.10 shows the regional net increase in households during 2001-06 as estimated by the stock and household identities, together with a comparison with the projection totals. Minor discrepancies are due to rounding (for instance, in Table 1.3 in *Housing Statistics 2007*, the regional net increases in the housing stock sum to 780,000).

2.40 The direct estimate of the increase in the number of households between 2001 and 2006 by the stock and household identities is lower than the household projection estimate (produced by the household projection model from the mid-year population estimate) in all nine regions. The difference is largest in the East of England region and smallest in the South East and South West. When considering whether the regional pattern of differences between the projection estimates and the direct estimates can offer insights into possible regions why the direct estimates are lower, it must be recalled that some of the elements of the direct estimate are of uncertain quality. The reduction in private sector vacant dwellings as shown by HSSA returns is concentrated in three regions: Yorkshire and the Humber (16,276); London (15,960); and the South West (7,727). In the South East the number of vacant private sector dwellings is shown as having fallen by 111 only, and in the East of England region as having risen by 1,104. Except perhaps for London, the geography of the reduction in private sector vacants does not fit well with an explanation in terms of increases in market pressure. As noted earlier, it is possible that the figures for private sector vacants do not fully pick up increased numbers of unoccupied newly built flats and apartments. Over-supply of these flats is most commonly reported in the cities of the Midlands and the North. If this is borne out in reality, the implication is that in the regions of the North and the Midlands the direct estimates of the increase in

Table 2.9
Net increase in households in England between 2001 and 2006 as estimated through the stock and households identities

(i)	Net increase in dwellings (para. 27)	782,000
(ii)	Reduction in vacant dwellings (paras 29-33)	62,000
(iii)	Increase in dwellings used as second homes (para. 28)	64,000
(iv)	Increase in dwellings used as main residences	780,000
	= (i) plus (ii) minus (iii)	
(v)	Increase in shared dwellings (para. 34)	27,000
(vi)	Increase in singly occupied main residences	753,000
	= (iv) minus (v)	
(vii)	Increase in households in non-shared dwellings	753,000
	= (vi) (by definition)	
(viii)	Increase in households in shared dwellings (para. 34)	85,000
(ix)	Total increase in households	838,000
	= (vii) plus (viii)	

Table 2.10
Net increase in households in England between 2001 and 2006 as estimated through the stock and households identities

	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East of England	London	South East	South West	England
(i) Net increase in dwellings	22	82	63	83	68	106	102	144	110	782
(ii) Reduction in vacant dwellings	2	7	21	5	0	0	16	2	9	62
(iii) Increase in dwellings used as second homes	3	2	6	2	9	6	17	11	8	64
(iv) Increase in dwellings used as main residences = (i) plus (ii) minus (iii)	21	87	78	86	59	100	101	135	111	780
(v) Increase in shared dwellings	0	2	2	1	2	2	11	4	3	27
(vi) Increase in singly occupied main residences = (iv) minus (v)	21	85	76	85	57	98	90	131	108	753
(vii) Increase in households in non-shared dwellings = (vi) (by definition)	21	85	76	85	57	98	90	131	108	753
(viii) Increase in households in shared dwellings	1	7	8	3	5	6	33	14	8	85
(ix) Total increase in households = (vii) plus (viii)	22	92	84	88	62	104	123	145	116	838
(x) Projected estimate of increase in households	37	107	116	115	86	138	138	152	122	1,009
(xi) Difference (if line (ix) is lower than line (x), designated minus)	-15	-15	-32	-27	-24	-34	-15	-7	-6	-171

thousands

households are too high and the shortfall below the projection estimate is therefore larger than is shown in Table 2.10.

2.41 Caveats apply also to the increase in second homes. Table 2.10 shows the change between 2002 and 2006, as figures for 2001 are not available. The figure for the increase in council tax second homes in London stands out in Table 2.10. If genuine, it implies a substantial increase in dwellings used for occasional occupation. If it is over-stated, the direct estimate of the increase in households in London would be too low.

2.42 The regional analysis confirms that the shortfall at national level of the direct estimate of the increase in households between 2001 and 2006 relative to the household projection estimate is not a freak result and can be taken as genuine. But little insight is given into possible causes by the regional analysis.

