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Household Projections in England: their history and uses

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EXECUTIVE SUMMARY

- Household projections are an important tool for estimating housing demand and need as well as the necessary land supply if adequate housing is to be provided. As a result they are highly policy relevant and can be political dynamite.
- Household projections are based on population projections and trends in household formation categorised by age and household type. The methods by which they are produced have become more sophisticated over the decades.
- Household projections were first developed after the 1931 Census and were based on evidence about the actual numbers of households from 1861 to 1931. These showed a close relationship between population and households. This was used to estimate the number of households in 1941 – an estimate that was probably too low but could not be checked in wartime.
- The 1951 Census published actual headship rates for the first time (i.e. the proportion of a given group e.g. married men aged between 40 and 65) that headed a separate household. These again suggested a stable relationship between population and the number of households.
- This relationship started to break down in the 1950s as housing became more plentiful and incomes rose. The 1961 Census showed that household numbers increased by 12% over the decade instead of the projected 5%. Estimates, based on 1961-1966 were again found to be too low in 1971 - and then adding the 1971 figures into the trend projection raised the projection to 1981 by half a million.
- Thereafter there were large scale changes in the mix of household types as divorce and separation as well as lone parent households became more numerous. This together with increases in projected population led to large upward revisions.
- By 1991 it was necessary to introduce a new category - cohabiting couple households – and at the same time the terminology was changed from household head to household representative. The 1991 based projections again showed much higher projected household growth – at around 178,000 per annum to 2016. Two thirds of the increase was associated with population increases while another thirty per cent resulted from rises in household representative rates.
- Later estimates in 1996, based on better data particularly about marital status, suggested a somewhat slower increase in the number of households. Sensitivity analysis also suggested that the growth in households was not very responsive to economic variables.
- Thereafter most of the new estimates generated higher projections – up to as high as 250,000 additional households per annum. These raised questions about the basic methodology and led to a full scale review that generated a new two-stage approach.

- The 2008 projections used this new methodology by which in the first stage only four types of households were included for simple projections based on four census points. The second stage provided much more detailed analysis using 17 household types which allowed households with children to be distinguished for the first time - but based on only two points, 1991 and 2001. This generated much lower projections for couples but even higher projections for lone parent households. How accurate these are will at least to some extent be tested by the 2011 Census findings.
- The new approach also put considerable weight on representative rates post the 2001 Census which may for the first time have introduced shorter term impacts into the projections, arising from house price increases and constraints on mortgage availability.
- Sub-national projections based on similar principles, together with evidence on internal migration tend to be rather less robust. This is in part because migration trends have not been consistent over time. However they remain extremely important because they provide an evidence base for local policies, particularly on land release.

PREFACE

The author's interest in household projections dates from the 1960s. He joined the Ministry of Housing and Local Government as Senior Economic Adviser in Economics Housing Division in 1968 when the first household projections made by "modern" methods (projecting trends in headship rates from actual data) were becoming available within the Ministry. He continued to work with household projections until he retired in 1994, including devising a method for using household projections to produce estimates of future needs for social sector rented housing. After retirement he did further work with the Government Department for household projections (Department of the Environment and then Environment, Transport and the Regions). He wrote much of the text of the published report on the 1992-based household projections, *Projections of Households in England to 2016*; and subsequently wrote the text of *Projections of Households in England to 2021*, the published report on the 1996-based projections.

The method for deriving an estimate of future need for social rented housing was used by the author after retirement for work commissioned first by the Joseph Rowntree Foundation (*Demand and Need for Housing in England to 2011*) and then at intervals for the Town and Country Planning Association and Shelter. His most recent study of future housing needs for Shelter, *Homes for the Future – A new analysis of housing demand and need in England*, was published in 2008. This experience has been drawn on by the author to prepare this history of household projections and commentary on their uses. Their antecedents reach back into the 1930s, when the 1931 census Housing volume included an estimate of the number of households in 1941. Private research institutes – notably the National Institute of Economic and Social Research – worked on household projections in the 1960s, and the Government (Ministry of Housing and Local Government) first published household projections in 1969. Initially there were only two sets of census data from which to project household trends, 1961 and 1966. With the passage of time 1971 and 1981 were added. When the 1991 data became available, 1961 and 1966 were dropped. The detail of projection techniques developed over the period and in 2010 there was a major change of method for the 2008-based projections.

This paper is a review of the history of household projections and not their future. But there are signs of changes, particularly in the importance given to survey information for non-census years relative to censuses. Historically the projections have depended on census data on households from which medium to long term trends have been estimated and projected. Shorter term variations around these trends have attracted little interest, not least owing to inability to estimate household totals in individual years reliably. Larger sample sizes with which to estimate household representative rates in non-census years are changing this situation, in a way already taken account of in the 2008-based projection. The British economy was far from recovered from the recession in 2011, so the number of households then is likely to be well below a 1971 – 81 – 91 – 2001 trend. What to do will be a difficult problem: will household formation return in time to trends before the affordability problems post-2001 and then the housing slump; or will it run permanently lower. Different trajectories might be taken, on the basis of explicit assumptions about the future of the British economy. These more fundamental problems about household projections post-2011 are additional to what will be the effect of a third census data point (2011) being added to the present data for 1991 and 2001 from which household representative rates specific for type of household were projected in the 2008-based projection by a two-point exponential model. The effect of the third point is probably not likely to be as great as that of 1971 as the third point added to the 1961 and 1966 two-point judgemental projection, but it could be substantial nonetheless.

CHAPTER I

Introduction: Methods for Household Projections and Scope and Structure of the Study

This chapter attempts to set the scene for a history of household projections in England. The first section of the chapter outlines the principles of household projections and the definitions of the central concepts, the household and the household head or representative. Another element is the population that is the denominator for household representative (or household headship rates). Mention must also be made of the change in geography, from England and Wales to England. At the end of this chapter the structure of the study is outlined, with four historical sub-periods, and a review of the way in which household projections have been used in policy terms.

Methods for Household Projections

Before discussing the history of household projections in England and the way they have been used, it would seem helpful to consider the basic principles of producing household projections. Household projections are a means for deriving estimates of numbers of households in future years from estimates of the future population. Household projections therefore are subject to all the uncertainties present in the population projections from which they are derived plus a further layer of uncertainties inherent in the method for deriving estimates of future households from estimates of the future population. How far into the future a household projection can be sensibly pushed is primarily a question about the time horizon of population projections. For how small an area household projections can usefully be made also depends on how meaningful population projections are for areas of different size. The further the time horizon the greater the risk of unforeseen changes occurring that could affect the future size of the population. International migration is the clearest example in recent British history.

For sub-national projections, currently for regions and for counties, unitary authorities and local authority districts, the problems are internal migration within England (and to and from the other three countries of the United Kingdom) and to a rather lesser extent apportionment of international migration flows within England. The other components of a population projection, births and deaths, pose fewer problems for sub-national household projections. Inter-area differences in mortality rates (specific for age) change only slowly, as do differences in birth rates. Assumptions about future births do not affect the future population of household forming age until 16 years into the future, and even then the difference made is small because the proportion of persons under age 20 that form households is very low. As a matter of mechanics a population projection can be made for any area any distance ahead. The limit is in credible assumptions about migration. Generally speaking, the smaller the area the greater the risk that unforeseeable events like the departure of a major employer could cause migration flows very different from previous trends. All these uncertainties are carried into sub-national household projections. How much change there has been between successive regional household projections is discussed in Chapter VI.

There are several methods for deriving household projections, from projections of the population. The simplest is to project trends in the average number of persons per household, customarily referred to as average household size, and divide projected population totals by this number. For many years the number of households has been rising relative to the population, hence a

downward trend in average household size. This trend could be projected in various ways. The limitation to using projections of average household size is that there are several reasons why the ratio of households to population can change. One is changes in the age structure of the population; an increase in births will increase the total population but not affect the population of household forming age. The consequence will be a fall in the ratio of households to population, other things being equal. It could mask changes in the opposite direction, for instance increasing proportions of widows and widowers living independently instead of living with other households or in institutions. It could also offset later household formation due to later marriage.

Other methods depend on membership of households by individuals. The most widely used of these is to project household headship rates. This method has been used officially in Britain, and also by private researchers. It depends on each household having a household head who is identified by sex, age and (sometimes) marital status. The number of household heads who are married men aged 35-39 (for example) is expressed as a proportion of the total population of married men aged 35-39. This proportion is a headship rate, which could be applied to projected numbers of married men aged 35-39 in future populations, or used as one data point along with one or more others to estimate a trend for projecting on into the future. The same general idea can be applied in simpler ways, for example assuming all future married men will be household heads. This was done before electronic data processing was applied to census data which made possible a count of household heads in many more different demographic groups. In official household projections the concept of household head was replaced in 1995 by household representative and household representative rate (see Chapter IV).

Definitions: Household and Household Head (or Representative)

The definition of a household used at the present time in England is one person living alone or a group of people living at the same address with common housekeeping, i.e. sharing a living room or at least one meal a day. Important to note is that with this definition two or more households can live in the same dwelling (house or flat). The concept dates back to the 1861 census. At that time (and until 1945) what is now termed a household was then termed a 'family'. A 'family' was defined in 1861¹ as: 'A family in its complete form consists of a householder with his wife and children' and in the higher social classes with their servants. Other relatives and visitors sometimes form part of a family; so do lodgers at a common table who pay for their subsistence and lodging. In taking the census the enumerator was directed to leave with each occupier a householder's schedule; the occupier by definition including the owner, or the person who paid the rent whether as tenant (for the whole house) or (as lodger) for any distinct floor or apartment. Thus a lodger alone, or in company with another lodger occupying common apartments, is an occupier and as such classed as a family'.

That concept of a family, private family, or household has continued to apply, apart from the modification introduced in 1981 to exclude from the count of households persons who shared the use of a living room or sitting room even though they did their own housekeeping². This definition of a household necessarily results in there being more census households than if the definition is that used in the USA (and in France), which is all persons living in a housing unit. With that definition the number of households is necessarily the same as the number of occupied dwellings. Which definition is used can affect not only the count of households at a particular date but also the projected increase if, for instance, one-person households are concentrated in a quickly growing sector of the population.

¹ Census of England and Wales 1861, Part III General Report, page 10

² Office of Population Censuses and Surveys *Changing the Definition of Household*, HMSO 1983

The head of the household was defined as the person who owned the house or paid the rent. That continued to be the guidance for completing the census form, specifically who should be entered as person number one. For household headship rate analyses the husband in married couple households was treated as if he were number one, even if he was not. But otherwise whoever was entered as number one was treated as head for calculating headship rates. Anomalies could result from this procedure and sometimes the concept of head of the household was objected to. For the 1992-based household projections a different procedure was introduced, to replace household head by household representative. The household representative was defined purely in demographic terms, independently of where household members were entered in the census form. The concept and its rationale are discussed fully in the published report on the 1992-based household projections.

In substance there is an order of precedence: the oldest married man in a married couple household; the oldest male cohabiter in a cohabiting couple household; the oldest lone parent in a lone parent household; and the oldest male member of an 'other multi-person household' (i.e. not a married couple household, cohabiting couple household, or lone parent household). A person living as a one-person household is by definition the household representative. The full detail is rather more complicated, and is set out in reference³. The household representative and the household representative rate have remained in use in English household projection work.

The denominator for household representative rates since 1969 has been the private household populations, i.e. the total resident population excluding the institutional population. The institutional population comprises people who are usually resident, including resident staff, in what the census terms 'communal establishments'. Examples include residential care homes and nursing homes, prisons, Services' barracks, and long stay hospitals. People who are residents in such accommodation are not living in private households (by definition) and so cannot be household representatives. Except at high ages, the institutional population is only a small fraction of the total resident population. At the high ages though, projecting the institutional population is of some importance. Separating the private household population and the institutional population was one of the many improvements made possible by use of electronic data processing for analysing census data from the 1961 census onwards.

During the period covered by this history of household projection, the geographical coverage changed from England and Wales to England. In the 1931 and 1951 censuses the housing and households volumes covered England and Wales as a whole, with Wales distinguished only where English regions were distinguished. When household projections became the responsibility of Government Departments responsible for housing they were for England and Wales until Welsh housing became the responsibility of the newly formed Welsh Office in 1971. Because for population statistics England and Wales have been a unity (since 1837) population projection procedure started with England and Wales and then derived separate projections for England. The census data on household composition remained for England and Wales; so projections were made in the first instance for England and Wales, with projections for Wales as a form of by-product. As published by the Department of the Environment and then the Department for the Environment, Transport and Regions (the Government Department responsible for housing in England), the detail of the projections was for England. After 2001 the household projections were published by the Department responsible for housing in England. The Welsh Assembly Government then made its own arrangements for household projections. Scottish household projections have always been independent.

³ Department of the Environment. *Projections of Households in England to 2016* (HMSO 1995). Annex A

Structure of the Study

The history of household projections in England can be divided into four periods, defined by projection methods:

- (i) From the 1930s to the mid-1960s before comparable headship rate data from two censuses became available for projecting future headship rates.
- (ii) From 1969 to the 1989-based projection, with headship rates from the 1961, 1966, 1971 and 1981 censuses. The 1961 census was the first for which electronic data processing was used to produce headship rates in the detail required for household projections.
- (iii) From the 1992-based projections to the 2006-based projections for which the central concept was the household representative rate.
- (iv) The 2008-based projections published in 2010, which employed a two-stage projection, with many more household types than before.

Projection methods in the four periods will be reviewed and selected results compared and commented on, in terms of figures for England and Wales and then England. In periods (ii), (iii) and (iv) projections for the regions of England were produced. The methods are commented on, and the distribution between the regions of the projected national increase in households in successive projections compared. Regional household projections are driven by regional population projections, so what is being studied is effectively changes in regional population projections at one remove.

Lastly the study considers how household projections have been used in policy studies. In the early 1960s projections of households were made by private researchers as part of estimates of housing need. It will be shown that the very high figures for housing need current in the 1960s were not the result of the household projections. The explanation lay in the estimates of the number of older houses that should be replaced.

CHAPTER II

The Early Years of Estimating Future Numbers of Households: 1930s, 1950s and 1960s

A The 1930s: The First Estimate of the Number of Households in a Future Year

The first published estimate of the number of households in a future year appeared in the *Housing Report and Tables* volume of the 1931 census of England and Wales. It included an analysis (Chapter 5) of the relationship between the population and the number of households (then termed private families). It compared the number of households in England and Wales in each census from 1861 to 1931 with population sub-totals considered likely to represent householders. These sub-totals were termed 'family indexes', constructed on three bases. The 'family index' that agreed best with census household totals was "basis C". It comprised all married women plus widowed women under age 65 plus 10 percent of single men aged 20 to 45. These population categories were chosen for appearing reasonable; no information from the census was tabulated about age, sex or marital status of heads of private families. Table 1 shows the comparison between enumerated households and 'family indexes' for 1911, 1921 and 1931.

Table 1. 'Family Indexes' and Totals of Households in 1911, 1921 and 1931

	(thousands)		
	1911	1921	1931
'Family indexes' (Basis C)	7,935	9,046	10,140
Actual census household totals	7,943	8,739	10,233

Source 1931, Census of England and Wales, *Housing Report and Tables*, Table IV, p. xvii

The full table showed that the census totals 'private families' in 1911 and 1931 were similar in relationship to 'family indexes' as in the earlier censuses. The table was interpreted as showing that the relationship of numbers of 'private families' to family index was distorted in 1921 by the abnormal housing situation caused by the war, but by 1931 the long-standing relationship had reappeared. This relationship was used by the General Register Office to make an estimate of the number of households in 1941. In Chapter 14 of *Housing Report and Tables*, entitled 'Housing requirements in the immediate future', a population projection for 1941 was divided by sex, age and marital status. From this a value for the 'family index' could be calculated for 1941, and used to produce an estimate of the number of households in England and Wales. The figure was 11,150,000 compared with the census total of 10,233,000. Owing to the war there was no census in 1941, so how close to the mark was the calculated figure cannot be known. It is evident though that the figure for 1941 was too low. The number of households in 1939 has been estimated at 11,750,000⁴. On that basis the average increase was 190,000 households a year, compared with the 92,000 a year estimated by the General Register Office.

⁴ See A E Holmans, *Historical Statistics of Housing in Britain*, (Department of Land Economy, University of Cambridge, 2006). Table A.1 for the sources and methods of the figure, see A E Holmans, *Housing Policy in Britain: A History*, (Croom Helm 1990), page 63.

Possible reasons why the estimate of households in 1941 was so low may be considered. First and perhaps most obvious is that as far as 1939 the actual increase in the population was greater than assumed. The figure of 11,150,000 households in 1941 was derived from a population estimate of 41.0 million. An interpolated figure for 1939 would be 40.8 million. The actual figure was officially estimated at 41.46 million⁵. A population total in 1939 1.6 percent higher than assumed would raise the household total pro-rata to 11,330,000. On this basis the population total would account for 30 percent of the difference between the estimated actual total of households in 1939 and the number implied by the estimate for 1941. Another important reason was the rise in marriage rates in the mid- and late 1930s compared with earlier in the decade; the census *Housing Report and Tables* was published in 1935 and so could not have taken on board the higher marriage rates. Higher headship rates could have been a contributing cause. In Table A.5 of *Historical Statistics of Housing in Britain*⁶ it is estimated that rising headship rates contributed about 120,000 to the total increase of 1,520,000 households between 1931 and 1939. This cannot be a very secure figure. Possible places where headship rates could have risen include more older people living independently for longer instead of becoming members of someone else's household.

