

Cambridge Centre
for Housing &
Planning Research

Independent Peer Review of Household Formation Rates

**Joint Core Strategy for Cheltenham
Borough Council, Gloucester City Council
and Tewkesbury Borough Council from
the Cambridge Centre for Housing and
Planning Research**

REPORT

January 2013



Independent Peer Review of the existing evidence base on household formation rates for the Joint Core Strategy for the Cheltenham Borough Council, Gloucester City Council and Tewkesbury Council areas

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Executive summary

One of the factors that determine how many homes an area needs is how people group themselves together into households: the greater the tendency to form separate households, the higher the number of homes needed.

There is clear evidence that the pattern of household formation has changed over the last ten years – and changed in ways that were not fully anticipated in the latest official projections. This report reviews the evidence on the trends in household formation rates and average household size and advises on the way in which household formation rates should be used to inform the assessment of housing requirements for the Cheltenham, Gloucester and Tewkesbury Joint Core Strategy.

The context

For the first time in over 100 years, average household size did not fall in England between censuses. The 2011 census found both more people and fewer households than expected, suggesting that there had been a significant departure from what had been assumed on household formation rates in the official projections.

Against this backdrop it is unsurprising that some have queried whether it is appropriate that estimates of household growth for the Joint Core Strategy should be based on the increasing household formation rates and falling average household sizes implicit in the latest DCLG household projections.

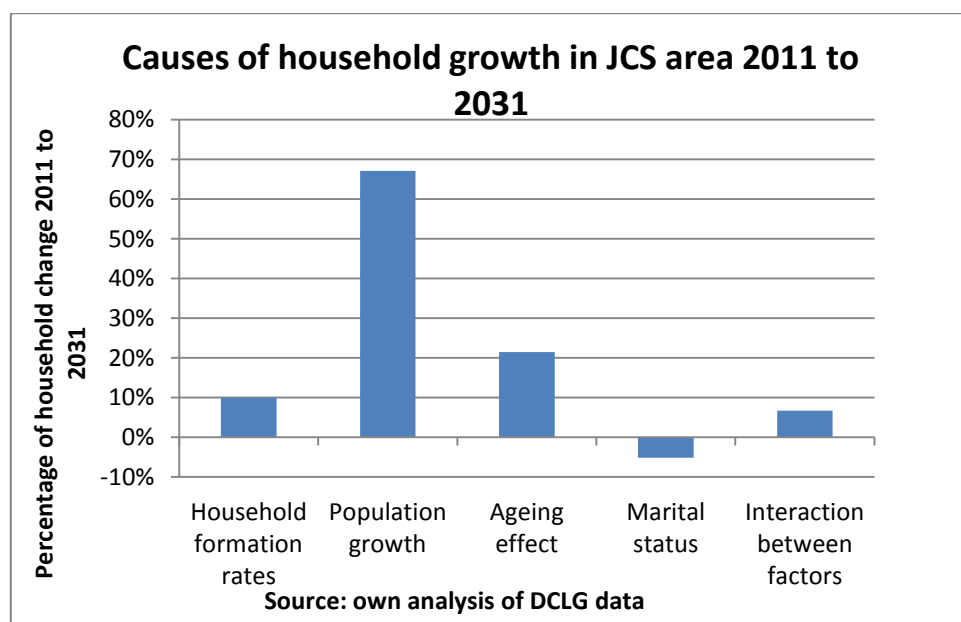
In order to reach a view on what the appropriate assumptions on household formation rates would be this review has sought to understand:

- Why household formation patterns have changed
- To what extent the changes seen nationally have affected the three JCS authorities
- Whether the changes are a short-term departure from the previous trend or indicate a new long-term trend.
- How much uncertainty there is in future household formation rates.

Key findings

- The extent to which household size changed between the 2001 and 2011 censuses has varied significantly between English local authorities. Over 100 saw an increase in their average household size. These included Gloucester, which was the most significantly affected of the three JCS authorities.

- ONS data released on 11 December 2012 shows that for all three JCS authorities there were significantly fewer single person households than suggested by the official projections. The differences for couples and families were much smaller. There were also more 'other households' than expected – a group that includes people living in shared flats and houses.
- An ONS study published in May suggests that there has been a 21% increase in adults aged 20-44 living with parents between 2001 and 2011 – amounting to around ½ million young adults. There is also a substantial body of academic research that indicates that house prices and income levels have a significant impact on household formation rates.
- The differences between the impact which changing household formation patterns have had on the three JCS authorities are consistent with the changes predominantly affecting single person households and probably younger single person households. Gloucester, which has been most affected, has both the smallest proportion of older people and most children.
- Household representative rates – the tendency of a particular group to form households – are not the only factor that determines how many households a given size of population produces, and hence the average household size. Older people tend to live in smaller households, so if the age profile of a population moves towards older age groups the average household size will fall. The 'marital status mix' also has an impact, albeit normally a much smaller one.
- The following chart suggests the relative importance of population growth; changing household formation rates; the 'ageing effect' and marital status would make to the projected increase in households in the JCS area between 2011 and 2031 according to the latest DCLG projections.



- As can be seen, household formation rates are only responsible for a small part of the projected growth. If household formation rates in 2031 were to be the same as in 2011 there would be 13% fewer households than in the DCLG projection

(once account is taken of the interaction between factors). This is a reasonably extreme scenario as it assumes there would be no return towards the previous trend.