2.43 Three possible explanations may be suggested for the apparent shortfall of the actual increase in households between 2001 and 2006 below the trend-based projection. One is an effect of rates of increase in house prices way above trend in relation to incomes preventing some would-be households from buying or renting the accommodation they need in order to live independently. Another is that projected increases in household representative rates among divorced and single men and women in middle age have not so far come through in full. The third possibility is the lower household representative rates among recent immigrants. The possible causes are not mutually exclusive, but have different implications for the longer term. The first, which might be termed affordability effects, would imply that forming of new households has been postponed. To that extent there has been a short-term reduction in household formation which will be made good when affordability improves. The other explanations would imply long-term over-statement

by the 2004- and 2006-based projections, although they would work differently. The magnitude of the effect of lower household formation by recent immigrants would depend on the volume of immigration. The three potential causes of over-statement would to a considerable extent impact on different categories of household, which could in principle be a way of testing for them. But the information with which to do this is not to hand.

Lower rates of household formation by immigrants

2.44 Information from the Labour Force Survey shows that, age for age, lower proportions of persons born outside the UK who have been here for a comparatively short period are household reference persons than in the whole population. In other words, fewer households are formed by recent immigrants relative to their number and ages. This information, together with Census information about the proportion of inward migrants who were residents of private households, was presented in Tables 4, 5 and 6 of *More Households to be Housed*, by Holmans and Whitehead.⁴ It is also shown here so as to make this paper self-contained. Table 2.11 is taken from the 2001 Census and shows the household status of people usually resident in England and Wales at the time of the Census but who lived outside the UK one year previously.

2.45 A high proportion of the residents in communal establishments are likely to be students, many of whom, though not all, are likely to return to their home countries and so are not long-term residents in the UK who might form households here. The Census is the only source of information about all inward migrants, including those in communal establishments. The Labour Force Survey's sample

Table 2.11
Household status of persons resident outside the UK one year previously – England and Wales, 2001

Age	In communal establishments	In private households	Total	Household reference persons	Percentage of reference persons ^a
thousands					
0-15	3.4	54.0	57.4	-	-
16-24	31.8	74.2	106.0	8.1	11
25-34	12.1	109.5	121.6	30.9	28
35-49	2.8	56.3	59.1	24.8	44
50 and over	1.0	25.4	26.4	10.7	42
Total	51.1	319.4	370.5	74.4	-

^a Base is population in private households, because only residents in private households can be household reference persons

Source: Census 2001. *National Report for England and Wales*. Part 2, Tables T33 and T34

Table 2.12**Place of birth and length of time in the UK – residents of England, 2002-05**

	Household reference persons	All persons
	thousands	
Born outside the UK		
Entered the UK less than 5 years before	323	1,028
Entered the UK 5 years but less than 10 years before	243	636
Entered the UK 10 years but less than 20 years before	314	718
Entered the UK 20 years or more before	1,232	2,009
Total born outside the UK^a	2,133	4,430
Born in the UK	18,122	42,855
Not known if born outside the UK	343	1,374
Total private household population	20,598	48,659

^a Includes born outside the UK but length of time since entering the UK not stated

Source: Labour Force Survey made available by the Office of the Deputy Prime Minister

is drawn from private households; hence information from it refers only to the private household population. Estimates of the number of persons living in England but born outside the UK are given in Table 2.12. The source is the Labour Force Survey for 2002, 2003, 2004, and 2005 combined.

2.46 The number of foreign-born residents of the UK depends on return migration by immigrants as well as on the number entering the UK. That the number of immigrants who entered the UK between 5 and 10 years before is lower than the number who entered less than 5 years before is likely to be due in part to outward migration by foreign-born persons who migrated to the UK. Ratios of household reference persons to total persons born outside the UK according to age and length of time since entering the UK are shown in Table 2.13. The ages shown are at time of the Labour Force Survey interview, not at the time of entering the UK.