B Actual Headship Rates for the First Time: The 1951 Census

Headship rates for England and Wales were first produced from the 1951 census through an innovation in processing census information, selecting a one percent sample. A one percent sample, rather over 400,000 records, could be analysed in much more detail than would be possible in the days before electronic data processing, from the full census. Table 2 shows the headship rates for 1951 derived from this source.

⁵ Registrar – General's Statistical Review of England and Wales, Text volume for 1938 and 1939 (published in 1947)

⁶ See reference ⁴

Table 2. Household Headship Rates in England and Wales in 1951

	(percent)
Age 15-39	
Married males	79
Unmarried, both sexes	4
Age 40-59	
Married males	96
Single males	27
Widowed and divorced males	68
Single females	29
Widowed and divorced females	78
Age 60 and over	
Married males	97
Single males	39
Widowed and divorced males	64
Single females	47
Widowed and divorced females	68

Source: Census 1951, *Housing Report*

These headship rates were used to calculate a hypothetical household total for 1931, from the 1931 population analysed by age, sex and marital status. This total was 10,265,000, only 32,000 different from the actual household totals, which conveyed an impression of overall stability in household headship rates. The 1951 headship rates were used in a section of the 1951 census *Housing Report* entitled 'Pointers to the future'⁷ which made a projection of households in 1975. It assumed a 90 percent headship rate for married males aged 15-39 instead of 79 percent, on the grounds that household formation was probably constrained by housing shortages caused by the war. But otherwise the 1951 headship rates were assumed to apply. The projected total for 1975 was 15,159,000 compared with 13,259,000 in 1951. The projected increase in households in the quarter-century was 1.9 million, equivalent to an average of 79,000 a year, distinctly less than the increase projected for 1931-41.

The interest in the projection of households in 1975 is not in the figure itself which is over 2 million below the actual figure but in the method. Actual headship rates from the census were applied to population projection to produce projected totals of households in the future years, for the first time. It was made possible by an innovation of the census, analysis of a one percent sample.

⁷ Census of England and Wales 1951, *Housing*, pages cxxviii to cxxix

C The Early and Mid-1960s: Hypothetical Increases in Headship Rates

In the early and mid-1960s there was a strengthening of interest in the long term prospect for the British economy, and specifically for housing. Making a projection of future numbers of households was however problematic at this time, for the 1961 census showed that the total of households in England and Wales had risen by 12 percent since 1951, whereas a hypothetical total calculated from the 1951 census headship rates was only 5 percent higher than the 1951 total. Headship rates had not remained stable, as assumed in the calculation in *Pointers for the Future*. On the contrary they had risen; and given that the assumption of long term stability of headship rates had been falsified, further increases after 1961 would be a reasonable assumption. In contrast to the 1951 census, no 1961 census headship rates were published, so that it was not seen whereabouts in the different age ranges, and sex and marital statuses, the increases in headship rates had occurred. Hypotheses had to be used, with the constraint that the hypothetical headship rates had to produce household figures that in total agreed with the 1961 census.

Household projections that were part of assessments of future housing need were published under the auspices of the National Institute of Economic and Social Research (NIESR). The first of these was by Needleman⁸; the next by Paige⁹, and then by Stone¹⁰. In all three the projected increase in households to be housed was one part of an estimate of need for new houses to be built. In contrast to later estimates of future housing demand and need, housing the increase in the total of households was not the dominant part¹¹. All three of Needleman, Paige and Stone used very similar methods, with post-1961 headship rates put in by assumption, to give overall increases in headship rates that were consistent with the increases that there had evidently been between 1951 and 1961.

Needleman estimated the net increase in households in England and Wales between 1961 and 1980 at 1.85 million excluding the effects of international migration, and a further 300,000 for international migration, 2.15 million in all. Paige's and Stone's projections may be looked at together, as they used the same headship rates except for unmarried women under age 40. Their projected headship rates for 1961 (Stone), 1975 (Paige) and 1990 (both Stone and Paige) are shown in Table 3.

⁸ L Needleman, 'A Long Term View of Housing, *National Institute Economic Review*, November 1961

⁹ D C Paige, 'Chapter XII Housing, in W Beckerman and Associates, *The British Economy in 1975*, for NIESR by Cambridge University Press, 1965

¹⁰ P A Stone, *Urban Development in Britain: Standards, Costs and Resources, Volume 1: Population Trends and Housing*, for NIESR by Cambridge University Press, 1970

¹¹ See Chapter VII for discussion

Table 3. Actual (1951), Estimated (1961) and Projected (1975 and 1990) Headship Rates

	1951 (actual)	1961 (estimated)	1975 (projected)	(percent) 1990 (projected)
Age 15-39				
Married males	79	89	96	98
Unmarried, both sexes	4	4	6	13
Age 40-59				
Married males	96	97	98	98
Single males	27	30	33	35
Widowed and divorced males	68	70	72	75
Single females	29	32	35	37
Widowed and divorced females	78	79	80	81
Age 60 and over				
Married males	97	98	98	98
Single males	39	44	49	50
Widowed and divorced males	64	66	68	70
Single females	47	51	56	58
Widowed and divorced females	68	70	72	75

Sources: Paige, *op. cit.* Appendix Table 12.1; and Stone, *op. cit.*, Table 5.1

The projections took the married male headship rates to increase almost to unity, on the grounds that lower rates found in 1951 were due to housing shortages that would in time be made good. This was important since married men were 75 percent of all household heads in 1951. Otherwise small increases in headship rates were assumed, very similar across the demographic groups, both between 1951 and 1961, and after 1961 as well.

Paige's projection for households in 1975 was 18.42 million¹² which implied an average increase of about 140,000 households a year in the 1960s and the first half of the 1970s. Paige's projection was for Great Britain and so not directly comparable with the projection of 15,159,000 in 1975 quoted above¹³, which was for England and Wales. An approximate allowance for Scotland may be of reference to the net increases in households in England and Wales and in Scotland between 1951 and 1961. On that basis a figure for England and Wales consistent with Paige's projection for Great Britain would be about 16.7 million, hence an increase of about 135,000 a year. Part of the difference is due to the higher population projection used by Paige.

¹² Paige *op. cit.* page 369

¹³ See page 12 above

The Government of the day did not publish long term household projections or estimates. In 1965 in *the Housing Programme 1965 to 1970*¹⁴ it gave a figure of 150,000 a year (Great Britain) as the number of houses needed ‘... to keep up with new households being formed from a rising population’. In the early 1960s the Ministry of Housing and Local Government did however have an unpublished long term projection of households, which put the net increase in households between 1961 and 1981 at 2.2 million¹⁵ in England and Wales. This is close to Needleman’s projections at 110-115,000 a year for England and Wales from 1961 to 1980 or 1981. Paige’s projection published in 1965 was higher. The figure for England and Wales in 1975 derived from it (see above) implied an average increase of about 135,000 a year. For Great Britain Paige’s projected increase in households up to 1975 was an average of about 140,000 a year, which was fractionally lower than the Government’s figure for 1964-70. That the Government’s (and Paige’s) figures published in 1965 were about 20,000 a year higher than Needleman’s and the Government’s projections in 1961 and 1962 is probably due to higher population projections, because at this time projections of the adult population were being revised upwards due to increases in immigration from the Commonwealth. No additional information about headship rates became available.

¹⁴ Cmnd 2838 (1965) paragraph 3. See also *The National Plan*, Cmnd 2764, Chapter 17

¹⁵ From *Material for an Economic Map of 1980*, compiled by the author in 1962 when commissioned by H M Treasury to assemble and collate long term working assumptions, forecasts and projections made by Government Departments. The method was to assume that the divergence between a constant headship rate projection and the actual total of households in 1961 would grow at the same rate in the 1961-71 and 1971-81 decades.

CHAPTER III

Household Projections by Modern Methods: The First Two Decades

A Projections with Two Data Points: 1961 and 1966

By 'modern methods' is meant here projecting headship rate trends from comparable data for two or more years. The previous chapter showed the problem that existed in the early to mid-1960s where there was only one set of headship rates (for 1951) but evidence from the 1961 census household total showed that in the aggregate headship rates must have risen between 1951 and 1961, and so could reasonably be expected to rise further in future. But there was no direct evidence about which headship rates had risen, and by how much. Such evidence was first provided (in Britain) by special analyses of data from the 1961 and 1966 censuses of England and Wales, commissioned and paid for by the Ministry of Housing and Local Government. Household projections made with these data were first published in 1969¹⁶.

Electronic data processing, used for the first time in the 1961 census, made possible analyses that would not have been possible by the methods previously used. With the 1961 census, a 10 percent sample of census records was analysed to provide household heads and hence headship rates specific for sex, age and marital status. The 1966 census was designed as a 10 percent sample of the population, so that all the census records were analysed in the same way so as to produce data comparable to those for 1961. The 1966 census is unique in being taken five years after the previous census. In the early 1960s there was an increase in interest in planning (at all scales) and regional policy which led to concern that the rate of change of the population and its location was sufficiently rapid for decennial census information to become dated and then obsolete too quickly. A census was accordingly carried out in 1966, on a 10 percent sample basis, for reasons of economy, rather than a full census. Major problems were encountered, particularly with the sampling frame, and the 1966 sample census was widely regarded as a failure. Its suitability as a source of data from which headship rates could be derived was not significantly impaired, however. The decision, to carry out a sample census in 1966 resulted in comparable headship rates for projection purposes becoming available several years sooner than if only decennial census data could be used. Electronic data processing of the 1961 census, moreover, did not start well. Arrangements were made to make use of the Royal Army Pay Corps computer, which would have substantial spare capacity. But dealing with unforeseen changes in Services pay meant that the payroll work took up more computing time than expected, so that processing the census data was delayed. Nevertheless, headship rate data for two separate years became available at the beginning of 1969, from which headship rate trends could be derived.

The household projection work with data from the 1961 and 1966 censuses was undertaken by the Statistics Division of the Ministry of Housing and Local Government (MHLG). It was part of a set of major innovations in housing statistics, along with the House Condition Survey (subsequently English House Condition Survey and at the time of writing part of the English Housing Survey); and the Building Societies Mortgage Survey, (subsequently the Survey of Mortgage Lending, currently the Regulated Mortgage Survey). These surveys have continued to be run by the Statistics Divisions of the variously named Government Department responsible

¹⁶ 'Projection of numbers of potential households' *Housing Statistics Great Britain* No. 14, HMSO 1969 (August)

for housing policy in England¹⁷. The arrangements for producing household projections have been more varied.

The projections by MHLG from 1961 and 1966 census data were of 'potential households'. This concept was essentially of the number of separate dwellings needed, and differed from households in that it included all married couples irrespective of whether they lived as separate households; and excluded three-quarters of one-person households that were sharing a dwelling with someone else. Counting all married couples as potential households followed from an assumption that married couples living as members of someone else's household did so because housing shortages prevented them from getting a place of their own. That reflected conditions current at the time. It was recognised that not all married couples wanted to live as independent households, but this would be offset by lone parent families that were prevented from living as independent households by housing shortages¹⁸. Table 4 shows this first 'modern' household projection.

Table 4. 1966-Based Projections of Potential Households in England and Wales

	(thousands)			
	1966	1971	1976	1981
Married couple families	11,665	12,242	12,667	13,013
Lone parent households	1,037	1,034	1,064	1,110
One-person households (a)	2,094	2,324	2,487	2,630
Other households	918	855	825	812
Absent households	225	225	225	225
All potential households	15,939	16,680	17,268	17,790

Note: (a) excludes three-quarters of sharing households

Source: *Housing Statistics Great Britain* No 14 (August 1969)

The projected number of married couple families could be taken directly from the population projections by marital status. The method for projecting headship for the other types of potential households was: 'In general headship rates have been projected assuming that 1961-1966 trends will continue, but at a diminishing rate. Various detailed projection techniques have been used, but normally the projected change in a five year period has been constrained to about one-half in the previous five years'¹⁹. That was as much as could be done with only two sets of headship rates. The headship rates were for eight categories of households defined by age and sex: 15-29 for men and women separately; 30-44 for men and women separately; 45-59 (women) and 40-64 (men); and 60 and over (women) and 65 and over (men). Each of these categories was cross-divided by marital status; married; widowed or divorced; and single, in the sense of never married. The first projection from two sets of headship rates produced average increases of about 130,000 households a year in 1966-76 and 110,000 in 1971-81. The figure

¹⁷ The names include Department of the Environment; Department of the Environment, Transport and Regions; Office of the Deputy Prime Minister; and Department for Communities and Local Government

¹⁸ *Housing Statistics Great Britain* No. 14 (August 1969), p 79

¹⁹ See reference ¹⁸

for 1966-76 was close to the estimates of increases in households made in the mid-1960s by academic researchers and in the shorter term by the Government²⁰.

The total of potential households was not the only result of interest from the new projections which could not be produced by earlier methods. Separate figures for different types of households were an important innovation. The number of married couple households might be estimated from the projection of the marital status of the population. But there was no way in which other households could be divided into lone parent households, other multi-person households, and one-person households without the headship information extracted from the 1961 and 1966 censuses. The high proportion of the projected increase in potential households that were married couple families merits note: 1,350,000 (73 percent) out of the total increase of 1,850,000 potential households between 1966 and 1981. Married couple families came directly from the official projection of the marital status of the population, and so were not affected by the assumptions about the increase in headship rates in a five year period being half as great as in the previous five years. That assumption had a powerful effect on the projected increase in the other types of household of course.

Revised projections with headship rates projected from the 1961 and 1966 censuses (not revised before the 1971 census data became available) were produced in 1970 and 1971 when 1968- and 1969-based population projections became available. These were fairly similar. The 'absent households' did not appear in these projections. They were accommodated in lone parent, one-person and 'other' households. The 1969-based projection²¹ went a further ten years into the future, to 1991. The projected totals of households were 1971, 16.61 million; 1981, 17.68 million; 1991, 18.63 million. These were figures for England and Wales.

Only the brief discussion of projection methods quoted above was available until a much fuller description was published in D E Allnutt, R T S Cox and P J Mullock, *Statistics for Town and Country Planning, Series III. Population: No 1 projecting growth patterns in regions*, 1971. This was however published only in an informal way, as it could be: 'obtained for 3s 6d plus 9d postage from the Clerk of Stationery, Ministry of Housing and Local Government'. Whether any copies are extant at the time of writing is not known.

B Projections with Three Data Points: 1961, 1966 and 1971

The 1971 census produced a third set of headship rates, to be used along with the 1961 and 1966 rates for projecting future headship rates and therefore households. The effect of the 1971 census headship rates was dramatic. They showed that the previous assumption about future headship rates, that the increase in headship rates would halve between successive five year periods, was quite wrong. Headship rates other than for married couples had increased more between 1966 and 1971 than between 1961 and 1966. Taking 1971 census headship rates into the projection therefore had a very striking effect. This may conveniently be shown before considering the post-1971 projections in more detail. Table 5 compares the 1969-based household projections with only 1961 and 1966 data, used here because it included a projection for 1991, with the 1973-based projections, the first with 1971 census data included. The comparisons have to be in terms of potential households, as 1961-1966 based projections are only available on that basis.

²⁰ See pages 13 and 14 above

²¹ Published in *Housing Statistics Great Britain* No 20 (February 1971)

Table 5. Pre- and Post-1971 Projections of Potential Households in England and Wales Compared

	(thousands)					
	1961 and 1966			1961, 1966 and 1971		
	Census Data			Census Data		
	1971	1981	1991	1971	1981	1991
Married couple families	12,101	12,878	13,828	11,637	12,109	12,720
Lone parent households	1,115	1,149	1,174	1,077	1,130	1,144
One-person households (a)	2,483	2,657	2,777	2,951	4,127	4,986
Other households	909	887	885	895	786	732
All potential households	16,608	17,684	18,625	16,562	18,151	19,582

Note: (a) See note to Table 4

Sources: *Housing Statistics Great Britain* No 20 (1971) and *Housing and Construction Statistics* No 17 (1976) Table XV

The 1971 census showed that the number of married couples in England and Wales was nearly half a million lower than projected; and a much slower increase in the married population was projected as a consequence of rising divorce rates in 1960s and early 1970s. The post-1971 projections put the net increase in the number of married couple families at 470,000 in 1971-81 and 610,000 in 1981-91, less than two-thirds of the increases shown by the 1961-66 projections. For the other three types of household, the projected net increases shown by the post-1971 projections, 1,120,000 in 1971-81 and 820,000 in 1981-91 were about six times as great as the increases shown by the 1961-66 projections, 185,000 in 1971-81 and 143,000 in 1981-91. The contrast between the projections of one-person households (which were of 'potential' one-person households and so excluding three-quarters of one-person households who share) is even more striking. Projected net increases of 174,000 between 1971 and 1981 and 120,000 between 1981 and 1991 were replaced by 1,176,000 and 859,000 respectively.

The first set of household projections that used 1961, 1966 and 1971 census headship rates²², the 1973-based projections, included projections of potential households as in earlier projections, but also of households as defined in the census, i.e. all one-person households and excluding married couples living as part of someone else's household. This was the practice also with the 1974-, 1975-, and 1977-based projections. With the 1979-based projections, however, the concept of potential households was abandoned as 'inappropriate to the conditions of the 1980s'²³. For ease of comparison figures for households as defined in the census are used when discussing the 1974-, 1975- and 1977-based projections. Table 6 compares the projected numbers of 'potential' households with households defined as in the census.