- A scenario where there was no change in household size between 2011 and 2031 was also considered. This would generate around a third fewer extra households in the Joint Core Strategy area. This implies very considerable and continuing further reductions in household formation to offset the strengthening aging effect. This is both extremely improbable and most unlikely to be accepted by an inspector at a core strategy inquiry as a prudent planning assumption.
- There is evidence to suggest that housing markets tend to recover following a period of economic downturn or high house prices. Whilst the length and depth of the current downturn might be such as to make it unlikely that a full return to pre-2007 conditions will occur in the foreseeable future, it would not be prudent to plan on the basis of no return to towards the previous trend.
- This view is reinforced by the evidence suggesting that the changes that have occurred in household formation rates have predominantly affected single person households and probably younger single person households. This is in line with academic and international evidence. They are a group that is particularly vulnerable to high house prices and a tight mortgage market but is likely to respond reasonably quickly to better economic conditions.

Conclusions

- Even if there is no movement back towards underlying trends, the impact of the changes in household formation rates on the number of extra households formed in the Joint Core Strategy area between 2011 and 2031 is only likely to be a reduction of around 13%.
- Past performance of the housing market suggest that some return towards trend is likely even if complete recovery to the pre-2007 position may not occur in the near future.
- The prudent approach would be to plan on the basis of the projected household formation rates that underpin DCLG's 2008-based projections applied to the most recent population projections. Those figures should be updated to reflect DCLG's 2011-based household projections when they become available.
- Sensitivity analysis should be carried out looking particularly at lower household formation rates among younger households. The Core Strategy needs to be flexible enough to address variations both up and down.

1. The issues

- 1.1. There is clear evidence that patterns of household formation have changed over the last ten years, and changed in ways that were not fully anticipated in the latest official projections. If these changes were to continue over the Joint Core Strategy (JCS) plan period – 2011 to 2031 – they could have significant implications for the number, size and type of homes required.
- 1.2. In order to reach a view on what, if any, allowance should be made for changed household formation patterns in planning for housing in the JCS area, the following issues need to be addressed:
 - a. **What is happening to household formation patterns nationally and how is this affecting average household size?** Understanding what is happening is important if an informed view is to be taken on projections and the likely consequences over the next 20 years.
 - b. **How are the changes affecting the JCS area?** There is evidence that the changes in household formation patterns are not affecting all areas equally. Applying national average figures to the JCS area could give a misleading impression. A view is needed on the extent of the impact on the three authorities that make up the JCS area.
 - c. **Are the changes the beginning of a new long term trend or a short term departure from an established trend?** The housing market and the economy more generally are cyclical. If the changes in household formation patterns are the result of a cyclical downturn it would be inappropriate to give significant weight to them in planning for a 20 year period. On the other hand, if there is clear evidence that suggests that patterns have changed permanently it could be appropriate to adjust the assumptions made about household formation rates.
 - d. **What assumptions about household formation rates should be made for the JCS area and how much uncertainty should be planned for?** In light of the evidence gathered on the three previous issues a view needs to be taken on what an appropriate planning assumption would be. This should recognise the practical reality that the future is inherently uncertain and that no amount of analysis can determine with complete confidence what will happen. A view therefore needs to be taken on the extent of the uncertainty so that sufficient flexibility can be built into the plans made. The approach taken also needs to be consistent both with the expectations set out in the National Planning Policy Framework (NPPF) and what is likely to be acceptable at an examination in public.

2. Approach to review

2.1. The review involves the following stages:

- a. **A review of methods and assumptions on household formation rates used in preparing household projections for the JCS.** This has included a check that the methods used have produced the household numbers that would have been expected.
- b. **An examination of the available evidence on how household formation patterns have changed nationally over the last ten years.** This has included a comparison with what the latest official projections had envisaged.
- c. **An investigation of the available evidence on how the changes have affected the JCS authorities.** This has included data released from the 2011 census very recently (11 December 2012) and an examination of the differences between Cheltenham, Gloucester and Tewkesbury.
- d. **Economic growth scenarios.** Work here has focused exclusively on the impact that different household formation rates might have on the housing requirement needed to support economic growth as estimated by Nathaniel Lichfield and Partners.
- e. **Affordable housing.** Household formation rates play a key role in the approach used to estimate the requirement for affordable housing (i.e. social or intermediate housing). A few observations are made on the appropriateness of using modified housing formation rates in this area.
- f. **Evidence from academic studies and international experience.** The focus here has been on work that can inform the view taken on the extent to which the changes that have occurred are a short-term departure from the previous trend or the beginning of a different trend.
- g. **Written representations and submissions to the JCS authorities.** There is a very extensive body of representations and submissions. In the time available only a limited review has been practicable, relying heavily on summaries produced by the JCS authorities. The focus has been on identifying any additional issues that ought to be considered.
- h. **Recent case law.** Work here has focused on inspectors' reports on core strategy examinations which have raised issues about the estimation of housing requirements.
- i. **A consideration of how sensitive the results are to different assumptions on household formation rates.** This has included analysis by DCLG at the national level and specific analysis using the projections for the JCS authorities.

- j. **Bringing together the available evidence.** This has sought to identify both the best approach to estimating future household formation rates and the extent of the uncertainty that attaches to those estimates.

2.2. The rest of this report first discusses the role that household formation rates play in a demographic approach to projecting household numbers and then deals with each of the above areas in turn.