2.47 The ratios of household reference persons to all persons in the 25-29 and 30-44 age groups are lower among persons who entered the UK less

than 5 years before and 5 years but less than 10 years before than they are among foreign-born persons who had been in the UK longer and among the UK-born population. Beyond 10 years since entering the UK the differences are small. These differences are consistent with convergence in household formation by immigrants towards the whole population norm. But it is necessary to recall that by 5 but less than 10 years duration the number of immigrants entering the UK will be depleted by return migrants, which could introduce bias if household formation rates by return migrants were significantly different from household formation by those that stayed. Furthermore, the comparisons between household reference person ratios at different durations since entering the UK are between different groups of people with possibly different characteristics. There is an element of uncertainty about estimating the effect of the lower household formation rates among immigrants on the number of households. But the number of immigrants assumed in the 2006 population projection is too high for possible over-

Table 2.13**Ratios of household reference persons to total private household population – England, 2002-05**

	Age				
	16-24	25-29	30-44	45-64	65 and over
	per cent				
Born outside the UK					
Entered the UK less than 5 years before	24	38	49	58	29
Entered the UK 5 years but less than 10 years before	20	43	53	58	44
Entered the UK 10 years but less than 20 years before	11	46	56	61	51
Entered the UK 20 years or more before	24	41	58	60	70
Born in the UK	14	46	57	59	71
Whole private household population	14	44	56	59	70

Source: Labour Force Survey made available by the Office of the Deputy Prime Minister

statement in the household projection to be left on one side.

2.48 The estimate of the effect of lower household formation rates is made by estimating the difference from the number of households formed by immigration with the household reference person ratios in Table 2.13 compared with the ratio for the UK-born population. The difference is significant only for immigrants who entered the UK less than 5 years before or 5 but less than 10 years before. This is straightforward for the 25-29 and 30-44 age groups. The ratios in the 16-24 age groups are affected by more of the recent immigrants living independently than is the case in the UK-born population, many of whom are still at school or are in further education. The same duration-related differences are taken for the 16-24 age groups as in the 25-29 age groups.

2.49 The 16-24 age group of immigrants includes substantial numbers of students who are less likely than the whole population of the same age to form separate households. Many students from outside the UK return home before very long, and so should not be included in calculations about household formation by immigrants. Of the persons living outside the UK one year previously shown in Table 2.11, 84,000 were students. An age analysis is not available. But it is reasonable to reckon on four-fifths (67,000) returning to their home countries, and to divide them in proportions 3:1 between the 16-24 and 25-29 age groups (i.e. 50,000 and 17,000). These proportions could readily be varied for sensitivity.

2.50 The detail of the estimate of the effect of lower household formation rates by immigrants is put into an Annex because it is complex. Its basis is the age distribution, made available by the ONS (Office for National Statistics), of immigrants to England from outside the UK assumed in ONS's 2006-based population projection. It is for 2014-15 onwards, when net migration to and from the EU accession countries is assumed to be zero. The proportions in Table 2.13 can be applied to all inward migrants.

2.51 By bringing into account the difference between immigrants' ratios of household reference persons to total persons instead of the ratios for the UK-born population, the calculation in the Annex puts the difference made to the number of households over a 20-year period at 759,000. This is probably too high, because it takes no account of attrition of the post-2006 immigrant population through return migration. There is no reliable way of estimating this attrition effect, but around 600,000 households in total after allowing for attrition would appear reasonable. This looks a very large number, as indeed it is. But it is a figure for 20 years and looks perhaps less surprising in relation to the number of immigrants aged 16-44 that is assumed during that time, 7.2 million (see Table A.3 in the

Annex). The over-statement of the number of households brought about by assuming that immigrants have the same household-forming propensities as the whole population depends on the gross number of immigrants assumed, not on net immigration. It is not the same as the contribution made to the increase in the number of households that is due to positive net inward migration. That is the difference between the number of households formed from the projected volume and the number there would be if inward migration were to run at the same level as outward migration.