²² The 1973-based projections used in Table 5, published in Department of the Environment, *Housing and Construction Statistics* No 17 (1976), Table XV

²³ Department of the Environment, *1979-based Estimates of Numbers of Households England the Regions and the Counties 1979-1991* page 4

Table 6. 1973-Based Household Projections for England: Potential Households and Households Defined as in the Census

	(thousands)		
	1973	1981	1991
Potential households			
Married couple families	11,064	11,423	11,985
Lone parent households	1,063	1,070	1,086
One-person households	3,051	3,898	4,696
Other households	822	742	696
All potential households	16,001	17,132	18,463
Households as defined in census			
Married couple households	10,825	11,174	11,709
Lone parent households	1,063	1,070	1,086
One-person households	3,343	4,111	4,828
Other households	822	741	696
All households (as defined in the census)	16,053	17,094	18,319

Source: *Housing and Construction Statistics* No 17 Table XV

The differences between potential households and households as defined by the census are not great; but in the particular projections in Table 6 the downward trend in sharing by one-person households causes the increase in potential households to be somewhat greater than in households as defined by the census.

How dramatic was the effect of including the 1971 data point in the household projections cannot be over-emphasised. The projected number of one-person households in 1981 was raised by nearly 1.5 million; and one-person households made up 74 percent of the projected net increase in households between 1971 and 1981 as against the 16 percent previously projected.

Revised household projections with headship rates projected from the 1961, 1966 and 1971 censuses were published as 1974-, 1975-, 1977- and 1979-based projections, derived from population projections with those base years. The 1974-, 1975- and 1977-based projections of households differ, owing to the population and marital status projections from which they were derived. They are compared in Table 7 in terms of what they show for 1991.

Table 7. Projections of Households in England in 1991

	(thousands)		
	1974-based	1975-based	1977-based
Married couple households	11,351	11,813	11,316
Lone parent households	1,210	1,229	1,385
One-person households	5,015	4,931	5,136
Other households	824	827	911
All households (census definition)	18,401	18,800	18,747

Source: *Housing and Construction Statistics* No 21 (1977) Table XVII; *Housing and Construction Statistics* No 25 (1978), Table XVIII; *Housing and Construction Statistics* No 29 (1979), Table XVI

The 1979-based household projections, published in 1981, were the last to be produced with 1961, 1966 and 1971 headship rates. They are of interest in showing how the projected totals of households and the mix of households changed from the first projections that included 1971 census headship rates.

Table 8. 1979-Based Household Projections for England

	(thousands)			
	1971	1979	1981	1991
Married couple households	11,005	11,098	11,066	11,315
Lone parent households	1,026	1,208	1,273	1,402
One-person households	2,928	3,848	4,107	5,131
Other households	823	811	828	844
All households (census definition)	15,779	16,965	17,274	18,692
Concealed married couples	244	137	121	76
Concealed lone parent families	157	187	204	240

Source: Department of the Environment. *1979 Based Estimates of Numbers of Households, England the Regions and the Counties* Table 2

Like-with-like comparisons with the 1973-based projections, the first to include data from the 1971 census, are most conveniently made of changes between 1981 and 1991. The 1979-based projection showed a larger increase in the total, 142,000 a year as compared with 123,000 a year. The increase in married couple households was much smaller, 249,000 in the decade as compared with 535,000 in the 1973-based projection. This was more than offset by a larger projected increase in one-person households, 1,024,000 as compared with 717,000 and to a lesser extent lone parent households which were projected to increase by 129,000 as

compared with only 16,000 in the 1973-based projections. These differences in projections of married couple, lone parent and one-person households were inter-related. Rising divorce rates resulted in changes to the marital status projections, with smaller proportions married and higher proportions divorced. Higher proportions divorced resulted in higher projected numbers of lone parent households and one-person households. Because, in 1981, 75 percent of divorced men and 86 percent of divorced women were household heads²⁴, higher proportions of the population divorced resulted not just in a different mix of household types in the projection but a higher projected increase in households in total.

The 1979-based household projections were distinctive in several ways. They were the first to be published as a priced publication (£15 net a publication of the Government Statistical Service) instead of as an entry in periodic publications of *Housing Statistics* or *Housing and Construction Statistics*²⁵. It was also the last household projection to be produced in-house by the Department of the Environment's Statistics Housing Division. Shortly after the 1979-based projections were published, pressures on the Division to reduce its headcount led to production of household projections being transferred to the Building Research Establishment (BRE), which had room for the post within its headcount. BRE was an agency of the Department of the Environment, but with its own staff total. Under this arrangement BRE did the technical work, but the Department of the Environment remained responsible for the household projections, which were published in its name.

For a time in 1980 and 1981, survival of production of household projection as a function of central government was subject to some doubt. The Government of the day saw no place for estimates of housing need derived from numbers of households; and a review of priorities for statistical work across all Departments (the 'Rayner Scrutiny' of the Government Statistical Service) looked for work that could be abandoned as of low policy use. Household projections survived owing to strong support from local authorities, particularly the counties. Regional and county projections could not be produced without national control totals. The 1979 based projections therefore went ahead after the Minister was assured that the methods were technically sound, indeed standard internationally. In the circumstances of the time this was something of an achievement²⁶. Plans to include a count of dwellings in the 1981 census had had to be cancelled because Department of the Environment Ministers refused to authorise the expenditure.

C Household Projections from Four Data Points including 1981

Data on household headship rates from the 1981 census were first used in the 1981 based household projections, which were published in 1985²⁷.

The 1981 census data on household headship rates did not have a dramatic effect on the projections like the 1971 data did. The projected total of households in 1991 was little changed from the 1979 based projection, though the mix of household types was different. Table 9

²⁴ Department of Environment, Transport, and the Regions, *Divorce, Remarriage and Housing* (the Department 2000), Table 3.2

²⁵ These entries are listed in the bibliography in *1979-Based Estimates of Households*, page F1

²⁶ Compare the Abbe Sieyes, who when asked what he had done during the French Revolution replied: 'I survived'

²⁷ Department of the Environment, *1981 Based Estimates of the Number of Households in England, the Regions, Counties, Metropolitan Districts and London Boroughs 1981-2001*

shows the comparison. Owing to the caveats about provisional and incomplete data from the census and a pre-1981 marital status projection²⁸, the 1983-based projection is used.

Table 9. Households in England in 1981 and 1991: Projections Pre- and Post- the 1981 Census

	(thousands)			
	Pre-1981 Census		Post-1981 Census	
	(1979-based)		(1983-based)	
	1981	1991	1981	1991
Married couple households	11,066	11,315	10,842	10,689
Lone parent households	1,273	1,403	1,360	1,728
One-person households	4,107	5,131	3,915	4,971
Other households	828	844	1,043	1,272
All households	17,274	18,692	17,161	18,661
Concealed married couples	121	76	145	83
Concealed lone parent families	204	240	172	166

Source: *1983-Based Estimates of the Number of Households*, Table 2 and Table 7 above.

Including the 1981 census data in projections of headship rates made little difference to the projected household totals. The mix of types of household shown by the 1981 census was however considerably different from the mix projected forward from 1971. Married couple households were 220,000 fewer; one-person households 190,000 fewer; lone parent households 90,000 more; and 'other' households (multi-person households that were neither married couples nor lone parents) 220,000 more. Principally as a consequence of the marital status projection (produced by the Government Actuary's Department), the number of married couples was projected to fall, for the first time since projections started in 1969. The rise in lone parenthood was carried into the household projections as was the rise in 'other' households. The number of 'other' households was previously projected to be nearly the same in 1981 as in 1971 (see Table 8). But the 1981 census showed the figure to be more than 200,000 higher. 'Other' households are multi-person households that are neither married couple nor lone parent households. They therefore included un-married cohabiting couples. Cohabiting couples were not recorded in the census until 1991; but as part of the work to produce post-1991 household projections that included cohabiting couples, estimates were made of cohabiting couples in 1971 and 1981²⁹. There were 204,000 in 1971 and 500,000 in 1981, so it is highly likely that the increase in 'other' households was mainly due to the growing prevalence of cohabitation. That the increase in 'other' households was not as great as the increase in cohabiting couples could be explained by some cohabiting couples with children being mis-classified as lone parent households.³⁰

²⁸ Department of the Environment, *1981 Based Estimates of the Number of Households*, Page 4

²⁹ Department of the Environment, *Projections of Households in England to 2016*, Table I

³⁰ *Projections of Households in England to 2016* page 92

Four sets of household projections were made with the 1961, 1966, 1971 and 1981 census headship rates. They are compared in summary form in Table 10, which shows projections of households in 2001 according to household type.

**Table 10. Projections of Households in England in 2001:
1981-, 1983-, 1985-, and 1989-Based Censuses**

	1981-based	1983-based	1985-based	(thousands) 1989-based
Married couple households	11,155	10,746	10,350	10,142
Lone parent households	1,699	1,832	2,074	2,336
One-person households	5,530	5,653	6,184	6,354
Other households	1,121	1,250	1,475	1,771
All households	19,506	19,481	20,083	20,603

Sources: Department of the Environment, *1981-based Estimates of Numbers of Households* (1985), Table 2; *1983-based Estimates of Numbers of Households* (1986), Table 2; *1985-based Estimates of Numbers of Households* (1988), Table 2; *Household Projections England 1989-2011*, (1991) Table 2

The major changes in the projected household totals were the result of higher projections of the population. The changes in the projected mix of households were due to changes in the projections of marital status, with the proportion married revised downwards due to lower marriage rates at young ages, higher divorce rates and lower re-marriage rates among divorced people. In the 1981-based projection of households in 2001 57 percent were married couple households; in the 1989-based projection 49 percent.

There were a number of changes to the sources and methods for the projections. As with the original projections, the projections with 1961, 1966 and 1971 census data had used four age groups: under 30, 30-44; 45-59 (women) and 60-64 (men); and 60 and over (women) and 65 and over (men). The 1981-based projections in contrast used 5 year age ranges up to 70-74 and then 75 and over. The 1983-based (and subsequent) projections used 5 year age ranges up to 80-84 and then 85 and over, i.e. 15 age ranges in total. In the 1985-based projections non-census data were used for the first time, data from the Labour Force Survey (LFS). These data provided evidence about changes in headship rates since the last census. Owing to the small size of the LFS sample in comparison with the 10 percent of the census from which the 1981 census headship rates were produced, the LFS data had only a small effect. The 1989-based projections also used LFS data, in the same way as in the 1985-based projections.

A new method of projecting headship rates was introduced with the 1989-based projection, the first change since the original projections in 1969. The new method used a cohort analysis for projecting headship rates. The method is described in Annex C of *Household Projections in England 1989-2011*. This method of projecting headship rates was carried forward into the extensively revised system for household projections introduced post-1991.

CHAPTER IV

The 1991 Census and a New Model for Household Projections

A Changes in 1991 in Household Projection Sources and Methods

The 1991 census was the first to ask about cohabitation ('living as a couple'). The number of cohabiting couples was given by the census and made it possible to distinguish five types of households: married couples, cohabiting couples, lone parents, one-person households and other households, in place of the four that there had been previously. The projection system had to be restructured to take on board cohabitation as a household arrangement, which provided an opportunity to make other improvements. Chief of these was to replace the concepts of household head and headship rates by household representative and household representative rates. It is this change that is the reason for the term 'new model' being used in the chapter title. This new concept and the reasons for adopting it may conveniently be discussed before the problem of the data sources for cohabitation before 1991.

The term 'household head' was not used in the 1981 and 1991 censuses; instead 'first person' was used. For household projection work the husband in a married couple household was always taken as the head, even where someone else had been entered as first person. But otherwise whoever was entered as first person was taken as head. Anomalies could result, and concept of household headship had its critics as being out of tune with present day (and earlier)³¹ ideas about marriage and family life. For the 1991 household projections a new concept was introduced, the 'household representative', which was purely a demographic term, and independent of the order in which household members were entered on the census form. Five household types were distinguished: (i) married couple household, which contains one or more married couple families; (ii) cohabiting couple household, which contains one or more cohabiting couple families but no married couple families; (iii) lone parent household, which contains one of more lone parent families but no married couple or cohabiting couple families; (iv) other multi-person household, a multi-person household which is not a married couple, cohabiting couple, or lone parent household; and (v) a one-person household.

The husband is the household representative in a married couple household, and the male partner in a cohabiting couple household and the lone parent (obviously) in a lone parent household. In households where there is more than one couple or lone parent family the household representative is determined by order of precedence and then age. In a household that includes both a married couple and a cohabiting couple, the husband in the married couple is the household representative. Similarly, the male partner in a cohabiting couple household is the household representative if the household includes a lone parent family as well. In households with two married couples, or two cohabiting couples, the oldest married man or male partner is the household representative. These rules, and the rather more complex rules for 'other multi-person households' select a household representative unambiguously from census records without any effect of the order in which household members are entered on the census forms. The household types are self explanatory except for lone parent households being defined as consisting of a lone parent with one or more dependent children, where 'dependent' means under age 16, or 16 to 18 if in full-time education. This was a change from

³¹ See Department of the Environment, *Household Projections in England to 2016* (HMSO 1995) Annex A, where a cartoon from *Punch* in 1851 is reproduced which shows a formidable wife berating her husband for describing himself as the head of the family

the previous definition of a lone parent household, where the child or children could be of any age. A lone parent with more than one child counts as a lone parent household so long as at least one child is a dependent child in the sense just defined, even if there are non-dependent children as well. A lone parent with only non-dependent children counts as an 'other multi-person household'.

Introducing cohabitation in the 1991 census produced a major discontinuity with 1981 and earlier censuses. Cohabiting couples had been included, indistinguishably, with 'other' households and lone parent households. The headship rates for these household types in 1981 and earlier were therefore not comparable with any headship or household representative rate for projecting forward from 1991. For 1971 and 1981 an alternative source existed in the OPCS Longitudinal Study samples. For 1961 and 1966 there was no alternative source, so these years disappeared from household projection analysis. By 1991, though, these years were far enough back for little to be lost by not including them. The OPCS Longitudinal Study had been set up with census records from the 1971 census, whose dates of birth as entered in the census were on one of four specified days in the year. The primary purpose of the study was originally to study mortality. Death certificate information about persons born on one of the four sample days would be brought together with their census record. Age at death and causes of death could therefore be studied in relation to personal circumstances. In 1981 the census records of persons recorded as born on the sample dates were added. Some of these 1981 records were those of persons whose 1971 records were in the study data base; some were of people not present in England and Wales in 1971, or possibly missed by the census. Having 1971 and 1981 census information about the same individuals enabled transitions to be studied, for example housing tenure in 1971 and 1981 of Longitudinal Study sample members who in 1971 were married but in 1981 divorced. 1991 and 2001 census records for persons with one of the four birth dates were subsequently added. Owing to the form in which they were held, the 1971 and 1981 Longitudinal Study samples could be used as if they were cross-section samples.

As census samples the 1971 and 1981 Longitudinal Study samples did not distinguish cohabiting couple households. Cohabitation had therefore to be imputed. The way in which this was done is described in the report on the post-1991 household projections³². Potential cohabiting couples were first identified, and the probability that they were actually cohabiting estimated from information in the General Household Survey Family Information Section about the proportion of potentially cohabiting couple households that actually cohabited. Within the limits of sampling, the General Household Survey provided a check on the estimate of cohabiting households. Table 11 compares the original household totals in 1971 and 1981 with the post-1991 estimates for those years, with cohabiting couples distinguished.

³² Department of the Environment, *Projections of Households in England to 2016* (HMSO 1995), pages 65-66

Table 11. Estimates of Households according to Type in 1971 and 1981

	(thousands)			
	1971		1981	
	Original	Post-1991	Original	Post-1991
Married couple households	11,005	11,249	10,842	11,012
Lone parent households (a)	1,026	378	1,360	626
One-person households	2,928	2,944	3,915	3,932
Other households	823	1,168	1,043	1,235
Cohabiting couple households	-	204	-	500
All households	15,779	15,942	17,161	17,306

Note: (a) In the 'original' columns, all lone parent households; in the 'post-1991' columns lone parents with dependent children

Sources: Department of the Environment, 1979 *Based Estimates of Numbers of Households*, Table 2; 1981 *Based Estimates of Numbers of Households*, Table 1, *Household Projections in England to 2016*, Table I

The reduction in the number of lone parent households is due to households with only non-dependent children being classified in 1991 as other multi-person households, as well as some lone parent households being counted as cohabiting couples. Similarly the higher figures for 'other multi-person households' are the result of more households with only non-dependent households being transferred in than cohabiting couples transferred out.

B The 1991-Based Projections

The 1991-based household projections for England are summarized in Table 12, with the 1971 and 1981 household estimates shown for comparison. For ease of comparison projected figures are shown for 2001 and 2011, not the other quinquennial figures. The figures for 2016 are shown because the increase from 1991, almost 4.4 million, became a headline figure and the focus of a mass of controversy and criticism.