3. Household Representative Rates

- 3.1. In a demographic approach to projecting household numbers a projection is first made of the number of people who are likely to be present in the population and their age and marital status. Household numbers and types are then derived from the population projection by making assumptions about how the population groups itself together into households.
- 3.2. In order to make this second step a view needs to be taken of how many households are likely to be formed out of any given group in the population. Where two or more people come together to form a household, if double counting is to be avoided the household has to be counted as 'belonging' to one of those people and only one. This is done by identifying one member of each household as the 'household representative person' (HRP – what used to be called the 'head of the household'). The 'household representative rate' is the probability that a person is a household representative person. It can be a number between 0 and 1, where '1' means that all the members of the group are household representative persons and '0' means none are.
- 3.3. Household representative rates vary widely according to age, gender and marital status. In particular:
 - a. In a mixed sex couple the man is defined to be the household representative person. This means that, by definition the household representative rate of women living in mixed sex couples is '0'.
 - b. The vast majority of people over 60 live either as couples on their own or as single person households. As a consequence men over 60 tend to have household representative rates close to 1. Women over 60 who are single, divorced or widowed also tend to have household representative rates close to 1.
 - c. At the other end of the spectrum, young adults live in a variety of household arrangements. Examples include:
 - i. Living with their parents - in which case they won't be a household representative person.
 - ii. Living with a group of other young adults in a shared house or flat sharing facilities - in which case only one of the group will be a household representative person.
 - iii. Living with a partner as a couple – in which case in a mixed sex couple the man would be the household representative person.
 - iv. Living on their own in a flat or bedsit – in which case each would be a household representative person.
 - v. Living in a student hall of residence. Halls of residence are not counted as households. People living in halls of residence and other 'institutional arrangements' (such as care homes, barracks

and prisons) are subtracted from the total population before household representative rates are calculated.

The net result is that household representative rates for younger people tend to be much lower.

- 3.4. A key point to note is that, if the age profile of a community changes so that there is a larger proportion of older people, the number of households for a given size of population will increase (and the average household size fall) even if tendency of each age, gender and marital status group to form a household (i.e. the household representative rates) does not change. This might be termed an 'ageing effect'.
- 3.5. Household representative rates for past years can be calculated if the breakdown by age, gender and marital status of the population is known together with number, age and type of households. (Age in the household context means the age of the household representative person.) For each group the household representative rate is the number of households of which members of the group are the household representative person divided by the population in the group (less those living in institutional arrangements).
- 3.6. Having calculated household representative rates for each age, gender and marital status group for a number of dates (usually using the census years and data) it is possible to project trends forward to estimate what household formation rates might be in future years.
- 3.7. The official household projections (from which future household formation rates can be derived) are produced by the Department for Communities and Local Government (DCLG). They are based on population projections produced by the Office for National Statistics (ONS) and estimate household numbers, ages and types for each English local authority for a 25 year period.
- 3.8. At present the latest set of projections is the 2008-based projections produced in 2010. These cover the period 2008 to 2033 and are based on ONS's population projections for the same period. ONS has subsequently produced 2010-based population projections covering 2010 to 2035 and, in September this year, it released its Interim 2011-based subnational population projections for England. These take account of the emerging results from the 2011 census but only cover the ten year period from 2011 to 2021. DCLG is expected to produce its 2011-based household projections in the spring of 2013, although it is not clear how far these will be able to take account of the 2011 census.
- 3.9. The household formation rate projections that underpin DCLG's 2008-based projections are based on the 1971, 1981, 1991 and 2001 censuses. They also give weight to more recent data from the Labour Force Survey and so take some account of trends that have become evident since 2001. It should, however, be emphasised that the projections are designed to estimate long-term trends in household numbers if previous demographic trends in population and household formation rates continue into the future. They are

not intended to forecast short term fluctuations due to volatility in economic conditions or housing markets.

- 3.10. It should be noted that the necessary detailed information on population and household composition to calculate household formations from the 2011 census is not yet available and will probably not be available until summer 2013.
- 3.11. In producing its household projections DCLG makes adjustments first to ensure that regional totals are consistent with national projections and then that local authority projections are consistent with the regional figures.

4. Methods and assumptions used on household formation rates

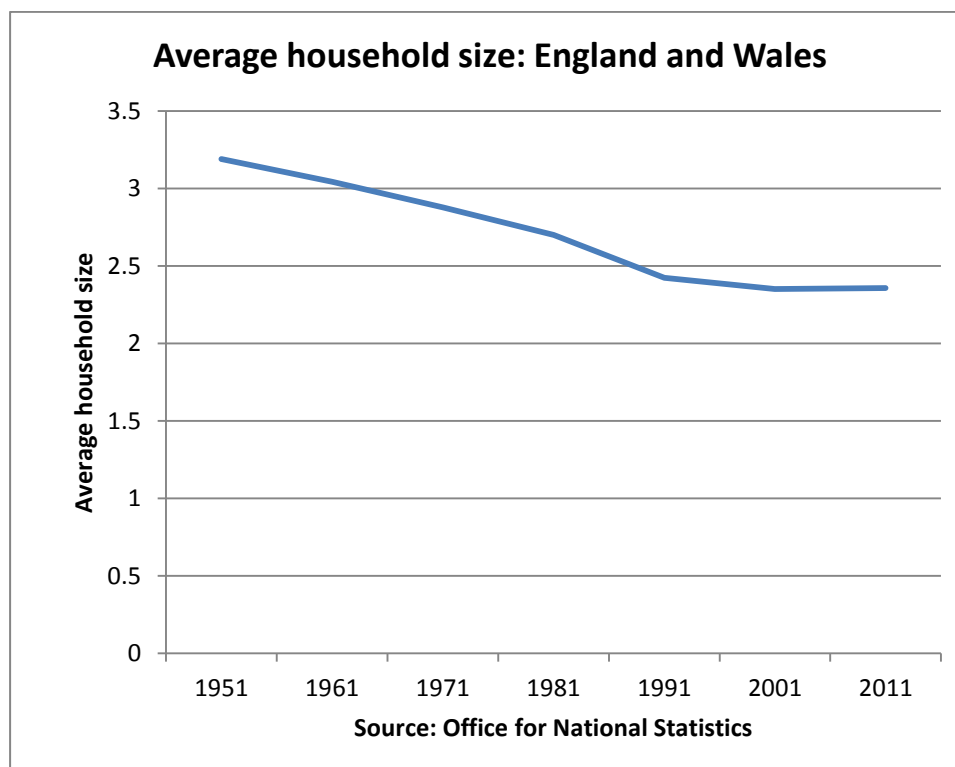
- 4.1. A range of household projections have been produced as a part of the work to develop the joint core strategy. In particular, the December 2011 public consultation document¹ was underpinned by projections derived from the Gloucestershire Local Projection. A subsequent report in September 2012 by Nathaniel Lichfield and Partners (NLP)² discussed five demographic scenarios and two economic growth scenarios. All of these have been based on the household representative rates that underpinned DCLG's 2008-based household projections as they were (and still are) the latest official projections available. This is presumably because they are generally seen as the best available and are therefore likely to carry substantial weight at examinations and inquiries.
- 4.2. A check of the method used to convert the Gloucestershire Local Projection into a household projection has been carried out by comparing the household sizes in 2031 implied by the figures reported in "Housing Trend Analysis & Population and Household Projections, Final Report (May 2011)" with the average household sizes implied by DCLG's 2008-based projection. Given that both use DCLG's household formation rate projections to turn population projections into a household projections it is to be expected that they would produce similar average household sizes even if the number of people projected was different, unless there was a difference in the age/gender/marital status mix.
- 4.3. The average household sizes produced from the figures reported in the May 2011 report are reasonably close to those suggested by DCLG's projections. The differences are sufficiently small that they could be due to small differences between the age profile assumed in the local population projections and that in the DCLG projections.
- 4.4. It was therefore concluded that it is unlikely that there were material errors in the way in which the DCLG household representative rates had been applied.