Some implications of the 2006-based population projections for households and housing

2.52 Consideration of the implications of the 2006-based population projections for England may begin with an analysis of the sources of the projected increase in households derived from the population projections. Such an analysis was shown in Table 8 of *More Households to be Housed*,⁴ and referred to the 2003-based projection for 2001-21. That the 20-year projected increase in households starts with 2006 instead of 2001 does not materially impair the comparison, because the projections increase at steady rates from year to year. More important is that the 2004-based projection was higher than the 2003-based projection, owing to higher assumed net migration and a more rapid improvement in longevity. The difference between the 2003-based and 2006-based estimates of household growth includes the upward revision between the 2003-based and 2004-based official household projections, as well as the upward revision to the 2004-based household projection proposed in this paper to take account of the 2006-based household projection. The differences between the 2003-based and 2006-based columns in Table 2.14 are due to more assumed immigration and more improvement in longevity. No changes are made to assumptions about marital status and household representative rates. That the increase attributed to household representative rates in the 2006 column is higher is the result of the same rates being applied to a future population that is larger owing to more migration and fewer deaths.

2.53 Since in this paper the suggestion has been made that both the 2004-based and the 2006-based household projections probably over-state owing to lower household formation by recent immigrants and possibly other reasons, it seems appropriate to comment on the implications of the 2006-based population projections in terms that take account of this over-statement. A '2006-based modified' column is therefore included in Table 2.14 along

Table 2.14**Composition of projected increase in households in England**

	2003-based (2001-21)	2006-based (2006-26)	2006-based modified
	thousands per year		
Population growth and change			
Longevity	48	58	58
Migration (difference from zero net migration)	55	90	60
Separation of couples	52	52	52
Other changes in total and age structure	10	10	10
Sub-total	165	210	180
Marital status and cohabitation	0	0	0
Higher household representative rates	44	47	46
Other (inter-action effects)	4	5	5
Total	213	262	231

Source: *More Households to be Housed*,⁴ Table 8; and see text

with the 2003-based and 2006-based columns. In the '2006-based modified' column, 30,000 a year is taken from the increase in household numbers from migrants (see para. 50). This affects the increase from higher household representative rates, because they impact on a slightly lower future population. Because the proportion of immigrants that are in the high age groups is low, there is no interaction with the increase due to longevity. Migration and longevity are the drivers of the projected increase in households.

2.54 In the light of the 2006-based population projection, it seems reasonable to reckon in the long term on an increase of around 230,000 a year in the total of households in England to be housed. The increase in the stock of dwellings to house them would have to increase by more than this if the demand and need for self-contained housing is to be met and households are not to be obliged by housing shortages to share in multi-occupied accommodation. Increases in the number (but not the proportion) of vacant dwellings as the total housing stock increases and increases in second dwellings would add 15,000-20,000 a year to the net increase in households, to give the average annual net increase in the housing stock required just to keep pace with population and households.

2.55 A figure of 245,000-250,000 a year is ahead of the 240,000 a year as the net increase in the dwelling stock that the Government has set as the target increase in the dwelling stock in 2016. Over the period from 2006 to 2020 it would amount to 3,430,000-3,500,000 – well ahead of the target of 3 million more homes by 2020. Three million more homes by 2020 (214,000 a year) would be well below what would be needed to provide for the increase in households that the 2006-based population projections imply.

2.56 The 2006-based regional household projections (Table 2.6) point to much stronger

household growth in the Midlands and the North than hitherto. Pressures in the South will remain strong and growing, but the 2006-based population projections and the household projections derived from them do not greatly alter the prospect from that given by the 2004-based and indeed the 2003-based projections. The change in the prospect for the Midlands and the North, especially the East Midlands and Yorkshire and the Humber, is much more radical – nearly 9,000 a year added to an already large projected increase of 29,000 a year between 2006 and 2026. This change of prospect is the result of assumptions about the destinations of immigrants and internal migration within England.

2.57 Proportionally more of the additional new provision of housing will need to be in the North and the Midlands if the regional population projections carry credence. This faster growth of population and households in the North, so long and vigorously advocated by many groups in the South of England, will not take pressure off the South. While much more of the household growth is expected to be in the North, pressure in the South will continue to intensify, if at a slower rate.