Table 12. Summary of 1992-Based Household Projections for England

	(thousands)					
	1971	1981	1991	2001	2011	2016
Married couple households	11,249	11,012	10,547	10,217	10,037	9,945
Cohabiting couple households	204	500	1,222	1,447	1,549	1,579
Lone parent households	378	626	981	1,202	1,259	1,257
Other multi-person households	1,168	1,235	1,350	1,671	2,051	2,240
One-person households	2,944	3,932	5,115	6,509	7,875	8,577
All households	15,942	17,306	19,215	21,046	22,769	23,598

Source: *Projections of Households in England to 2016*, Table I

The 1992-based projections³³ were published with a much fuller report on their sources and methods, and a more extensive commentary. Included was an analysis of the sources of the projected increase in households during the projection period; and the components of the difference from the previous (1989-based) projections. Table 13 shows the components of the projected net increase in households.

Table 13. Components of Previous and Projected Net Increases in Households 1992-Based

	(thousands)				
	Adult population total and age structure	Marital status	Household representative rates	Remainder	Total
1971-1981	825	-193	645	86	1,363
1981-1991	1,300	-186	665	131	1,910
1991-2001	1,222	-69	603	75	1,831
2001-2011	1,136	114	444	29	1,724
1991-2016	2,955	108	1,207	113	4,384

Source: *Projections of Households in England to 2016*, Table II

Table 13 shows that arithmetically two thirds of the projected increase in households between 1991 and 2016 was the result of the projected increase in the population. If the projected changes in marital status are added because it was an official projection like the population projection to be taken as given, the purely demographic part of the projection accounted for 70

³³ The terms '1992-based' is used in the sub-title of the projections because the population projection from which they were derived is 1992-based.

percent of the total. Projected increases in household representative rates accounted for 28 percent. Because the purely demographic components of the projections were so important, *Projections of Households in England to 2016* included detailed accounts of the national population projections (Annex C) and the national projections of marital status (Annex D). Also included was an analysis of the components of the difference between the 1991-based projection of households and the 1989-based projection which it superseded. Table 14 shows the components of the difference between the projected increases in households between 1991 and 2021 (the end year of the 1989-based projection).

Table 14. Analysis of Difference between Projected Increase in Households in 1991-2011 in 1989- and 1992-Based Projections

	(thousands)
Increase shown in 1989-based projection	2,817
Projected growth of population	+729
Marital status	-81
Institutional population	-15
Higher household formation rates	+439
Inclusion of cohabitation	-351
Other	+16
Total net difference	+737
Increase shown in 1992-based projection	3,555

Source: *Projection of Households in England to 2016*, page v

A higher population projection made a major contribution to the upward revision to the household projection as did the more rapid projected increase in household representative rates. That household representative rates projected from 1971, 1981 and 1991 should rise considerably more over the period from 1991 to 2011 than did headship rates projected from 1961, 1966, 1971 and 1981 is interesting and important in the history of household projections, but exactly why is not known. Why including cohabiting couples as a separate type of household reduced the projected growth in the number of households is too complicated to attempt to summarise here. It is explained fully in Annex G of *Projection of Households in England to 2016*.

When published in 1995 the 1992-based household projections aroused a storm of controversy, as they showed a much faster increase (175 - 180,000 a year) than any previous household projection. If fed through into land use planning policy, they would raise considerably the amount of land required for building. Demonstrating how much of the increase came from projected increases in the population, and so to be taken as given by the Department of the Environment in producing the projections, did little to obviate attacks on the projection procedure. Showing the importance of the population projections in this context focused public attention on them, including the assumption of net inward migration at 50,000 a year in place of the previous assumption of balance, taking one year with another. This change appeared to

have previously gone largely un-noticed; but its significance for the projected number of households brought it criticism. In this respect the 1992-based projections were a turning point, with net inward migration rising and having an increasing impact on the growth of the population and hence the projected increase in households.

After the 1992-based projections discussed at length above, there was one more projection with same method and 1971-1981-1991 data, the 1996-based projection; and three with full 2001 census data, the 2003-, 2004- and 2006-based projections.

C The 1996-Based Projections

The 1996-based household projections were produced by the Population and Household Research Group at the (then) Anglia Polytechnic University headed by Professor David King, as a consequence of the untimely death of Dr Ian Comer who headed the work at the Building Research Establishment³⁴. The projection method (or model) was the same as Dr Comer had developed for the 1992-based projections. Professor King's team also did the technical work on the 2003-, 2004- and 2006-based projections. Since the projection method for the 1996-based projection was the same as for the previous (1991-based) set, the 1996-based projections may be introduced by analysis of the components of the difference from the 1992-based projections. This was gone into in considerable detail in the report on the 1996-based projections *Projections of Households in England to 2021*, because unusually the 1996-based projections were lower than the previous projections. Each of the 1985-, 1989-, and 1992-based projections was higher than the previous projection. A reason for setting out very clearly and in full detail the technical explanation for the 1996-based projection being lower was to obviate any suggestion that the projections had been revised downwards in response to the storm of criticism aroused by the 1992-based household projections. Table 15 shows an analysis of the difference between the 1992-based and 1996-based projections of households in 2016.

³⁴ See page 21 above

Table 15. Comparison of 1992- and 1996-Based Projections of Households in England in 2016

	Household Type					(thousands)	
	Married Couple	Cohabiting Couple	Lone Parent	Other multi-person	One-person	Total	
1992 household projection	9,945	1,579	1,257	2,240	8,577	23,598	
Population	+84	+18	+25	+24	+8	+159	
Marital status	-761	+1,062	-8	-116	-574	-397	
Institutional population	+1	-	-	+1	+15	+17	
Household representative rates	-19	+1	+23	+23	-93	-65	
Total difference	-695	+1,081	+40	-68	-644	-285	
1996 household projection	9,251	2,660	1,296	2,172	7,934	23,313	

Source: Department of the Environment, Transport and the Regions, *Projection of Households in England to 2016* (the Department, 1999) Table F1

Table 15 shows that the reasons why the 1996-based household projection turned out lower than the 1992-based projections are complex. The population projection by itself would have raised the projected number of households. The 'headline' figure for net migration into the United Kingdom in the 1996-based population projection was 65,000 a year, compared with 50,000 in the 1992-based projection. How this higher population effect came to be more than offset by different estimates of marital status (including cohabitation) is discussed later in this chapter. Other tables in this section of the chapter are parallel to those in the previous section (on the 1992-based projection) which show the projection totals of households of each type and the components of the projected changes. After that, the reasons for why the marital status estimates in the 1996-based projections were so different are discussed and why they had such a powerful effect – a reduction of almost 400,000 – on the projected total of households in 2016.

Table 16. Summary of 1996-Based Household Estimates and Projections to 2021

	Household Type					(thousands)	
	Married Couple	Cohabiting Couple	Lone Parent	Other multi-person	One-person	Total	
1971	11,249	204	381	1,165	2,953	15,951	
1981 (a)	11,013	500	625	1,234	3,934	17,306	
1991 (a)	10,552	1,177	974	1,367	5,142	19,213	
1996	10,190	1,479	1,168	1,543	5,806	20,186	
2001	9,829	1,896	1,258	1,676	6,333	20,992	
2006	9,535	2,251	1,293	1,836	6,819	21,733	
2011	9,357	2,509	1,299	2,012	7,342	22,519	
2016	9,251	2,660	1,296	2,172	7,934	23,313	
2021	9,157	2,761	1,288	2,286	8,509	24,000	

Note: (a) Differs from Table 12 owing to revision to estimates

Source: *Projections of Households in England to 2021*, Table 1

Table 17 shows the components of the projected increase in households. The 1971-81 and 1981-91 components of change differ slightly from the figures in Table 13 owing to revision. The table is in ten year bands, with ten year equivalents for 1991-96 and 1996-2001 (i.e. double the figures published in *Projection of Households in England to 2021* for five year periods).

Table 17. Components of Previous and Projected Net Increases in Households 1996-Based

	(thousands)				
	Adult population and age structure	Marital status	Household representative rates	Remainder	Total
1971-1981	826	-192	636	85	1,356
1981-1991	1,301	-167	624	149	1,906
1991-1996 (a)	1,418	-292	668	130	1,924
1996-2001 (a)	1,158	-152	558	48	1,612
2001-2011	1,122	-13	405	14	1,527
2011-2021	1,242	7	231	3	1,481

Note: (a) Ten year equivalent

Source: *Projections of Households in England to 2021*, Table 4

The population projection made a powerful contribution to the projected increase in households. But perhaps the most notable feature in Table 17 is the way in which the contribution to household growth from projected increases in household representative rates diminished with time. The reason was that in an increasing number of categories of the population defined by sex, age, marital status and cohabitation, household representative rates for all types of household together were approaching unity.

The 1996-based household projections are distinctive in the very large change compared with the previous projection that was the result of an apparently technical change, a new method for projecting marital status. This method takes advantage of recent advances in computer software for dealing with complex multi-dimensional projections. It is superior to the previous method in that it depends on explicit assumptions about marriage, re-marriage and divorce rates, of deaths, marital status, and the marital status of migrants instead of projecting net changes. The previous method can be seen not to have dealt adequately with the ageing effects of the fall in first marriage rates at young ages, nor the degree to which improvements in male mortality would affect future numbers of widows³⁵. This improved method reduced the projected number of widows in 2011 (in comparison with the 1992-based projection) by almost half a million³⁶. That is the main reason why in Table 15 the projected number of one-person households was 570,000 lower due to marital status in 1996-based projections than in the preceding 1992-based projection and the total of all types of household nearly 300,000 lower. So large a change for such an apparently technical reason is unique.

Another way in which the 1996-based household projections are unique is that *Projections of Households in England to 2021* included analyses of sensitivity of the household projections to underlying assumptions and economic conditions. The official projections of the population included low and high variants, and these were the basis for variant household projections. The effects were calculated separately for variant assumptions about births, deaths and migration. The effect of net inward migration on the total of households in 2011 was calculated at 495,000 higher or lower for a 40,000 a year difference, plus or minus, in net migration.³⁷ The effect of the population is proportional and the same upwards and downwards. Variant household representative rates were also tested.

A further step in sensitivity testing was estimating the sensitivity of the household projections to economic conditions. The household projection system had long been criticised as mechanical, and deficient in ignoring economic conditions. As a step towards closing this gap, the Department of the Environment commissioned research in 1995 from the Department of Applied Economics, Cambridge, to model the rate of increase in the number of households as a function of economic variables, particularly income, as part of a model of demand and need for social housing. This model, with some further work by the Department of the Environment, Transport and the Regions, was used to estimate the effect on the number of households of the rate of increase of gross domestic product (GDP) in real terms, levels of real interest rates, and unemployment levels. The results are shown in Table 18, as the difference made to the number of households in 2021 if the differences in GDP, interest rates and unemployment levels applied continuously from 1996 to then.

³⁵ *Projections of Households in England to 2021*, Page 70

³⁶ *Projections of Households in England to 2021*, Table D9

³⁷ *Projections of Households in England to 2021* Annex G, Table G2

Table 18. Sensitivities of Projected Number of Households in 2021 to Economic Assumptions

	(thousands)
GDP per head	
+0.25 percent a year	+190
-0.25 percent a year	-150
Real interest rates	
1 percentage point higher	-230
1 percentage point lower	+260
Unemployment rate	
1 percentage point higher	-20
1 percentage point lower	+30

Source: *Projections of Households in England to 2021*, Table G9

That unemployment rates have a negligible effect on the increase in household numbers is perhaps a surprising finding. The effect of GDP and interest rates are fairly modest. Taken at face value they suggest that the rate of rise of household headship rates is only slightly sensitive to the economic climate. No sensitivity analysis of this kind was undertaken with any subsequent household projections, and interest in research in this area appears not to have been maintained.

D Post-2001 Census Household Projections

There was one hybrid post-2001 census household projection, and three purely post-2001 census projections made by the method introduced in the 1992-based projection. The hybrid was the 'interim' projection published in 2004, which applied the 1996-based household representative rates to a post-2001 census projection of the population. A reason why this was worth doing was that the 2001 census showed that the growth of the population in the 1990s had been over-estimated, so that in the short and medium term, estimates of the future population needed to be revised downwards. The three purely post-2001 projections were 2003-, 2004- and 2006-based, and were published in 2006 (March), 2007 and 2009. That a fully post-2001 projection was not published until 2006 appears to have been due in large part to the problem about the 10 percent sample of the census with the data required for calculating household representative rates.

The hybrid projection need not be discussed further here. The 2003-based projection was the first to have household representative rates projected from four census data points, 1971, 1981, 1991 and 2001. Before discussing these projections reference is necessary to the post census estimate of households in 2001 and the revisions to the household totals back to 1971. The census produced a population total one million lower than previously expected and a household total half a million lower, 20,451,000 as compared with 20,998,000 in the 1996-based projection. Subsequent investigations by the Office for National Statistics (ONS) reduced the population shortfall, and to a lesser extent the shortfall of households. The final household figure according

to ONS was 20,523,000 at mid-2001. A case could be made for a rather higher figure³⁸, but for household projection purposes ONS's judgment was accepted that many of the additional population members 'found' by post-census investigations were additional members of enumerated households rather than of whole households found. The 2001 census led ONS to conclude that the upward adjustment in the 1991 census for under-enumeration had been too great, so that the 1991 population estimate was revised downwards. That required the estimate of the number of households in 1991 to be revised downwards as well. Table 19 shows the estimated numbers of households, analysed by type in 1971, 1981, 1991 and 2001 as revised in 2007.

Table 19. Revised (2007) Estimates of Households in England 1971-2001

	(thousands)			
	1971	1981	1991	2001
Married couple households	11,242	11,008	10,528	9,709
Cohabiting couple households	196	485	1,161	1,788
Lone parent households	385	625	977	1,476
Other multi-person households	1,212	1,289	1,407	1,387
One-person households	2,977	3,956	5,094	6,163
All households	16,012	17,362	19,166	20,523

Source: Department for Communities and Local Government, *Housing Statistics 2007* Table 4.4

Comparison with the 1996-based projected figures for 2001, necessarily in terms of proportions, shows lone parent households to be higher and other multi-person households lower in the post-census estimates, but married couple households, cohabiting couple households and one-person households (together 86 percent of all households) little different. The 2003-, 2004- and 2006-based household projections were not published in reports such as the *Projections of Households in England to 2016 and Projections of Households in England to 2021*. They were published as 'Statistical Releases' by the Office of the Deputy Prime Minister (the 2003-based projections) and then by the Department for Communities and Local Government (the 2004- and 2006-based projections). These releases were short with only a limited amount of information. Further detail was published in 'Live Tables' on Departmental web-sites, and in annual *Housing Statistics* volumes. Additional detail, e.g. numbers of household by type according to age, sex and marital status of household representative, was made available in response to requests by users of projections. But none of this included the components of projected changes in number of households, or the components of difference between the new projection and its predecessor, that were in the reports on the 1992- and 1996-based projections. Comment on the post-2001 projections is therefore limited. For the 2003-based projection (but not the others) there is partial information available about components of change and components of difference. Table 20 summarises the 2003-based projection.

³⁸ See A E Holmans *Research Report Households and Dwellings in England in 1991 and 2001* (Department of Land Economy, University of Cambridge 2004). Chapter IV where a figure of 20,614,000 is suggested

Table 20. 2003-Based Projections of Households in England: Analysis by Type of Household

	(thousands)				
	2001	2006	2011	2016	2021
Married couple households	9,709	9,409	9,170	9,024	8,935
Cohabiting couple households	1,788	2,161	2,567	2,895	3,148
Lone parent households	1,476	1,642	1,735	1,794	1,837
Other multi-person households	1,387	1,447	1,531	1,621	1,698
One-person households	6,163	6,825	7,562	8,370	9,164
All households	20,523	21,485	22,566	23,705	24,781

Source: Department for Communities and Local Government, *Housing Statistics 2006*, Table 4.3

Comparison with the 1996-based projection (Table 17 above) shows first the much larger projected increase in households in total – one-and-a quarter million higher. The components of change in the 2003-based projection and of the difference from the 1996-based projections are shown in Table 21. The 2003-based projections from which they are taken was not the final projection, hence differences from Table 20.

Table 21. Components of Change in Numbers of Households in the 2003-Based Projections and of Differences from the 1996-Based Projections

	Components of Change	Components of Difference
Population (increase in total and change in age structure)	3,459	987
Marital status	- 47	-15
Household representative rates	1,042	381
Remainder	153	112
Total	4,607	1,464

Source: Household Projections Peer Review working paper

Although the figures in Table 21 must be taken with some reserve owing to their status, they can be taken as showing that most of the projected increase in households came from the population projection from which they were derived. Higher population projections also explained arithmetically two-thirds of the difference from the pre-2001 census projection.

A new 2004-based population projection was the occasion for a 2004-based household projection to be produced, only one year after its predecessor. It is only slightly higher, with only minor changes in the figures for the individual households types. It is of interest particularly

because it was the demographic base of the housing targets announced by the Government in 2007.³⁹

Table 22. 2004-Based Projections of Households in England: Analysis by Type of Household

	(thousands)			
	2001	2006	2021	2026
Married couple households	9,709	9,415	8,978	8,898
Cohabiting couple households	1,788	2,181	3,204	3,424
Lone parent-households	1,476	1,655	1,882	1,928
Other multi-person households	1,387	1,452	1,708	1,775
One-person households	6,163	6,816	9,200	9,951
All households	20,523	21,519	24,973	25,975

Source: Department for Communities and Local Government, *Housing Statistics 2007*, Table 4.4

In total the 2004-based projections were slightly higher (by 0.8 percent) than the 2003-based projections that they superseded; and the increases were very similar for each household type. An issue raised about the 2004-based household projections when still current was whether they tended to be too high through not taking account of lower rates of household formation by recent immigrants from outside the United Kingdom. Attention was called to this in *More Households to be Housed – Where is the Increase in Households Coming From*⁴⁰, which presented data on the household status of persons born outside the United Kingdom cross-analysed by the length of time since they entered the UK. This information showed that household formation rates among persons who had entered the UK less than 5 years and 5-10 years before were lower than among the UK born population, but that the difference was smaller among immigrants who had been in the UK longer. The household projection procedure assumed implicitly that household representative rates among immigrants were no different (specific for age, sex and marital status) from the population as a whole. This would make little difference when immigration was projected to run at fairly low levels, but was more serious when the 'headline' net migration assumption was 130,000, the figure in the 2004-based population projection.