¹ "Developing the Preferred Option Consultation Document (December 2011)"

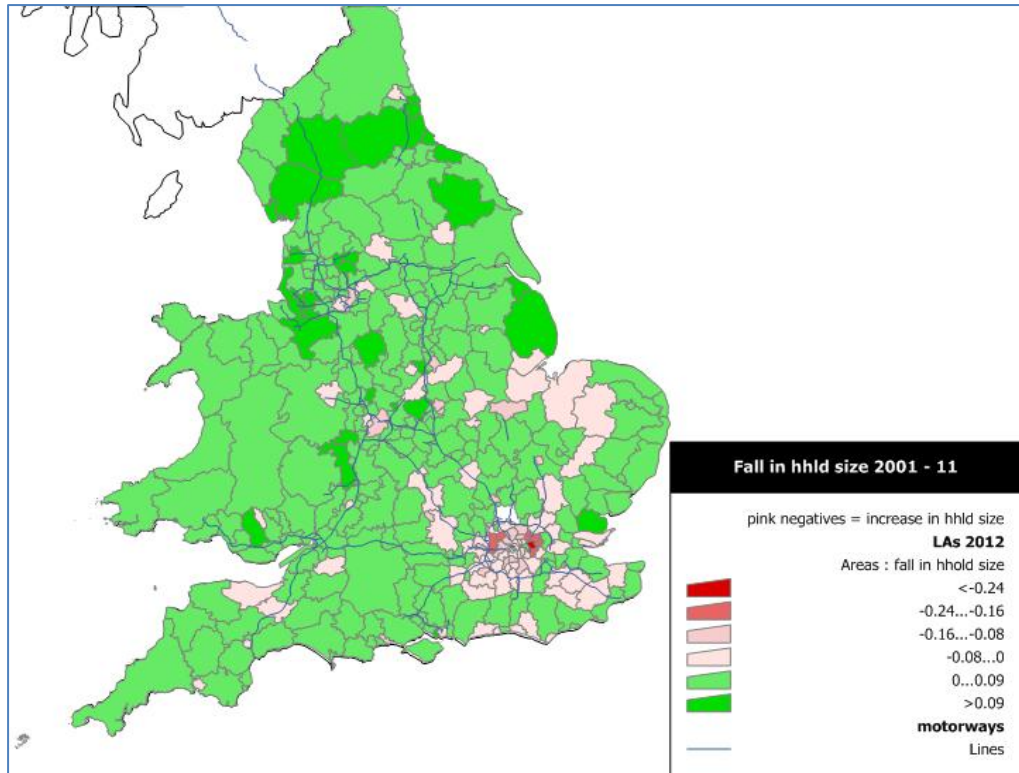
² "Assessment of Housing Needs (September 2012)"

5. What is happening to household formation patterns and average household size nationally?

- 5.1. The clearest evidence that household formation patterns changed over the last ten years comes from the way in which average household size did not fall as projected between the two censuses. The graph below shows how the average household size in England and Wales has changed over the last 60 years.