Notes

- 1 *Projections of Households in England to 2011*. Department of the Environment, 1995
- 2 *Projections of Households in England to 2016*. Department of the Environment, Transport and the Regions, 1999
- 3 A.E. Holmans: 'New and higher household projections, but are the projections on track?'. *Town & Country Planning*, 2007, 76, May, 168-74
- 4 A.E. Holmans and C. Whitehead: *More Households To Be Housed: Where is the Increase in Households Coming From?* Town & Country Planning Tomorrow Series Paper 5. TCPA, 2006 (Also bound into *Town & Country Planning*, 2006, Vol. 75, Oct.)

annex: the effect on household totals of lower household formation rates by immigrants in their first ten years in the uk

A.1 For present purposes the difference between the ratio of household reference persons to total population for immigrants who came to the UK less than 5 years previously and that for the UK-born population can be taken to apply to immigrants in a given 5-year period. The difference for immigrants who entered the UK 5 years but less than 10 years previously would apply in the next 5 years. After that, no difference is assumed. For example, immigrants aged 25-29 who entered the UK in 2006-07 to 2010-11 would have a household reference person ratio 8 percentage points lower than that for the UK-born population (see Table 2.13 of the main text) but in 2011-12 to 2015-16 the household reference person ratio for these same immigrants would be 3 percentage points lower. In the next two 5-year periods, 2016-17 to 2020-21 and 2021-22 to 2025-26, the ratio would be the same as for the UK-born population. The percentage point differences according to year of entry and age are shown in Table A.1. For reasons discussed in the main text

the differences that apply at ages 25-29 are taken to apply at ages 16-24 as well. The differences in household reference person ratios at ages 45-64 are too small to be significant in relation to the small number of immigrants in this age range. For convenience the mid-year to mid-year periods, which are correct for population projections, are replaced by calendar years – 2006 in place of 2006-07.

A.2 The assumed long-term migration flows are used in conjunction with the percentage differences in household reference person ratios. Their source is an age analysis of the medium- to long-term international migration flows to England assumed in the 2006-based population projection made available by ONS, with a reduction (which is the authors' responsibility) for students not staying to be part of the household-forming population (para. 2.49) – see Table A.2.

A.3 To calculate the effect of the difference in household reference person ratios on the number of

Table A.1
Percentage point difference in household reference person ratios

Age and year of entry to the UK	2006-10	2011-15	2016-20	2021-25
16-24				
2006-10	8	3	0	0
2011-15	-	8	3	0
2016-20	-	-	8	3
2021-25	-	-	-	8
25-29				
2006-10	8	3	0	0
2011-15	-	8	3	0
2016-20	-	-	8	3
2021-25	-	-	-	8
30-44				
2006-10	8	4	0	0
2011-15	-	8	4	0
2016-20	-	-	8	4
2021-25	-	-	-	8

Source: Derived from main text and Table 13

Table A.2
Ages of international migrants entering England

	Age		
	16-24	25-29	30-44
	thousands per year		
ONS 2006-based assumption	185 ^a	118	125
Less students not forming households	50	17	-
Total potentially household-forming immigrants	135	101	125

^a 190,000 for ages 15-24

Source: Office for National Statistics and see text

household reference persons and hence households, the annual figures for household-forming immigrants are multiplied by 5 to give totals for each of the 5-year periods in Table A.1. These totals are then multiplied by the sum of the percentages in Table A.1 – for example for the 30-44 age group, 8 per cent in 2006-10 and 12 per cent for the other five-year periods. Table A.3 shows this calculation.

Table A.3
Effect of immigrants' lower household reference person ratios on number of households

	2006-10	2011-15	2016-20	2021-25	20-year total
	thousands				
Ages 16-24					
Potentially household-forming immigrants	675	675	675	675	2,700
Lower households reference person ratios (per cent)	8	11	11	11	-
Effect on number of households	54	74	74	74	276
Ages 25-29					
Potentially household-forming immigrants	505	505	505	505	2,020
Lower households reference person ratios (per cent)	8	11	11	11	-
Effect on number of households	40	56	56	56	208
Ages 30-44					
Potentially household-forming immigrants	625	625	625	625	2,500
Lower households reference person ratios (per cent)	8	12	12	12	-
Effect on number of households	50	75	75	75	275

Source: Calculated from Tables A.1 and A.2

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