Immigration was even more important in the 2006-based projections, where the medium term 'headline' figure for the United Kingdom was net inward migration of 190,000 a year. This assumption about migration, together with a larger assumed improvement in longevity, produced a much higher population projection and therefore household projection. This projection is summarized in Table 23, for the same years as in Table 22 to assist comparison.

³⁹ See page 59 below

⁴⁰ By Alan Holmans and Christine Whitehead. Published by the Town and Country Planning Association as *Tomorrow Series Paper 5*, October 2006

Table 23. 2006-Based Projections of Households in England: Analysis by Type of Household

	(thousands)			
	2001	2006	2021	2026
Married couple households	9,709	9,395	9,123	9,129
Cohabiting couple households	1,788	2,188	3,323	3,574
Lone parent-households	1,476	1,663	1,919	1,976
Other multi-person households	1,386	1,446	1,735	1,816
One-person households	6,163	6,822	9,339	10,178
All households	20,522	21,515	25,439	26,674

Source: Department for Communities and Local Government, *Housing Statistics 2009*, Table 4.1

The 2006-based projections were in substance a scaling up from the 2004-based projections, to a larger increase, an average of 258,000 a year between 2006 and 2026, than in any previous projection. Because so much of the increase compared with the previous projection came from the assumption about migration in the population projection, the point about lower rates of household formation by recent immigrants was even more important than with the 2004-based projection. Attention was drawn to this by Alan Holmans and Christine Whitehead in *New and Higher Projections of the Population of England: a first look at their implications for households and housing*,⁴¹ where the effect of assuming that immigrants' household formation rates were the same as those of the whole population was estimated to over-state the projected increase in households by about 30,000. Even if that were accepted in full, it would still leave the increase in households at 230,000 a year, well above any past actual annual increase.

Separate from the possible effect of lower household formation by immigrants if their numbers were as assumed is what would be the effect of lower net inward migration. The published 2006-based household projections included a projection derived from ONS's nil net migration population projection⁴², which showed the total of households in 2031 almost 2.5 million lower than the principal projection. The average difference of 99,000 a year from the principal projection is however not a best estimate of how much smaller the net increase in households would be, if the gross flows of inward and outward migration were equal. ONS's projection was a 'natural increase' projection in which the population changes only through births and deaths, with no migration inwards or outwards. Outward migration would doubtless continue but the effect on the number of households from reducing inward migration to the level of outward migration would be less than 99,000 a year, probably around 70-75,000 a year⁴³. Even if the lower figure is nearer the mark, migration made a large contribution to the projected increase in households.

⁴¹ Published by the Town and Country Planning as *Town and Country Planning Tomorrow Series Paper 10*, September 2008

⁴² *Housing and Planning Statistics 2009* Table 4.4

⁴³ See reference 40 page 5, for an estimate of 55,000 as the reduction in the number of households that would result from gross inward migration being 130,000 lower.

The review of household projections commissioned by the Department for Communities and Local Government made recommendations in 2008 for radical changes to the projection method⁴⁴. But in the event the Department decided to use the existing method for projections published in March 2009.

⁴⁴ See next chapter

CHAPTER V

English Household Projections Reformed: The 2008-Based Projections

In 2008 the Department of Communities and Local Government commissioned Experian, a data and research firm⁴⁵, to review the Department's household projection system. It had attracted criticism on grounds of complexity, and it could not be developed to produce projections of households with children. On the first issue, whether the complexity really improved the accuracy of the projections, Experian used 1971, 1981, and 1991 data to project household representative rates in 2001, which could then be compared with actual 2001 household representative rates as derived from the census.

Household representative rate projections were first made from data specific for age only for both sexes together; then from age for males and females separately; and then for legal marital status and cohabiting status as well. The conclusion reached was that the very simple projections were as accurate as the more complex, if not more so. This finding led Experian to recommend a two-part projection method with household totals analysed either by age only or age and sex derived from a simple projection, and then projections of household types separately⁴⁶.

The projections of household totals analysed by age and sex could be produced from data for 1971, 1981, 1991 and 2001, which could maintain continuity with the 2003, 2004, and 2006 based projections. The projections of types of households could be produced only with data from the 1991 and 2001 censuses. The 1971 and 1981 data from the ONS Longitudinal Study were from samples too small to produce household representative rates for the types of household in the 1991 and 2001 censuses.

The Department of Communities and Local Government (DCLG) held extended consultations with users of household projections; DCLG considered using the two-part method of the 2006 based projections, but in view of the state of the consultation decided to use the existing method. The new two-part household projection was brought into use in the 2008-based projections, which were published in November 2010.

The first stage projections used household representative rates for 1971, 1981 (from the ONS Longitudinal Study samples), the 1991 and 2001 censuses, plus data from the Labour Force Survey post-2001. These representative rates were specific for age, sex, and status in a household-member of a couple, not member of a couple and widowed, divorced, or separated and not cohabiting and not a member of a couple, and single (in the sense of never-married) and not cohabiting.

These household representative rates were used with 2008-based population projections to project future numbers of households with representatives analysed by age, sex and status in the household. The projection method resembled that used previously, though with some important detailed differences⁴⁷, including no use being made of cohorts: but probably more

⁴⁵ As well as a credit reference service

⁴⁶ *Options for the Future of the Household Projections Model: A Final Report*. Experian for the Department for Communities and Local Government, 2008

⁴⁷ See Department for Communities and Local Government, *Updating the Department for Communities and Local Government's Household Projection Model to a 2008 Base: Methodology*

important is the Labour Force Survey (LFS) adjustment. Previous projections had used LFS data as a source of evidence about how household representative rates (and previously headship rates) had changed since the previous census. But relative to the 10 percent census sample used for headship rates and then household representative rates, the small size of the LFS led to data from it having only a small impact on the projection. But the way in which the LFS was used in the 2008-based projection was different: household representative rates for 2001-02 to 2008-09 calculated from LFS, by then with an enhanced sample size (about 200,000), were used for an “LFS adjustment” to the Stage 1 projection⁴⁸. The need for this adjustment came from the steep fall post-2001 in household representative rates at the younger ages shown by LFS.

The LFS adjustment reduced the projected total of households at the end of the projection period (2033) by 290,000⁴⁹ and in 2006 by about 170,000. Data for the years after the date of the most recent census had much more of an impact on household estimates than in any of the previous projections. A guiding principle throughout of household projections was that they were projections of medium to long term trends, and so could not pick up short term variations around the trends. The base totals for the households might themselves be projections, not direct estimates; the 1996 base totals for the 1996 based household projections used household representative rates projected from the 1971, 1981, and 1991 censuses, though with mid-year population estimates for 1996. Similarly the headship rates for the 1985- and 1989-based projections were projections from 1961, 1966, 1971 and 1981. The 1989 base figures took no account of what has actually happened between the 1981 census and 1989, apart from the very small effect (in the way it was then used) of LFS. The 2006 based projections took no account of the published figure for 2006 being probably 150,000 to 200,000 too high⁵⁰. The figure for 2008 in the 2008-based projections, 21,731,000, was probably about 250,000 lower than the figure that would have been produced by the previous method with the same information.

In the way year by year information from surveys about post-census changes in the household representative rates was used, the 2008-based household projections made an important advance. Survey information about the composition of households has improved with the enhancement of the Labour Force Survey and then (2010/11) the Integrated Household Survey. The samples are probably not large enough to measure accurately year to year changes in the number of households. But they are likely to make possible far better assessments of how actual changes compare with projected trends. That in time will throw up difficult problems of whether what is happening is short-term deviations from trend that will reverse, or whether the trend itself is changing.

Projections of Types of Household

The types of household that could be distinguished in Stage 2 of the projections were governed by the household types that were coded in the 1991 and 2001 censuses. Two or more census household types could be combined, but new household types not included in the census coding could not be added. With a small amount of combining of census household types, 17 household types were distinguished: one person households, male or female separately; couple households with nil, one, two, and three or more dependent children and no other persons;

⁴⁸ See *Updating Households Projection Model*, pages 10-11 for how the LFS adjustment was calculated and used.

⁴⁹ *Updating Household Projection Model*, page 11

⁵⁰ From comparison of published projection figures with direct estimate from “dwelling stock and household identities”. See reference (41)

couple households with nil, one, two, or three or more dependent children plus one or more other persons, lone parent households with one, two, or three or more dependent children and no other persons; lone parent households with one, two or three or more dependent children plus one or more other persons; and other multi-person households. Cohabiting couple households are not distinguished from married couple households. Not many taking part in the consultations set much store by this distinction.

The household types could be condensed to nine by combining the couple and the lone parent households with and without “other” persons, and combining the male and female one-person households. A comparison with the 2006-based projections and earlier projections back to 1992 can be made only for four household types: couple households (married and cohabiting); lone parent households; other multi-person households; and one-person households. But even at this high level of aggregation there are interesting comparisons to be made.

The procedure for projecting the households with children is necessarily complex. The numbers of households with none, one, two and three or more children are projected from the proportions of households with these numbers of children in 1991 and 2001, but the number of dependent children produced by this procedure must agree with the number of dependent children as shown by population projections analysed by age. How this was done is described in DCLG’s technical report on the projections. A consequence of this requirement to reconcile the number of dependent children in the household projections with the population projections is that assumptions about future births become much more important. Birth rate assumptions affect the projected child population and hence the mix of household types immediately, whereas the effect on projected numbers of household representatives comes in only after more than 16 years.

The main results of the 2008-based household projections at national level may be presented. The totals for all household types are shown, with comparison with the 2004- and 2006-based projections, then a comparison with those projections with condensed households’ categories. The detailed projections of types of households, the unique feature of the 2008-based projection, are then shown.

Table 24. 2008-Based Projections of Total Households in England Compared with Previous Projections

	2004-based	2006-based	2008-based
2001	20,523	20,522	20,523
2006	21,519	21,516	21,344
2008	-	-	21,731
2011	22,646	22,748	22,389
2016	23,837	24,107	23,608
2021	24,973	25,439	24,843
2026	25,975	26,674	26,016

Source: Department for Communities and Local Government, *Housing Statistics* 2007, Table 4.3; *Housing Statistics* 2009, Table 4.1, and 2008-based tables supplied by the Department

In considering the comparison between the 2008-based projection and the previous projection, it is important to recall that the 2008 projections are depressed by the “LFS adjustment” which amounts to 290,000 by the end of the projection period. If that is notionally added back, the figure for 2026 would be between 26,250,000 and 26,300,000, which is half way between the 2004- and 2006-based projections. The “headline” figure for net immigration to the UK in the 2008-based population projection (157,000) is almost half way between the 2004-based headline figure (130,000) and the 2006-based figure (190,000). The Department of Communities and Local Government’s technical report on the 2008-based projection⁵¹ did not include an analysis of components of difference from 2006-based projection on the lines of the analysis of the difference between the 1996- and 1992-based projections in Table 14 above. Net immigration is the strongest demographic influence on the size of the population of household forming age; so that because the difference between the 2008- and 2006-based projections compared like with like matches the difference between the immigration assumptions it seems fair to assume that population projections account for most of the difference in projected household totals. 2008-based projections of types of household, with comparable 2006-based projections, are shown in Table 25.

Table 25. Comparison between 2008-Based and 2006-Based Household Projections: Types of Household

2008-based	2001	2006	2016	2026
Couple household	11,441	11,394	11,727	12,060
Lone parent household	1,438	1,607	2,036	2,495
Other multi-person household	1,341	1,318	1,287	1,268
One-person household	6,304	7,024	8,558	10,194
All households	20,523	21,344	23,608	26,016
2006-based				
Couple household	11,497	11,583	12,146	12,703
Lone parent household	1,476	1,663	1,852	1,976
Other multi-person household	1,386	1,446	1,648	1,816
One-person household	6,163	6,822	8,460	10,178
All households	20,522	21,515	24,107	26,674

Source: *Housing and Planning Statistics* 2009, Table 4.1; and 2008-based tables supplied by DCLG

The projected mixes of types of household are very different. The 2008-based projection has a net increase of well over one million lone parent households between 2001 and 2026, twice as

⁵¹ See reference 47 above.

large as the increase shown by the 2006-based projection. Conversely the 2008-based projections showed an increase of not much more than 600,000 in the number of couple households as compared with 1.2 million in the 2006-based projections. More tables would be needed to study where the differences come from, to distinguish between lower couple formation rates at the young ages, more separations, and fewer couples re-forming. With the increased prevalence of cohabitation it is more difficult than formerly to distinguish between lone parent households that were once couple households and those that had never been couples.

The contrast in the 2008-based projections between changes in the number of couple and lone parent households can be taken further by studying the number of households with children. Large numbers of couple households do not include dependent children, either because the children have grown up and left, or (more rarely) there were none in the first place. Numbers of households in future years according to numbers of children are the most prominent innovation in the 2008-based projections. They are shown in Table 26.

Table 26. 2008-Based Household Projections: Analysis by Household Type

<u>Couple Households</u>	2001	2006	2016	2026
No children	6,966	7,137	7,628	7,979
One child	1,725	1,627	1,617	1,589
Two children	1,902	1,802	1,677	1,645
Three or more children	848	828	805	847
All households	11,441	11,394	11,727	12,060
<u>Lone parents households</u>				
One child	754	852	1,097	1,334
Two children	465	514	636	783
Three or more children	219	241	302	378
All lone parent households	1,438	1,607	2,036	2,495
One-person households	6,304	7,024	8,558	10,194
Other households	1,341	1,318	1,287	1,268
All households	20,523	21,344	23,608	26,016

Source: Projection tables supplied by DCLG

The 2008-based projections show the number of households with dependent children (under 16, or 16 - 18 if in full time education) increasing from 5.91 million in 2001 to 6.58 million in 2026. The net increase of 0.67 million households with children comes from a reduction of 0.39 million couple households with children and an increase of 1.06 million lone parent households. In 2001, 76 percent of households with dependent children were couple households; a quarter century late the projections indicate that the population will be only 62 percent. Putting the same figures another way, in 2001 one-quarter of households with children were lone parent households, by 2026 the projected proportion is nearly two-fifths. In 2001 just under 30 percent of households had dependent children; in 2006 the projected proportion is only 25 percent. Including households with children among the household types in the projection has thus produced some eye-catching results. But before becoming greatly concerned at the implications of so great a rise in lone parenthood and decline in numbers of two-parent families, it is necessary to consider how much confidence there can be about whether what is in the 2008-based projection will actually happen.

First to be noted is that the Stage 2 projections which project the numbers of households with children are from only two sets of observations. Trends projected from two points are subject to considerable changes when a third point becomes available. It is unlikely that adding 2011 data to 1991 and 2001 will have effects as drastic as adding 1971 to 1961 and 1966. But the potential effect of a third point is greatest where a steeply rising trend is projected from the first two points, as with lone parent households in the 2008-based projection. A two-point exponential trend, the form of projection used in Stage 2 of the 2008-based projection, is particularly at risk from a third point.

The 2008-based projections are novel, not just in the two-stage method and the very detailed household types, but in the use made of annual data after 2001. As noted above, survey data for tracking household representative rates have improved. That will make for problems in interpreting the relationship of estimated actual household representative rates to projected trend rates. The 2011 census was taken when recovery of the British economy from recession was far from complete, which poses potential problems about the position of 2011 in relation to long term trends.

CHAPTER VI

Regional and Other Sub-National Household Projections

Household projections are derived from population projections. So the areas for which household projections can be produced and how far into the future they reach depend on sub-national population projections. When the first “modern” household projections were produced in 1969 (see Chapter III) sub-national population projections were for regions only.

Subsequently projections for counties, London Boroughs, and Metropolitan Boroughs were added, and then County Districts. The principal uncertainty about sub-national population projections is internal migration within England, and between England and the other countries of the United Kingdom. The assumptions about future internal migration are based on past trends, usually in the previous five years. There are various reasons why past trends might not continue in future years, such as changing fortunes of locally important industries; but these cannot realistically be forecast any distance ahead. Internal migration, and in recent years of high immigration from overseas, the destination within the UK of immigrants, are far greater sources of uncertainty in sub-national projections than anything in the household projections process itself.

Sub-national household projections require sub-national projections of marital status and households representative rates. Base year values for these in sub-national areas are calculated from the census, to which are added the national projected changes. This is purely an arithmetical operation. No “catching up” is allowed for where, for example, the proportion of young single men living as one-person households is low relative to the national level; the same national projected increase in the proportion is added to the different base levels.

Household projections for sub-national areas are produced from population projections for the areas and marital status and household representative rates derived from the national projections in the way just described. Household projections for individual areas are derived independently from these items of data for each area, which creates a requirement for a procedure that ensures that the regional projections “add up” to the national total. This procedure is termed “regional controlling” which at times has proved troublesome.