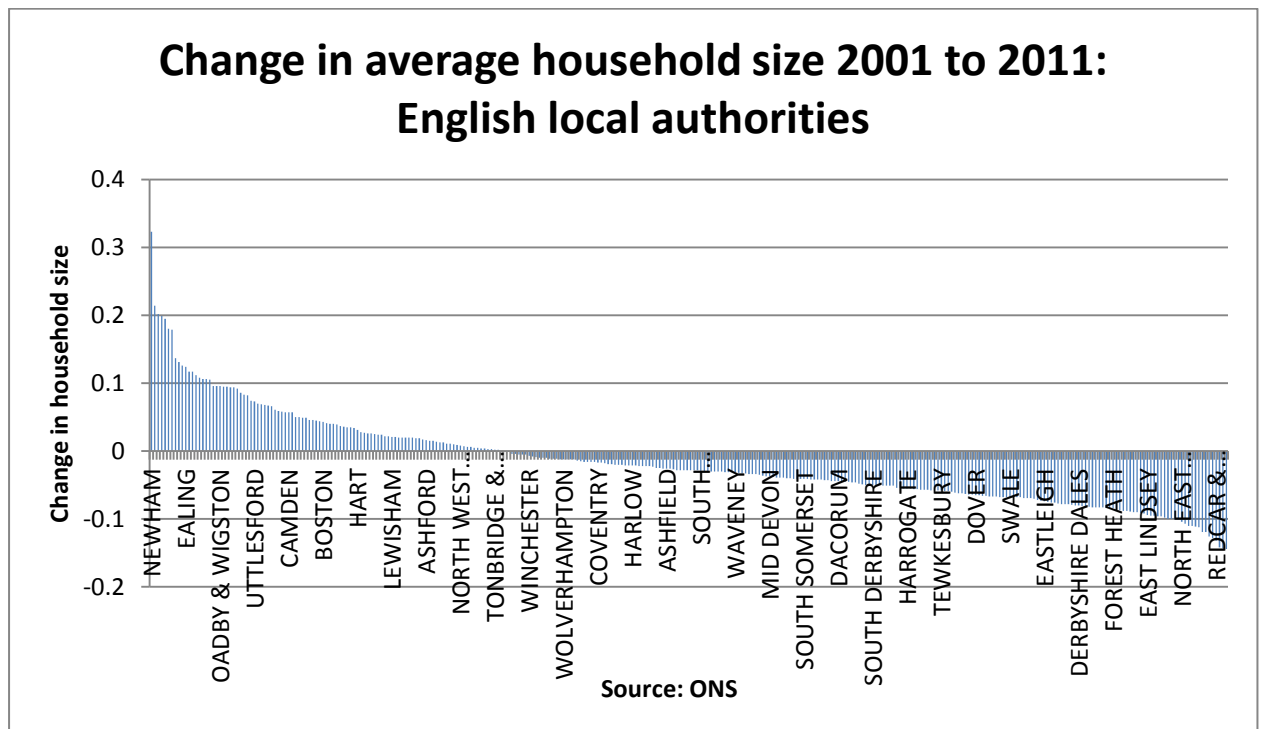


- 5.2. Had household formation rates changed as envisaged in DCLG's 2008-based projections there would have been a fall in average household size for England of 0.06 – from 2.37 to 2.31. That fall would have equated nationally to over ½ million more households than were indicated by the 2011 census.
- 5.3. The change in household size between the censuses was not uniform across the country as the map below indicates.



Source: ONS and DCLG

- 5.4. The change in average household size varied from an increase of 0.323 in Newham to a fall of 0.168 in the City of London. Those two authorities are both in their own way special cases. Ignoring outliers, the range was between an increase of 0.2 and a fall of 0.14. 102 out of 321 authorities saw a growth in average household size. The distribution of household size change is plotted in the graph below.



- 5.5. The 32% of local authorities that saw an increase in household size compares with around 6% that were projected to see an increase in DCLG's 2008-based projections. Far more – over 80% of authorities had a larger household size in 2011 than the projections had suggested, many having a smaller decrease in household size than was projected.
- 5.6. There is some evidence from the Labour Force Survey as to what has caused these changes. In particular an ONS report released in May 2012 “Young adults living with parents in the UK, 2011”³ suggested that there had been a 21% increase in the number of adults in the UK aged 20-34 living with parents – an increase of over ½ million. Insofar as this increase was not envisaged in the 2008-based projections, it goes a significant way towards explaining why the 2011 census found fewer households than the projections envisaged.

³ 1. <http://www.ons.gov.uk/ons/rel/family-demography/young-adults-living-with-parents/2011/young-adults-rpt.html>

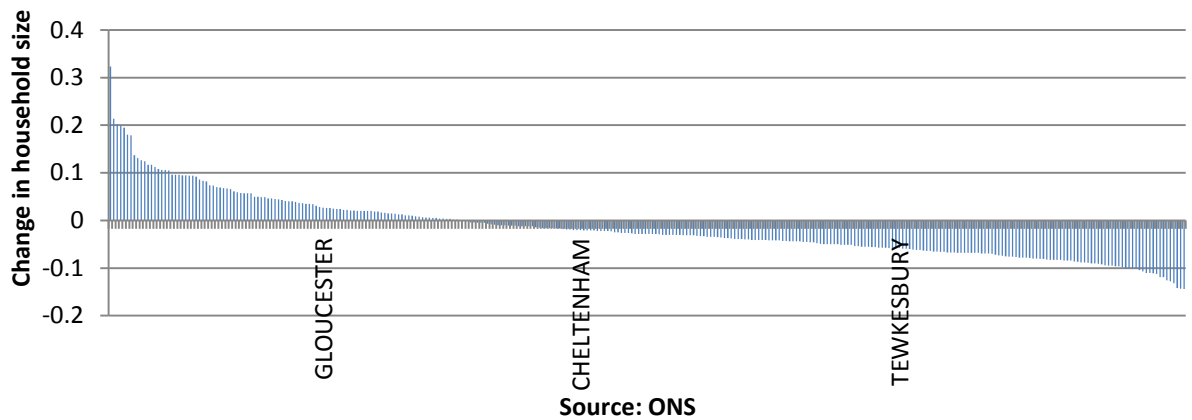
6. How are the changes affecting the JCS area?