Regional household projections may be conveniently compared in terms of regional percentage shares of the national projected increase in households. Up to and including the 1989-based projections the regions were the standard regions for statistical purposes. Local government reorganisation in 1974 produced some changes in regional boundaries, but not enough to materially impair comparability. For the projections from data for 1961 and 1966 only, shares of the projected increase in households between 1971 and 1981 in the 1966-based projection and between 1969 and 1981 in the 1969-based projection are shown in Table 27. A negative figure is shown for Greater London as the population there was projected to fall owing to planned and un-planned out-migration to the rest of England.

Table 27. Distribution between Regions of Projected Increases in Households in 1966 and 1969 Projections

	<u>1966 Base</u>		<u>1969 Base</u>	
	<u>1971 to 1981</u>		<u>1969 to 1981</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
	(‘000)		(‘000)	
Northern	46	4.3	77	5.7
North West	103	9.7	135	10.0
Yorkshire and Humberside	73	6.9	82	6.1
East Midlands	115	10.8	145	10.7
West Midlands	164	15.4	192	14.2
East Anglia	98	9.2	92	6.8
Greater London	- 39	- 3.7	- 60	- 4.4
Rest of South East	400	37.6	550	40.8
South West	103	9.7	136	10.1
<u>England</u>	<u>1,063</u>	<u>100.0</u>	<u>1,359</u>	<u>100.0</u>

Source: *Housing Statistics Great Britain No 14* (1969); and *24* (1972)

For the household projections produced from 1961, 1966, and 1971 census data points, a comparison can be made of regional shares in the projected national net increase in households between 1981 and 1991. These projections were derived from the 1973-, 1974-, 1975-, 1977-, and 1979-based population projections. The comparison is shown in Table 28. For reasons of space, only the percentage shares are shown.

Table 28. Regional Projected Shares of Increase in Households in 1981-91 from Projections with 1961, 1966, and 1971 Census Data

	(percent)				
	1973-based	1974-based	1975-based	1977-based	1979-based
Northern	4.6	3.2	4.6	4.2	2.7
North West	8.3	3.3	8.4	9.5	6.9
Yorkshire and Humberside	4.1	3.4	8.0	9.3	7.6
East Midlands	14.9	12.7	10.9	9.9	9.2
West Midlands	9.7	11.9	11.3	11.5	11.0
East Anglia	10.0	10.1	9.1	8.1	7.4
Greater London	- 17.7	- 16.3	- 6.0	- 1.6	3.7
Rest of South East	50.6	55.5	37.9	32.8	35.6
South West	15.5	16.3	15.9	16.3	15.8
<u>England</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
('000)	(1,225)	(1,164)	(1,425)	(1,415)	(1,417)

Source: *Housing and Construction Statistics (HCS) No. 17* Table XV; *HCS No. 21* Table XVII; *HCS No. 25* Table XVIII; *HCS No. 29* Table XVI; 1979-based *Estimates of Numbers of Households in England* Table 4.

Table 28 shows very large changes in the regional distribution of the increases in households in projections with 1961, 1966, and 1971 census data. Particularly striking is the contrast between large falls in the numbers of households in London shown by the 1973- and 1974-based projections and the increase shown by the 1979-based projections. The explanation lies in trends in out-migration from London to the rest of England, particularly to the Rest of South East (capital R, because of the abbreviation ROSE). The proportion of the projected national increase in households in the Midlands regions, East and West, was very stable, and similar to what it was in the 1961 and 1966 projections (Table 27). The shares of the three regions of the North of England were more variable between projections.

For the projections from 1961, 1966, 1971, and 1981 data, i.e. the 1981-, 1983-, 1985-, and 1989-based projections, the regional shares of the projected net increase in the numbers of households between 1991 and 2001 are compared in Table 29.

Table 29. Regional Projected Shares of Increase in Households in 1991-2001 from Projections with 1961, 1966, 1971, and 1981 Census Data

	(percent)			
	1981-based	1983-based	1985-based	1989-based
Northern	0.4	0	1.3	3.1
North West	3.3	3.5	3.9	7.8
Yorkshire and Humberside	6.8	5.5	5.0	9.0
East Midlands	11.4	12.0	10.8	11.6
West Midlands	11.7	8.4	8.3	9.1
East Anglia	7.9	8.2	8.6	7.3
Greater London	- 2.0	5.4	10.5	7.8
Rest of South East	42.1	40.2	36.2	30.1
South West	18.4	16.9	15.5	14.3
<u>England</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
('000)	(783)	(820)	(1,180)	(1,567)

Sources: *1981-Based Estimates of Numbers of Households in England, the Regions, Counties, Metropolitan Districts and London Boroughs 1981 – 2001*, Table 4; *1983-Based Estimates of Numbers of Households in England, the Regions, Counties, Metropolitan Districts and London Boroughs 1983 – 2001*, Table 4; *1985-Based Estimates of Numbers of Households in England, the Regions, Counties, Metropolitan Districts and London Boroughs 1985 – 2001*, Table 4; *Household Projections England 1989 – 2011*, Table 3.

Features of Table 29 that merit comment include the decline in the proportion of the increase of households projected to occur in the Rest of the South East, particularly in the 1989-based projections, along with the smaller declines in the proportions in East Anglia and the South West. Also to be noted is the increase in the 1989-based projections, in the share of the three regions of the North of England; and the higher share of the increase in households projected to be in London. The first two features are connected. The combined shares of the Rest of South East, East Anglia, and South West fell from 65.3 percent in the 1983-based projection to 51.7 percent in the 1989-based projection. At the same time the combined shares of the Northern, North West, and Yorkshire and Humberside regions rose from 9.0 percent to 19.9 percent. It is likely that the changes in inter-regional migration flows that gave rise to these shifts in regional shares of the projected increase in households can be explained by economic conditions. In the early 1980s the recession impacted more severely on the North of England, hence more out-migration from North to South. But in the mid- to late 1980s there was a boom in house prices in the South of England that led to suggestions of there being “two nations” in terms of house prices. That affected migration to the South from the North of England and the rest of the United Kingdom, which fed through into the assumptions about internal migration in official population projections.

From the beginning in 1969 to the 1989-based household projections, the regional projections were for standard regions for statistical purposes. By the time the first post-1991 household

projections were published (1995) the standard regions had been replaced by Government Office regions. These differed from the standard regions in two main ways. In place of East Anglia and the Rest of the South East there were the Eastern (or East of England) and South East regions. The Eastern region comprised the former East Anglia (Cambridgeshire, Norfolk, and Suffolk) plus Bedfordshire, Buckinghamshire, and Essex. At the opposite end of England Cumbria was transferred to the North West region to leave the North East region. The main regional tables from the 1992-based projections were published for Government Office regions, but a table for the former standard regions was given as well. This table is used in Table 30 below to provide a link between the two regional bases.

Table 30. Regional Projected Shares of Increase in Households in 1991-2001: 1992-Based Projection with Different Regions

	1989-based	1992-based Standard Regions	(percent) 1992-based G.O. Regions
North East	-	-	3.9
Northern	3.1	4.7	-
North West	7.8	9.6	10.4
Yorkshire and Humberside	9.0	8.9	8.9
East Midlands	11.6	9.8	9.8
West Midlands	9.1	8.5	8.5
East Anglia	7.3	6.3	-
Eastern	-	-	13.3
London	7.8	14.6	14.6
Rest of South East	30.1	25.2	-
South East	-	-	18.2
South West	14.3	12.4	12.4
<u>England</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>
('000)	(1,567)	(1,831)	(1,831)

Source: Table 29 above; and Department of the Environment *Household Projections in England to 2016*, Tables 3 and 12

Table 30 shows that in the 1992-based projections, the share of the projected total increase in households that was in the Rest of South East, East Anglia, and South West was only 43.9 percent, compared with 51.7 percent in the 1989-based projection and 65.3 percent in the 1983-based projection (see table 29 above). Assumptions about internal migration depend on the recent past; and reduced net inward migration to the South of England in the late 1980s (attributed above to the rise in house prices in the South relative to the Midlands and North) was still affecting migration assumptions in the 1992-based population projection.

The percentage shares of the 1992-based projection of the increase in households were however shares in a much larger total. In view of the controversy the 1992-based projections caused (see pages 28-29 above), the regional figures in the 1992-based projection may be examined more closely. Table 31 shows the regional components of the headline increase of almost 4.4 million in the national total between 1991 and 2016. The percentage shares of this total are also compared with the shares of the 1991 – 2001 increase in households shown in Table 30.

Table 31. Regional Shares in the 1992-Based Projection of the Increase in Households in 1991 – 2016

	<u>Projected Increases 1991 – 2016</u>		<u>Regional shares</u>
	(thousands)	(percent)	<u>1991 - 2001</u>
North East	166	3.8	3.9
North West	483	11.0	10.4
Yorkshire and Humberside	387	8.8	8.9
East Midlands	418	9.5	9.8
West Midlands	367	8.4	8.5
Eastern	582	13.3	13.3
London	629	14.4	14.6
South East	807	18.4	18.2
South West	545	12.4	12.4
<u>England</u>	<u>4,383</u>	<u>100.00</u>	<u>100.00</u>

Source: *Household Projections in England to 2016*, Table 3; and Table 30 above.

As a proportion the South East region's share of the projected national increase in households was considerably smaller than in previous years. But the absolute figure, 800,000, was eye-catching and led to a storm of criticism and protest from interests in the region where sensitivities to more land being used for house building were generally greater than elsewhere. "Concreting over the South East" was claimed to be the consequence if provision of land for housing was based on the projections.

To compare the regional shares of projected national increases in the 1992-, 1996-, 2003-, 2004-, 2006-, and 2008-based projections, projected figures for the 2006 – 2016 decade are taken. The projections are in smooth trends, so little difference is made according to which sub-periods are chosen. Table 31 shows that the regional shares in the 1991 – 2001 decade of the 1992-based projection are very little different from the whole projection period. In the 2008-based projection the figure for 2006 is depressed by the "LFS adjustment" (see page 40 above); but this was applied in the same way for all regions and so does not affect the regional shares.

**Table 32. Regional Shares in Projected Increase in Households in 2001 – 16
in Six Household Projections**

	(percent)					
	<u>1992-</u> <u>based</u>	<u>1996-</u> <u>based</u>	<u>2003-</u> <u>based</u>	<u>2004-</u> <u>based</u>	<u>2006-</u> <u>based</u>	<u>2008-</u> <u>based</u>
North East	3.5	2.4	2.8	3.6	3.5	3.8
North West	11.6	8.2	11.0	11.8	11.2	9.2
Yorkshire & Humberside	8.8	8.0	8.8	10.9	12.1	11.6
East Midlands	9.3	8.9	9.4	9.4	11.1	9.5
West Midlands	8.4	7.0	8.6	8.5	8.4	7.6
Eastern	13.3	13.6	13.0	11.8	13.3	14.2
London	13.8	17.4	16.9	17.2	13.0	15.4
South East	18.7	21.4	17.0	15.0	15.1	16.9
South West	12.5	13.1	12.4	11.9	12.3	11.8
<u>England</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
('000)	(1,701)	(1,580)	(2,220)	(2,318)	(2,592)	(2,264)

Sources: 1992-based projections, see Table 31 above; 1996-based, *Projections of Households in England to 2021*, Table 3; 2003-based, *Housing Statistics 2006*, Table 4.2; 2004-based, *Housing Statistics 2007*, Table 4.3; 2006-based, *Housing Statistics 2009*, Table 4.1; 2008-based, tables supplied by DCLG.

Table 32 shows that between the 1992- and 1996-based projections there was a partial reversal of the previous household trend for the shares of the southern regions in the total projected household increase to decline and the shares of the northern regions to rise. But with 2003-, 2004-, and 2006-based projections, the earlier trends reappeared. At the end of the 1990s and in the first half of the 2000s house prices rose strongly in London and the South of England relative to prices in the Midlands and North, and migration patterns shifted as they had done in the 1980s house price boom in the South. By the middle of the 2000s the rise in house prices in the South slowed down, and in the Midlands and North the rise in house prices quickened. Migration out of the South slowed down, which was fed into the 2008-based population projection and hence into the regional shares of the total increase in households in the 2008-based projections.

Tables 28, 29, and 32 show instances of very considerable changes in regional shares in the projected total increase in households within comparatively short periods of time. The extreme example is the Rest of South East's share changing from 55.5 percent in the 1974-based projection to 37.9 percent in the adjacent 1975-based projection (Table 28). A more recent instance is the Rest of South East share falling from 40.2 percent in the 1983-based projection to 36.2 percent in the 1985-based projection and 30.1 percent in the 1989-based projection. Comparing percentages does not tell the whole story, however. The base matters as well: the projected increases in Rest of South East in the 1991 – 2001 decade were 330,000 in the 1983-based projection, 427,000 in the 1985-based projection and 472,000 in the 1989-based

projection. With the actual number increasing in this way it is hardly surprising that large changes in the projected share of the national total increase in households did not attract critical comment.

Evidence of regional population projections (and hence household projections) changing, as a consequence of inter-regional migration flow responding to changing differentials in house prices between regions, appears convincing. It could appropriately be used in deciding how far to follow a new household projection for policy purposes. The existence of a housing market cycle in which house prices rise sooner and faster in the South than in the Midlands and North in the upswing but vice versa in a downswing seems fairly well established. But how to use it (if at all) in modifying the official household projection for a particular region would clearly be difficult.

Regional household projections have attracted increasing amounts of criticism, generally from local authorities and private organisations that would be more comfortable with smaller projected increases than those in the official projections. Many of the criticisms are unconvincing, and ignore the fact that migration flows within the United Kingdom must as a matter of logic and arithmetic sum to zero. If the population increase and hence projected increase in households in any one county were to be revised downwards in response to criticism, increases elsewhere must be revised upwards to balance. Use of regional and sub-regional household projections in policy contexts is considered further in the next chapter.

Population projections, and therefore household projections derived from them, are trend-based. As a matter of arithmetic, trends can be run on any distance into the future, without consideration of possible obstacles. As applied to urban areas without much undeveloped land, such trend-based projections can look less and less credible if run far into the future. This can be illustrated by household projections for selected London boroughs. In the 2004-based projections, taken here as an example, the projected increase in households between 2001 and 2026 exceeded 40 percent in seven boroughs. Five of these, Camden, Hammersmith and Fulham, Kensington and Chelsea, Tower Hamlets, and Westminster, are in Inner London. The others were Greenwich (which has some "Inner London" characteristics) and Richmond. Table 33 shows the estimated number of households in 2001, the projected figures for 2016 and 2026, and the percentage increase between 2001 and 2026. The figures for 2016 are put in to show that the projected increases in households continued strongly in the latter part of the projection period.

Table 33. 2004-Based Projected Increases in Households in Selected Inner London Boroughs

	<u>Number of households (thousands)</u>			<u>Percentage</u>
	<u>2001</u>	<u>2016</u>	<u>2026</u>	<u>increase</u>
Camden	91.7	129.6	148.8	62
Hammersmith & Fulham	75.6	97.3	111.3	47
Kensington & Chelsea	79.3	129.1	156.0	97
Tower Hamlets	78.7	108.3	122.6	56
Westminster	100.0	160.5	190.3	90

Sources: Tables supplied by DCLG

The population projections from which the household projections in Table 33 were derived assumed that the same proportions of inward migration flows to each area as in the base period will continue throughout the projection period. This assumption is the main reason why the population of Kensington and Chelsea, to take the extreme example, is projected to almost double between 2001 and 2026. To double the number of households in Kensington and Chelsea would imply a very large increase in the number of households sharing and living in very overcrowded conditions, or else large scale re-development to much higher densities. There is here an instance of the need for care about using projections as if they are forecasts. At District level, trend-based projections are particularly subject to spatial constraints – such as how much land is there which is not already built on, not in a Green Belt, and not in an Area of Outstanding Natural Beauty (AONB). This is less so at regional level. At this level there is a temptation of “policy based” projections in places where opinion is opposed to new house building. Such projections are often little more than wishful thinking in that to implement them would require powers that local planning authorities do not possess. To provide only for indigenous household growth plus a smaller than projected net inflow from other areas or from overseas can only influence the total amount of development; it cannot ensure that indigenous households get the housing notionally provided for them and not “outsiders”; nor can it control rising densities where pressure of inward migration is strong.

CHAPTER VII

The Way Household Projections have been used

National Projections in the 1960s and 1970s

At national level the main use of household projections has been for estimating the number of dwellings that will be required to meet needs for housing. The increase in the number of households to be housed has not been the only element of a calculation of the number of new dwellings to be built. Replacement of unsatisfactory dwellings has at times been important; so too has making good existing shortages. But it is impossible to make an estimate of the number of houses that will be needed without an estimate of the number of households to be housed; or conversely whether the number of houses being built is sufficient to keep up with need, in other words whether “enough” new houses are being built. Housing “need” and “enough” houses are value-laden terms. But there has been a sufficient consensus of opinion about their content to make estimates of housing need important for policy debates, if not always for policies actually implemented.