- 6.1. The basic data on how the three JCS authorities' census results compare with the ONS and DCLG's 2008-based projections are set out in the following table. The figures given under "Fall in household size" are for the period 2001 to 2011, the comparison being between the change projected and the results from the two censuses. The difference between the household change figures is a broad indicator of the extent to which the movement in household formation rates between 2001 and 2011 was different from that assumed in the projections – assuming that there were not significant disparities in the assumed age, gender and marital status mix.

	Population in 2011			Households in 2011			Fall in household size		
	ONS 2008	Census 2011	% diff	DCLG 2008	Census 2011	% diff	DCLG 2008	Census 2011	Diff
Cheltenham	115330	115732	0.35%	51465	50929	-1.04%	0.042	0.020	0.022
Gloucester	119638	121688	1.71%	51413	50363	-2.04%	0.075	-0.027	0.102
Tewkesbury	81383	81943	0.69%	35622	35126	-1.39%	0.074	0.058	0.016

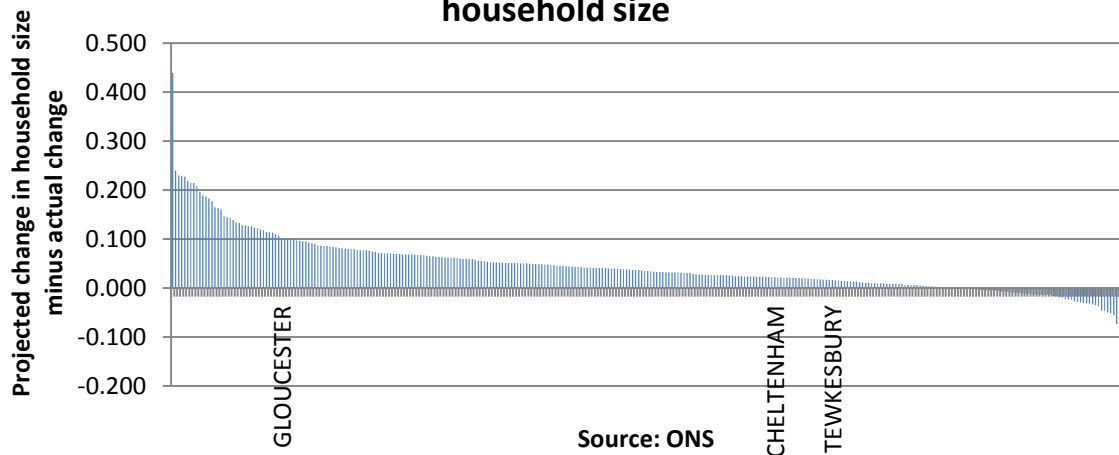
- 6.2. As can be seen from the table, in all three cases the census 2011 population projection was above the ONS projections yet in all three cases census household figures were below the projected figures, indicating a fall in household size compared with what was projected.
- 6.3. The comparison of projected and actual changes in household sizes corrects for the differences between actual and projected population numbers. The much larger difference in the case of Gloucester suggests that household formation rates there have departed from what was assumed in the projections by a much larger extent than in the other two authorities.
- 6.4. The following chart places the three authorities in the distribution of changes in household size for English local authorities.

Change in average household size 2001 to 2011: English local authorities



- 6.5. As can be seen, none is by any means an outlier although they sit in different sectors of the distribution. Gloucester is ranked 63 out of 317; Cheltenham 138 and Tewkesbury 231.
- 6.6. If, however, the comparative measure used is not the fall in household size but the difference between the projected fall and the actual fall, a rather different picture emerges.

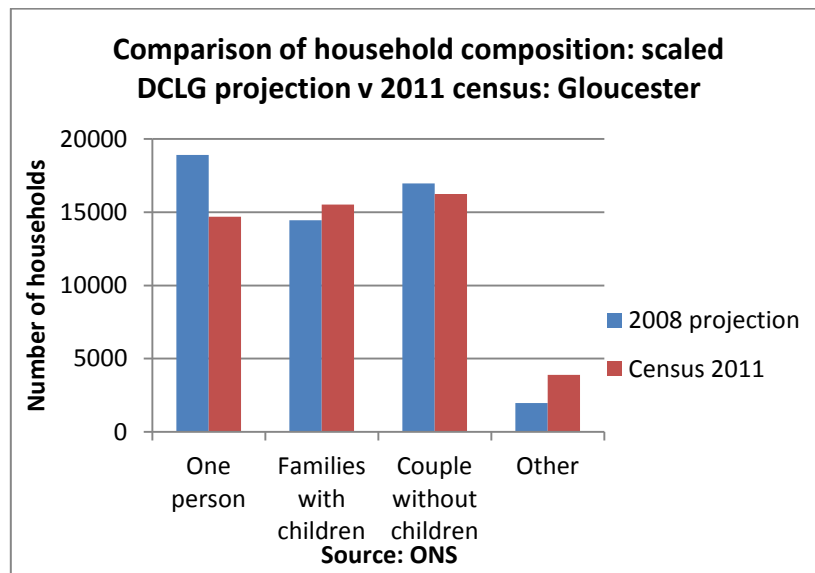
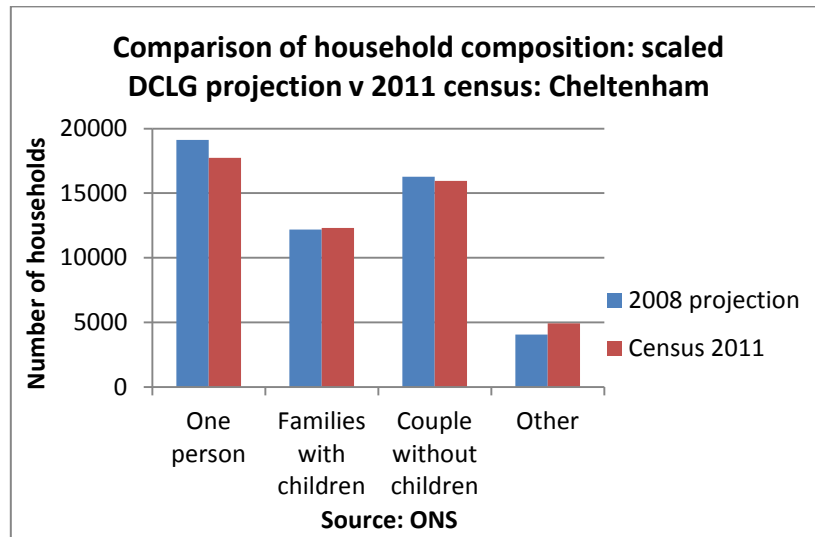
Difference between projected and actual change in household size

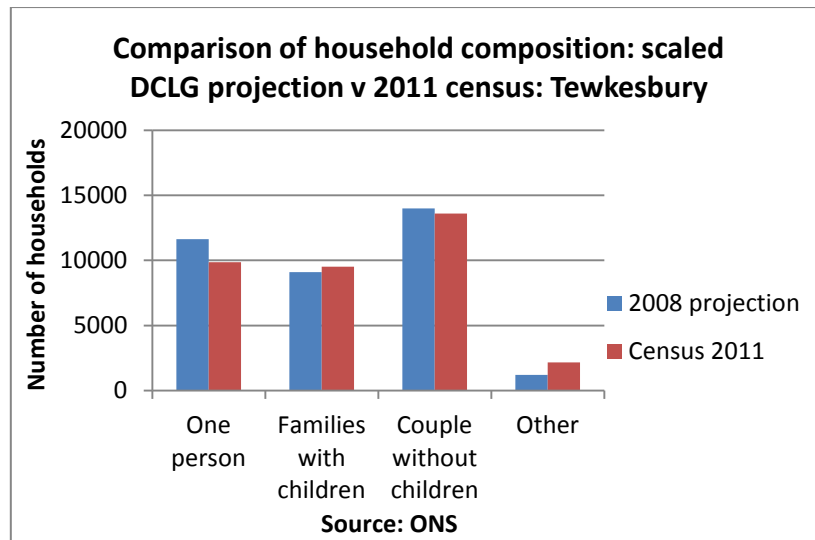


- 6.7. As can be seen from the above chart, Gloucester is in a very different position. It is ranked 37 i.e. towards the top end of the distribution – indicating a larger departure from the household formation rates that underpin the 2008 projections. Cheltenham and Tewkesbury are ranked 200 and 219 respectively.
- 6.8. Further insight into that changes that have occurred can be obtained for one of the tables that was included in the package of census releases that the ONS issued on 11 December. This provides a limited breakdown by household type for all English local authorities. This can be compared in

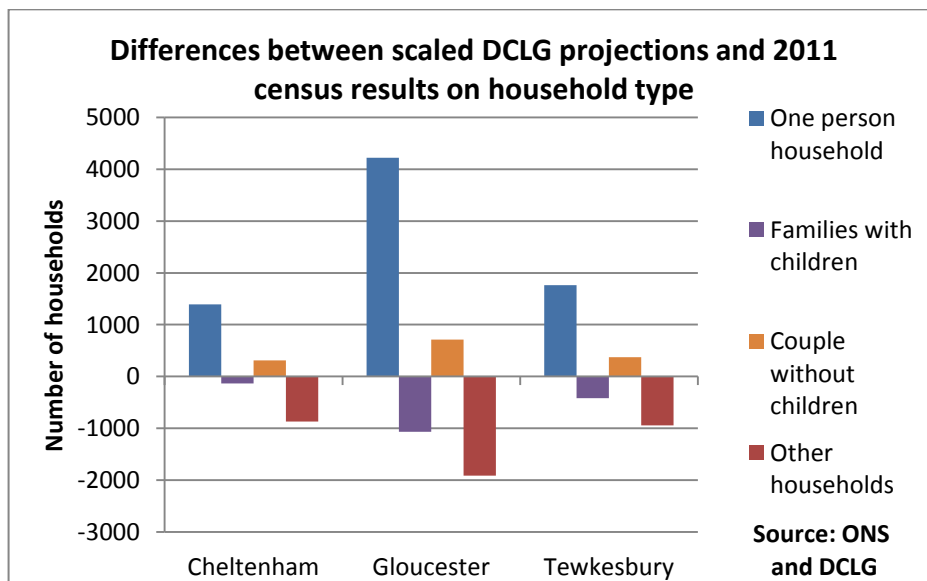
broad terms with the household composition projected for 2011 by DCLG to gain an insight into how household formation rates have departed from those assumed in the projections.

- 6.9. The graphs below show how the number of households found by the census in four broad types compare with the DCLG projections. The DCLG projections have been scaled up to reflect that fact that there were more people in the three local authority areas than had been assumed in the projections. This means that the differences between the two sets of figures are a better reflection of the differences in household formation rates.





6.10. The difference between the projections and the census are summarized in the following chart, which brings out how similar the pattern is. Positive numbers in the chart mean that the projections suggested more households than the census found; negative numbers mean the census found more households than the projections suggested.