The way that household projections have been used may be looked at in historical sequence. It would seem fair to say that the estimate of the number of households in 1941 that was published in the 1931 Census Housing Report⁵² was made to demonstrate a use that could be made of an analytical technique developed originally for a different purpose – to assess whether and if so how much the number of households in 1921 was depressed relative to “normal”, and whether the number in 1931 was affected to some extent as well. The use of headship rates from the one percent sample of the 1951 census to estimate the number of households in future years as far as 1975 appears to be to bring out implications of a discovery that applying 1951 headship rates to the 1931 population produced a hypothetical household total very close to the actual total⁵³.

This finding appeared to suggest that the regular relationship between the total of households and the size and composition of the adult population discerned in the 1931 Census Housing Report still existed in 1951. The estimates of numbers of households in future years produced from it do not appear to have found their way into policy debates and discussions, however.

The context for household projections in the early and mid-1960s was different. There was a general growth of interest in long term economic prospects, particularly in research organisations. The three household projections discussed⁵⁴ were all parts of work done under the auspices of the National Institute for Economic and Social Research (NIESR). The work does not appear to have impacted directly on official policy, though it was part of a generally accessible body of knowledge. The early and mid-1960s were a time of changing views about the housing situation. During the mid- to late 1950s there was a widespread belief that the large number of houses built from 1952 onwards should be sufficient to make good the shortages that had accumulated during the War. This belief lay behind the decision to resume slum clearance, and to subsidise it heavily when “general needs” subsidies were reduced and then withdrawn. In the 1960s, though, shortage symptoms became more pronounced, and the 1961 census showed that the number of households had risen in a way that was not foreseen. There was

⁵² See page 9 above

⁵³ See page 11 above

⁵⁴ See page 12 above

consequently increased interest in the work that attempted to quantify housing needs. In 1965 the Government of the day responded by publishing *The Housing Programme 1965 to 1970*, which planned to raise the number of dwellings completed annually to 500,000 by 1970. This was a figure for Great Britain; it compared with 374,000 actual completions in 1964.

In a history of household projections it is necessary to explain why this very high target figure was not the result of a projected rapid rise in the number of households. As noted above⁵⁵, the figure in *the Housing Programme 1965 to 1970* was only 150,000 a year. The bulk of the need for new dwellings at a rate rising to 500,000 a year came from replacement of older dwellings, one million unfit, two million not worth improving. The idea that when clearing and replacing slums was approaching completion it should be followed by redevelopment of depressed residential areas gained ground and was endorsed by the Government of the day in 1963⁵⁶. Dwelling age was taken as an indicator of obsolescence. In *The National Plan*⁵⁷ it was stated that: "Most houses are out of date, even if they are not entirely worn out, by the time they are 80 years old, and if it were not for chronic and persistent shortages one would expect most houses of that age to be replaced as the normal thing"⁵⁸.

How large scale replacement of older houses that were not unfit in the legal sense would work was never thought through in any detail. Studies in the 1960s indicated that the rents that could be obtained for replacement dwellings built to modern standards would be too low, owing to the rent-paying capacity of the residents, for such replacement to be financially feasible without subsidy. Furthermore, an increasing proportion of older houses – 47 percent of pre-1914 dwellings in 1967⁵⁹ - were owner-occupied. No thought appears to have been given to how compulsory replacement of owner-occupied dwellings that were not unfit could be made acceptable. The growing proportion of dwellings acquired compulsorily for slum clearance that were owner-occupied contributed to increasing resistance to slum clearance. By the later 1970s slum clearance was falling away, and organised replacement of older houses that were not legally unfit never made any real headway. As a result, estimates of need for new house building came to be even more dependent on the projected increase in the number of households.

Slum clearance policy was still very active in 1969 when the first official household projections were produced. The context was however that over considerable parts of England – though certainly not in London – housing pressure was beginning to ease. The post-war situation where more houses were needed everywhere was beginning to change, with demand exercising a constraint for local authority housing as well as in the private housing market. What the long term prospect was likely to be attracted more interest. In this context better estimates of future household numbers were needed. The first official household projections published in 1969 were used in a housing forecast for England and Wales published in the following year⁶⁰. This forecast used a novel method, to estimate the number of households formed, terminating and moving year by year. These flows could be divided into separate housing tenures. Some of the flows of households were very difficult to forecast, so that the forecast of new households formed minus existing households terminating could not be taken

⁵⁵ See page 14

⁵⁶ *Housing*, Cmnd. 2050, para 161

⁵⁷ Cmnd. 2764, 1965

⁵⁸ *The National Plan*, page 171

⁵⁹ *Historical Statistics of Housing in Britain*, Table E.5

⁶⁰ A.E. Holmans, 'A Forecast of Effective Demand for Housing in Great Britain in the Nineteen Seventies', *Social Trends No. 1, 1970*

as a forecast of the net increase in households. The net increase in households shown by the household projections was therefore taken as a control total, to which the identified household flows – married new households plus immigrant households minus emigrant households minus households dissolved by death minus households dissolved in other ways – were reconciled by a table entry termed “other household formation and dissolution (net)”. The net increase in households provided by the official household projections was essential for using this method for making long range forecasts of demand for housing.

Another forecast of future demand and need for housing, from estimates of households formed, dissolved, and moving, was made for the Housing Policy Review published in 1977⁶¹. It depended for its control totals on the 1974-based household projection (see page 20). Its purpose was to provide a context for the review of the subsidy system for local authority housing, and finance for owner-occupied housing. It showed that a system for local authority housing subsidies would have to be capable of supporting a substantial programme of new house building. It also showed that a large increase was in prospect in the volume of mortgage loans that would be required, sufficient for doubt about whether the sources of funds for building societies – at the time the predominant source of house purchase loans – could expand sufficiently. The policy review therefore considered how additional funds might be raised, including a specialist intermediary body that might raise funds on behalf of building societies. This forecast was described as a “working tool” for the Housing Policy Review; but it was stated to be “... *not policy statements of any kind, nor are any of the figures targets*” (italics in the original)⁶².

National Projections in the 1980s and After

The Conservative Government that took office in 1979 had a policy of reducing tax rates and reducing inflation, but at the same time increasing expenditure on defence. For these aims to be compatible substantial reductions in civil public expenditure would be needed. Expenditure on the National Health Service, social security benefits, and most of education could not provide significant savings. That left expenditure on housing to bear the brunt of cuts (with a contribution from universities). The Government of the day did not attempt to argue that the provision for public expenditure on housing would be sufficient to meet housing need or even the most urgent need. It sought to change the terms of debate by asserting that how many new houses were built was not a matter for the Government. Allocation of capital expenditure on housing to local authorities was determined according to “what the nation can afford”. Local authorities would divide their allocation between new building and their existing housing stock according to their own judgement of priorities. And the house building industry would produce the number of houses that they judged they could sell. This view was expressed forcefully in the *Government’s Reply to the First Report of the House of Commons Environment Committee*⁶³ and reiterated when the Committee returned to the subject in 1981⁶⁴. The Secretary of State for the Environment was emphatic about not making estimates or forecasts of housing need. That would imply no interest by Government in household projections. As remarked on above (page 21) it was through the support of local authorities as users of household projections that they survived.

⁶¹ Department of the Environment, *Housing Policy Technical Volume Part I* (HMSO 1977) Chapter III

⁶² See reference (61), paragraph 1.

⁶³ Cmnd. 8105, 1980

⁶⁴ House of Commons Environment Committee Third Report, House of Commons paper 383, Minutes of Evidence, Q108 and Q109

The Government's tactics in 1980 and 1981 succeeded. There was no effective pressure about whether "enough" houses would be produced. The reductions in public expenditure on housing did not produce the strong opposition that might have been expected from experience in the recent past. Possible causes could include the diminishing esteem in which local authority housing was held, and signs that in many areas shortages were diminishing. It was at the end of the 1970s that "difficult to let" entered the vocabulary of housing. Sporadic efforts during the 1980s to arouse public interest in whether "enough" houses were being built had little success. National household projections did not come into policy debates and discussions in the rest of the 1980s and early 1990s.

Estimates of future housing need based on household projections came back on to the public agenda in the mid-1990s, partly as a result of prompting from the House of Commons Environment Committee. In May 1995 the Department of the Environment provided to the Committee a paper entitled "*Provision for Social Housing – Background Analysis, Households in England, Their Housing Tenure and the Housing Stock 1991 - 2001*"⁶⁵. The figuring in this paper depended on the official 1992-based household projections in a much more thorough-going way than did the 1977 estimates of future housing demand and need. In that work the household projections were used as control totals for the flows of households formed, dissolved, and moving. In 1995 the centrepiece of the estimate of future housing demand and need was a division of the household projection for a future year between households in the owner-occupied, private rented, and social rented sectors. Housing surveys and censuses had shown that the proportion of households in these tenures varied with the type of household and the age of the household representative. Age for age married couple households were most likely to be owner-occupiers; lone parent households the least. Among married couple households, the proportion of owner-occupiers was highest in the 30 – 44 age group and lowest at ages 65 and over. The calculation did not simply apply the base year (1991) tenure proportions to the projected population in 2001: it allowed for ageing of the population in the meantime. As only small numbers of households above the mid-40s became owner-occupiers except by purchase as sitting tenants, the proportion of owner-occupiers in the 55 – 59 age group in 1991 (for example) would be approximately the proportion in the 65 – 69 age group in 2001. Owing to the way the proportion of owner-occupiers varied with age, this "rolling forward" of age-specific tenure proportions would result in a projected increase in proportions of owner-occupiers, and therefore in the future number of owner-occupier households.

The procedure just described was subsequently used extensively by housing researchers in private institutions, in particular by the Cambridge Centre for Housing and Planning Research (CCHPR), though not by the Department of the Environment and its successors-in-title. The first study of future demand and need produced by CCHPR was *Demand and Need for Housing in England 1991 - 2011* by A.E. Holmans, published (and funded) by the Joseph Rowntree Foundation in 1995. It divided the projected total of households in 2001 and 2011 between owner-occupiers and renters; it then assumed that the number of private sector tenants would remain constant, with social sector tenants as a residual. By 1995 the long reduction in the size of the private rented section had clearly come to an end following de-regulation of new lettings, but an increase was not definitely established. In subsequent work, when the private rented sector was clearly increasing, the division of households that was projected was between a market sector and social sector. The market sector comprised owner-occupiers excluding (for technical reasons) those who entered owner-occupation by purchase as sitting tenants from the social sector, plus private sector tenants who were not receiving Housing Benefit. The social

⁶⁵ House of Commons Session 1995 – 96, Environment Committee Second Report, Housing Need Volume II, Minutes of Evidence and Appendices, pages 20 – 26.

sector comprised tenants of local authorities and housing associations, private sector tenants receiving Housing Benefit, and owner-occupiers who had originally bought as sitting tenants from the social sector. The logic of this division was that Housing Benefit enabled housing need to be met in the private rented sector as well as the social rented sector; and that how many households there were who were able to rent without recourse to Housing Benefit, rather than become home owners, did not affect the number that could not afford adequate housing unaided and hence needing social sector accommodation.

The estimates of future demand and need for housing published in 1995 were updated from time to time. In 2001 a study of future housing prospects similar to that published in 1995 but based on the 1996 household projections, *Housing Demand and Need in England 1996 - 2016*⁶⁶, was published. Separately Shelter, an organisation that campaigns for housing for people unable to obtain adequate housing unaided, sponsored research on housing need that used basically the same method, but concentrating on the social sector. The research programme, termed the Shelter Housing Investment Programme, ran from 1997 to 2000⁶⁷. Further work on future housing need was commissioned by Shelter. This comprised *Building for the future – 2004 Update*⁶⁸; then *Building for the future – 2005 Update*⁶⁹; and most recently *Homes for the Future – A new analysis of housing demand and need in England*⁷⁰. The *2004 Update* used a household projection made by CCHPR from the official 2002-based (i.e. post-2001 census) population projection and household representative rates, as no official post-2001 census projection had been published when the work was done. The *2005 Update* used the official provisional household projection. The 2008 report used the official 2004-based household projection, which was much higher than the 1992-based and 1996-based projections used for *Housing Demand and Need in England*. The reason for having another update only a year (actually one-and-a-half years) after the *2004 Update* was partly the announcement by the Government of a Comprehensive Spending Review, but also to make a comparison with estimates of the need for social housing in the *Barker Review of Housing Supply* (see below).

Publication of *Provision for Social Housing – Background Analysis* was not followed through into policies about the number of social sector dwellings built. The Labour Government that came to power in 1997 took little interest for a considerable time in whether “enough” new houses were being built. The policies announced in its 2000 Housing Green Paper – *Quality and Choice - a decent home for all* – were concerned primarily with upgrading the existing social sector housing stock, not with whether it was large enough in relation to need. Whether enough houses were being built, and if not why not, was forced on to the public policy agenda, not by signs of housing stress and shortages but by rapidly rising house prices. In 2003 the Government set up a review of housing supply, conducted by Kate Barker, hence the term “Barker Review” (officially the Review of Housing Supply). House prices had risen very rapidly, but house building had hardly increased at all. That house prices had continued to rise so fast was attributed to the lack of supply side response. The extreme rise in house prices was considered to have wider adverse effects on the economy as well as on affordability of housing. The lead in setting up the review came, significantly, from the Treasury, not the Department responsible for housing (then known as the Office of the Deputy Prime Minister). Work carried out for the

⁶⁶ By A. Holmans, published by the Town and Country Planning Association, London

⁶⁷ Publications included *How many homes will we need* by A.E. Holmans, N. Morrison, and C. Whitehead (1998); the *Technical Report* on the project by A. Holmans, M. Kleinman, C. Royce Porter, and C. Whitehead (2000); and the final report, *Building for the Future* by N. Bacon (2000).

⁶⁸ By A. Holmans, S. Monk, and C. Whitehead (2004)

⁶⁹ By A. Holmans, S. Monk, A. Ni Luanaigh, and C. Whitehead (2005)

⁷⁰ By A. Holmans, S. Monk, and C. Whitehead (2008)

Barker Review and used in its reports⁷¹ introduced a new dimension into analysis of increases in house prices. It showed the rate of rise of house prices to depend on the relationship between additions to the housing stock and the projected increase in the population. The population increase was the source of estimates of numbers of households, which were produced internally within the “model” of house prices, instead of using the official projections.

The conclusion that the rate of rise of house prices was strongly influenced by additions to the dwelling stock was hardly novel in itself. What was novel was a mathematical relationship which could be used to estimate the supply of new housing that would be required to achieve any specified house price target (e.g. 1 percent a year ahead of the general price level). It was recognised that the mathematical relationship could not be exact. But it gave powerful support to a conclusion that substantially higher numbers of new dwellings would be required to keep the rise in house prices in the medium to long term to something only modestly above the rise in the general price level. That the recent rate of new house building was much lower than this was attributed to constraints on new supply. That the system for obtaining sites for new housing was the main cause was strongly contested; but the perception that new measures would be needed to ensure an adequate supply of land for house building was firmly held by Ministers.

The mechanism to ensure an adequate supply of land for building was set out in the Government’s policy statement *Homes for the future: more affordable, more sustainable*⁷². Targets were stated of 2 million more dwellings (in the sense of net additions to the housing stock) by 2016, an increase of 240,000 more dwellings annually by 2016, and 3 millions more by 2020⁷³. More new homes were needed, because the housing stock was growing by 185,000 a year and households were projected to increase by 223,000 a year (the 2004-based projection). As part of the action to enable the targets to be met, Regional Planning Bodies were to review their Regional Spatial Strategies by 2011 “to reflect plans for 240,000 houses a year by 2016”⁷⁴. The Government would give guidance to Regional Planning Bodies at the beginning of preparation of Regional Spatial Strategies about the ranges of housing provision required over the next 15 – 20 years. This guidance would be based on the independent advice of the National Housing and Planning Advice Unit (NHPAU). Regional Planning Bodies and Examination-in-Public Panels would be expected to test these options⁷⁵.

Ranges of new housing provision region by region were published by NHPAU a year later, in June 2008⁷⁶. The 2004-based regional household projections had a central place in NHPAU’s ranges. In all regions the lower end of the range was derived from the national targets, expressed as an annual equivalent, apportioned pro-rata to the projected net increase in households in each region in 2006 – 2026. For the upper end of the range alternative procedures were used, with the higher of the two results taken. One of the procedures used the Department for Communities and Local Government’s *Affordability Model*⁷⁷. This was an

⁷¹ *Review of Housing Supply – Interim Report Analysis*, H.M. Treasury and Office of the Deputy Prime Minister (2003); and *Review of Housing Supply Final Report* (2004)

⁷² Cm. 7191 (July 2007)

⁷³ *Homes for the future: more affordable, more sustainable*, page 7

⁷⁴ *Homes for the future: more affordable, more sustainable*, page 8

⁷⁵ *Homes for the future: more affordable, more sustainable*, page 31, paragraph 8

⁷⁶ NHPAU, *Meeting the Housing Requirements of an Aspiring and Growing Nation, Taking the Medium and Long Term View. Advice to the Minister About Housing Supply Ranges to be Tested by Regional Planning Authorities* (2008)

⁷⁷ NHPAU, *Meeting the Housing Requirements of an Aspiring and Growing Nation, Taking the Medium and Long Term View. Advice to the Minister About Housing Supply Ranges to be Tested by Regional Planning Authorities* (2008), Technical Appendix A

econometric model of the housing system in England, in which house prices in real terms are a function of interest rates, real incomes, and the supply of housing developed from the model used by the Barker Review. From this model it was possible to derive the net annual increase in the housing stock that would stabilise house prices in relation to incomes. The other method, termed by NHPAU the “demographic” method⁷⁸, took as a base the projected net increase in households in each region, to which were added an increase in second homes, and vacant dwellings (to keep the vacancy ratio constant); also added was the backlog of un-met need as defined in CCHPR’s work for Shelter⁷⁹. Also added were estimates of potential one-person households that did not form between 2001 and 2007 due to housing becoming less affordable. NHPAU’s “ranges for testing” are shown in Table 34. The net increase in the dwelling stock in 2007- 08 is shown for comparison as the highest annual figure in the 2000s; the figures for 2005 – 06 are also shown as they were the most recent annual figures available in 2007 when the housing targets were set.

Table 34. NHPAU’s Ranges for Testing of New Housing Supply

	<u>Lower boundary</u>	<u>Upper boundary</u>	<u>New housing supply</u> <u>2007 - 08</u>	(thousands) <u>New housing supply</u> <u>2005 - 06</u>
North East	6.7	7.5	7.5	5.5
North West	26.6	29.5	26.1	20.6
Yorkshire and Humberside	23.8	26.4	20.3	16.1
East Midlands	23.4	24.6	20.6	20.1
West Midlands	19.0	22.6	17.8	18.7
East of England	30.6	39.2	26.7	24.6
London	33.8	42.6	27.6	24.9
South East	37.8	49.7	35.4	33.3
South West	29.8	34.8	27.5	22.9
<u>England</u>	<u>231.5</u>	<u>267.9</u>	<u>207.5</u>	<u>186.6</u>

Sources: NHPAU, *Meeting the Housing Requirements of an Aspiring and Growing Nation, Taking the Medium and Long Term View. Advice to the Minister About Housing Supply Ranges to be Tested by Regional Planning Authorities* (2008), Tables 1 and 12; and *Housing and Planning Statistics 2010*, Table 1.3

In the East of England, South East, and South West regions the upper boundary was from the affordability model, the new supply that would stabilise house prices in relation to income. In

⁷⁸ NHPAU, *Meeting the Housing Requirements of an Aspiring and Growing Nation, Taking the Medium and Long Term View. Advice to the Minister About Housing Supply Ranges to be Tested by Regional Planning Authorities* (2008), Technical Appendix B

⁷⁹ See page 58 above

the others it was the figure derived by the demographic method. That the demographic method produced a higher figure for London than did the affordability model is due to NHPAU's estimate of the number of one-person households that did not form.

How the mechanism of which NHPAU's ranges were a vital part would have worked, had it remained in force, is very hard to say. There would have been a long sequence for Regional Planning Bodies to prepare draft Regional Spatial Strategies, then for the drafts to be "tested" through Examinations-in-Public, then for the Planning Bodies to revise the drafts and submit them to the Minister, and the Minister to confirm them. But if the mechanism were to have worked, it would have been the strongest use of household projections for very controversial policies.

In the fairly short period between publication of NHPAU's *Advice to the Minister* and the policy being abandoned by the Coalition Government, it was the figures from the affordability model that attracted most criticism rather than those produced by the "demographic method". During the mid-1990s, though, the legitimacy of using household projections as a basis for estimates of housing need was challenged. It was contended that just as more roads generated more traffic, so too would more houses lead to more households being formed. If used as the basis for future provision of land for housing, the projections would be a self-fulfilling prophecy. Using past trends in household formation to project future numbers of households was in substance projection on into the future of past trends in housing supply. This contention was put forward with particular vigour by the Council for the Protection of Rural England (CPRE)⁸⁰, which claimed that the projections were "circular". An essential distinction here is between the national and sub-national level. Since there is no reason to think that in present day conditions the size of the dwelling stock relative to population affects the number of deaths and little evidence that it affects immigration from overseas, it can be said that the number of dwellings built cannot affect the population of household-forming age. Any effect of house building on the number of households would therefore be through the propensity of households to form from a population of a given size and structure. This question was discussed in some detail in Chapter 4 of *Housing Demand and Need in England to 2011*. It showed that the increase in the number of households due to rising household representative rates was very similar in 1961 – 71, 1971 – 81, and 1981 – 91⁸¹ even though in 1981 – 91 the increase in the number of households (adjusted for the reduction in the number of concealed families) was only 90,000 less than the increase in the dwelling stock as compared with over 500,000 in 1961 – 71 and 1971 – 81. This controversy was not renewed after the 1996-based household projections were published. In fact the post-2001 census projections, though considerably higher, attracted comparatively little attention and controversy.

Circularity in household projections in the sense just discussed is a completely separate question from whether the increase in households can be projected from purely demographic projections and time-trends in propensities to form separate households, or whether economic conditions are important as well, in the longer term as well as in shorter term variation around longer term trends. Research on the effect of unemployment, interest rates, and the rate of growth of GDP on the projected number of households was commissioned by the Department of the Environment in 1995, and findings published with the report on the 1996-based household

⁸⁰ CPRE, *Circular Projections: Household Growth, Housing Development and Household Projections* (1995). See also CPRE's Memorandum submitted to the House of Commons Environment Committee (see reference (68) pages 128 – 139)

⁸¹ *Housing Demand and Need in England to 2011*, Table 2

projections⁸². But interest appears subsequently to have lapsed. This could well become an important question again in view of predictions of a long period of very slow economic growth with low interest rates. Part I of the 2008-based household projections used household representative rates for 1971, 1981, 1991 and 2001. So if the rate of rise of real GDP really is an important influence on the propensity to form separate households, a projection from data for these years could well be too high.

Regional and Sub-Regional Household Projections

Regional and sub-regional household projections are very important elements of land use planning. Attention was drawn in Chapter III to support from local authorities being instrumental in the survival in 1980 – 81 of household projections as an activity of central government. Even if central government was unconcerned with future numbers of households, local planning had to be. Pressure on the planning system, particularly on provision for future increases in population and housing, increased when national household projections showed progressively larger increases. The future rate of increase in the number of households did not change much between successive household projections in the 1970s (see Tables 6 and 7 above) and in the first half of the 1980s. But the 1985-, 1989-, and 1992-based projections showed successively larger increases. These fed through into higher projections for regions and counties. Given widespread opposition to more development, the prospect of having to find space to accommodate larger projected increases in households inevitably aroused controversy.

To promote consistency between counties' Structure Plans and to ensure that sufficient provision was made for projected increases in households, the Department of the Environment (DOE) introduced in the 1990s a system of Regional Planning Guidance (RPG). This guidance included household-based new dwelling totals for each county within the region, set by a process that included negotiation between the Department (mainly its Regional Offices) and conferences of counties within the region, for example the South East Regional Planning Conference (SERPLAN). Draft regional guidance was issued by DOE and then "tested" by an Examination-in-Public (EiP). The household totals for counties in the Regional Planning Guidance were usually close to the projected totals, though sometimes with negotiated variations.

Local authorities were obliged to have regard to the county figures in the RPG, but had to "test" them, and could have different figures in their Structure Plans if they considered that they could succeed in defending these figures at an Examination-in-Public. Counties in pressure areas usually put forward lower figures than in the RPG, and hence lower than the household projections. Counties could argue for lower figures on demographic grounds, particularly that inward migration would be lower than assumed in the county population projections, or on broader policy grounds. These might include objections to having to provide for incomers; and "environmental capacity", a concept that advocates of smaller provision sought to develop. The EiP Panel might or might not be persuaded. It would usually be asked by representatives of house builders to keep to the RPG figures (except where new and higher projections have appeared); and by 'environmental' groups to go for lower figures. The Panel had then to make such modification to the draft Structure Plan as it judged necessary in the light of the EiP. The Department of the Environment (or its successor-in-title) would then confirm the Structure Plan or possibly make amendments of its own. With the coming into being of Regional Assemblies, preparing the equivalent of Regional Guidance passed to them.

⁸² See page 32 above

The process of deciding on the spatial location of new housing has thus been strongly influenced by household projections, and to a considerable degree dependent on them. With the growth of population and household numbers, these numbers have become extremely controversial. More households to be housed tend to be regarded as a burden and hence highly unwelcome. In places with a history and prospect of inward migration this makes the migration element of household projections (in reality the underlying population projections) highly contentious. It was common for assertions to be made about how much migration an area can “take” in terms that imply that the amount of inward migration is something that can be controlled by local authorities. Providing for housing only for local people is a variant on this theme.

At the time of writing (June 2012) the depressed state of the housing market and of the house building industry means that pressures for land to build houses is lower than in the past. The abolition of Regional Assemblies and Regional Spatial Strategies, and “top down targets” has therefore not attracted that much critical comment about what procedures there should be to ensure that plans at county level “add up” regionally and nationally for there to be spaces for “enough” housing (however defined) to be provided.

CHAPTER VIII

Successive Household Projections and Out-turns Compared

Table 35 brings together household projections with base years from 1969 (England and Wales) and 1973 (England) to 2008. Projected numbers are shown for census years (1981, 1991, and 2001) and inter-census mid-point years; and after 2001 at 5 year intervals to 2026. The 2006-based and 2008-based projections reached to 2031, but figures for that are not included in the table as there would be only two years to compare. That “out-turn” figures differ is due to revisions to population estimates in census years in the light of later information. That the figure for 1991 is lower in the 2003-based row than in the 1992- and 1996-based rows is due to the results of the 2001 census leading to the population total in 1991 being revised downwards. Revisions to mid-year estimates of the population in the 1990s made necessary by the results of the 2001 census explain why the figure for 1996 in the 2003-based row is 459,000 lower than that in the 1996-based row.

Table 35. Household Projections and Out-turns for England: Summary

	<u>1976</u>	<u>1981</u>	<u>1986</u>	<u>1991</u>	<u>1996</u>	<u>2001</u>	<u>2006</u>	<u>2011</u>	<u>2016</u>	<u>2021</u>	<u>2026</u>
<u>Projection base year</u>											
1969 (England and Wales)	17,368	17,832	18,286	18,753	-	-	-	-	-	-	-
1973 (England)	16,458	17,004	17,757	18,319	18,446	18,540	-	-	-	-	-
1974	16,606	17,237	17,863	18,401	-	-	-	-	-	-	-
1975	16,571	17,368	18,130	18,796	-	-	-	-	-	-	-
1977	-	17,332	18,085	18,747	-	-	-	-	-	-	-
1979	-	17,273	18,022	18,692	-	-	-	-	-	-	-
1981	-	17,161	17,925	18,723	19,245	19,506	-	-	-	-	-
1983	-	17,183	17,879	18,661	19,205	19,480	-	-	-	-	-
1985	-	17,184	18,044	18,903	19,617	20,083	-	-	-	-	-
1989	-	-	-	19,036	19,910	20,603	21,217	21,583	-	-	-
1992	-	17,306	-	19,215	20,177	21,046	21,857	22,769	23,598	-	-
1996	-	17,306	-	19,213	20,186	20,992	21,733	22,519	23,313	24,000	-
2003	16,561	17,362	18,131	19,166	19,727	20,523	21,485	22,566	23,705	24,781	25,713
2004	-	17,362	-	19,166	19,727	20,523	21,519	22,646	23,837	24,973	25,975
2006	-	-	-	-	-	20,522	21,515	22,748	24,107	25,439	26,674
2008	-	-	-	19,166	-	20,523	21,344	22,389	23,608	24,843	26,016

Comparisons between the successive household projections may conveniently be made in terms of projected increases in ten year segments, 1981 – 91, 1991 – 2001, 2001 – 2011 and 2011 – 21. Such a comparison focuses on increases rather than starting levels. Table 36 shows this comparison.

Table 36. Comparisons of Projected Increases in Households in Decade Segments

<u>Projection base year</u>	<u>1981 – 91</u>	<u>1991 – 2001</u>	<u>2001 – 2011</u>	<u>2011 - 21</u>
1973	1,225	221	-	-
1974	1,164	-	-	-
1975	1,428	-	-	-
1977	1,415	-	-	-
1979	1,419	-	-	-
1981	1,562	783	-	-
1983	1,478	819	-	-
1985	1,719	1,180	-	-
1989	-	1,567	-	-
1992	1,909	1,831	1,723	-
1996	1,907	1,774	1,527	-
2003	1,804	1,357	2,041	2,215
2004	1,804	1,357	2,123	2,327
2006	-	-	2,226	2,691
2008	-	1,357	1,866	2,454

Source: Derived from Table 35

In looking at the 1981 – 91 and 1991 – 2001 totals, it is important to note that with the 1983-, 1985-, and 1989-based projections, an increasing proportion of the projected increase in households in 1981 – 91 is derived from mid-year estimates of the population, not household representative rates. The projection element was the headship rates. Furthermore, 1981 – 91 was the decade when the full effect of the “baby boom” from 1956 to 1964 impacted on the population of household forming age. After 1964 the number of births year by year declined, hence a smaller increase in the household-forming population in 1991 – 2001 than in the previous decade. The low figures for the increase in households in 1991 – 2001 in the 2003-based and subsequent projections are caused by the lower than previously estimated population total shown by the 2001 census. The reasons for the lower figure for 2001 – 11 in the 2008-based projections were discussed in Chapter V, the result of data from the Labour Force Survey (LFS) being given a higher weight relative to pre-2001 trends in household

representative rates. LFS showed falls in household representative rates⁸³ post-2001; so raising the weight of the LFS data pushed the household representative rates downwards.

⁸³ Page 40 above

REFERENCES

- Allnutt, D.E. et al. *Statistics for Town and Country Planning Series III Population No. 1 projecting growth patterns in regions*, Ministry of Housing and Local Government, 1971
- Council for the Protection of Rural England, *Circular projections: household growth, housing development and household projections*, 1995
- Department for Communities and Local Government, *Household Projections 2008 to 2033 England*, 2010
- Department for Communities and Local Government, *Options for the Future of the Households Projection Model*, 2010
- Department for Communities and Local Government, *Updating the Department for Communities and Local Government's Household Projection Model to 2008 Base*, 2010
- Department for Communities and Local Government, *Homes for the future: more affordable, more sustainable* Cm. 7191, 2007
- Department of Economic Affairs, *The National Plan* Cmnd. 2764, 1965
- Department of the Environment, *Housing and Construction Statistics No. 17* (1976), *No. 21* (1977), *No. 25* (1978), and *No. 29* (1979)
- Department of the Environment, *Housing Policy Technical Volume Part I*, 1977
- Department of the Environment, *1979-Based estimates of numbers of households: England, the Regions and the Counties*, 1981
- Department of the Environment, *1981-Based estimates of numbers of households*, 1985
- Department of the Environment, *1983-Based estimates of numbers of households*, 1986
- Department of the Environment, *1985-Based estimates of numbers of households*, 1988
- Department of the Environment, *Household projections England 1989 – 2011*, 1991
- Department of the Environment, *Projections of households in England to 2016*, 1995
- Department of the Environment, Transport, and the Regions, *Projections of Households in England to 2021*, 1999
- Department of the Environment, Transport, and the Regions, *Divorce, Remarriage, and Housing*, 2000
- General Register Office, *Census of England and Wales 1861 Part III General Report*
- General Register Office, *Census of England and Wales 1931, Housing Report and Tables*
- General Register Office, *Census of England and Wales 1951, Housing*
- Holmans, A.E., *A forecast of effective demand for housing in Great Britain in the nineteen seventies* in *Social Trends No. 1*, 1970
- Holmans, A.E., *Housing Policy in Britain, A History*, Croom Helm, 1990

- Holmans, A.E., *Housing demand and need in England 1991 – 2011*, Joseph Rowntree Foundation, 1995
- Holmans, A.E., *Housing demand and need in England 1996 – 2016*, Town and Country Planning Association, 2000
- Holmans, A.E., *Households and dwellings in 1991 and 2001*, Cambridge Centre for Housing and Planning Research, 2004
- Holmans, A.E., *Historical Statistics of Housing in Great Britain*, Cambridge Centre for Housing and Planning Research, 2006
- Holmans, A.E. et al, *How many homes will we need*, Shelter, 1998
- Holmans, A.E. et al, *Homes for the Future – a new analysis of housing demand and need in England*, Shelter, 2008
- Holmans, A.E. and Whitehead, C.M.E., *New and Novel Household Projections*, Town and Country Planning Association, 2011
- Ministry of Housing and Local Government, *The Housing Programme 1965 to 1970 Cmnd. 2838*, 1965
- Ministry of Housing and Local Government, “Projections of numbers of potential households in 1968, 1971, 1976 and 1981” in *Housing Statistics Great Britain No. 14*, 1969
- Ministry of Housing and Local Government, *Housing Statistics Great Britain No. 20*, 1971
- National Housing and Planning Advice Unit (NHPAU), *Meeting the Housing Requirements of an Aspiring and Growing Nation, Taking a Long Term View, Advice to the Minister about Housing Supply Ranges to be Tested by Regional Planning Authorities*, 2008
- Needleman, N., “A Long Term View of Housing”, *National Institute Economic Review*, 1961
- Office of Population Censuses and Surveys, *Changing the Definition of a Household*, 1983
- Paige, D.C., “Housing” in Beckerman. W. and Associates, *The British Economy in 1975*, Cambridge University Press, 1965
- Stone, P.A. *Urban Development in Britain: Standards, Costs, and Resources, Vol 1: Population Trends and Housing*, Cambridge University Press, 1970
- H.M. Treasury and Office of the Deputy Prime Minister, *Review of Housing Supply – Interim Report, Analysis, 2003; and Final Report, 2004*

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