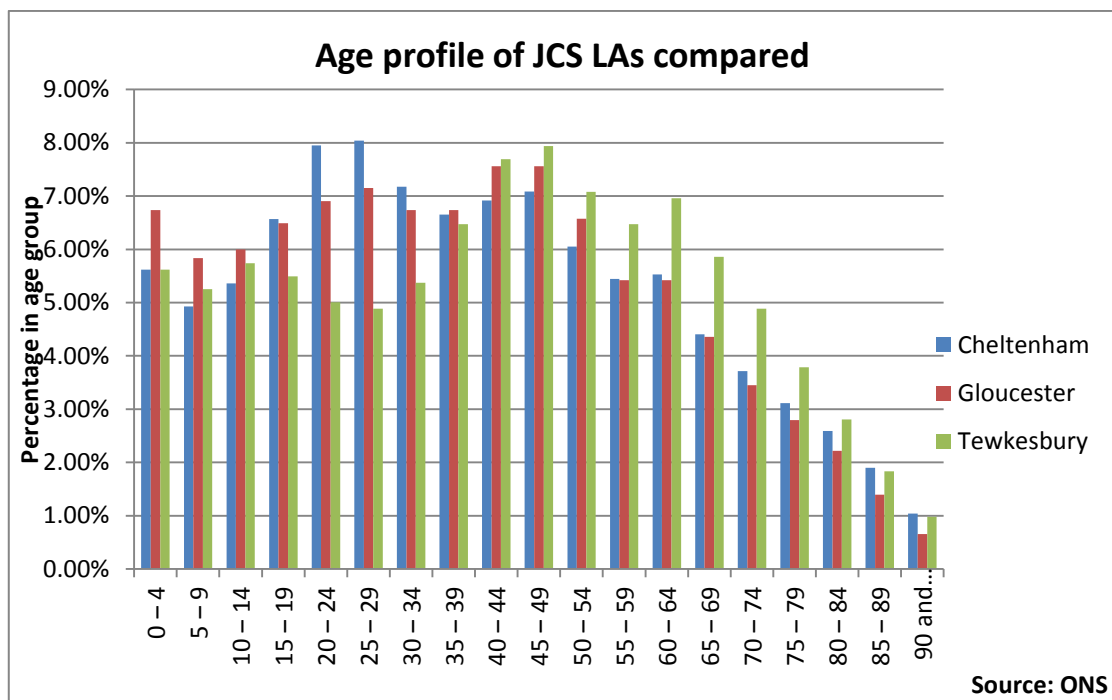


6.11. In all three cases the biggest difference is one person households: the census found significantly fewer single person households than the projections has suggested. This is consistent with more younger adults living with parents and with some of those who leave the parental home choosing cheaper options – such as living in shared houses and flats – and living in those households for longer, although older single person households were also affected. The fact census found more ‘other’ households (a category that includes shared houses where the residents share facilities) is also consistent with this.

6.12. The fact that the census found more families with children than expected is perhaps a little surprising. That is, however, consistent with rising fertility

rates during the last ten years. The census finding that there were fewer couples without children than expected might also be a consequence of the increase in fertility rates, but there could also be other factors in play such as young couples not being able to afford to set up home together.

- 6.13. Whilst there are strong similarities between the three JCS authorities there are also significant differences of scale.
- 6.14. Both in terms of changes in average household size and differences between census and projections in the four broad household types, Gloucester has been much more significantly affected than the other two authorities.
- 6.15. When Cheltenham and Tewkesbury are compared, the difference in average household size changes is much smaller but Tewkesbury has bigger differences between the census and the projections than Cheltenham in each of the four broad household types. Bearing in mind that Tewkesbury has a much smaller population than Cheltenham, the percentage differences are much larger for Tewkesbury.
- 6.16. Differences in age profile may be one factor. The following table compares the three authorities from this perspective.



- 6.17. Gloucester has the smallest proportion of over 65s and the most children and families. That is consistent with the changes being related to younger people and, in particular, younger adults having difficulties starting their housing careers.
- 6.18. With Tewkesbury having a significantly older profile than Cheltenham it might have been expected to have been much less affected by changing household formation patterns, but that doesn't seem to be the case. There could well be other factors in play here such as income levels and the much more rural nature of the Tewkesbury Borough area. A fuller explanation of the

differences will probably have to await the full 2011 census results in summer 2013

7. Economic growth scenarios

- 7.1. Two economic growth scenarios are outline in the Nathaniel Lichfield and Partners (NLP) report “Assessment of Housing Needs (September 2012)”. These use a rather different method from a classic demographic approach to projecting household growth. Paragraph 3.55 explains the approach used:

The economic scenario adopts a different starting point to the demographic scenarios. The demographic scenarios apply input data relating to (inter alia) natural change and migration and then identify the resultant population change, dwelling requirements and number of jobs that would be supported by the economically active population. By contrast the economic scenario uses the employment forecast prepared by Cambridge Econometrics as its starting point and then identifies the number of migrants that would be expected, taking account of assumptions regarding commuting, unemployment and economic activity levels and the likely future levels of non-economic migration from this. It then tests the likely levels of natural change and population growth and identifies resultant household growth and dwelling requirements.

- 7.2. Two economic forecasts are modeled: one by Cambridge Econometrics that suggest a 15.3% increase in jobs in the JCS area between 2011 and 2031 and one by Experian that suggests a growth of 8.4%. These result in higher population and household growth rates than suggested in the demographic-only estimates.
- 7.3. It would be beyond the scope of this report to review the methodology adopted by NLP in forecasting the housing implications of the two economic growth scenarios and no attempt has been made to do this. However we do note that the usual approach to assessing interregional migration is to look at relative house prices; relative wage rates and relative unemployment rather than use evidence on potential employment.
- 7.4. The following observations are offered on the extent to which the recent changes in household formation rates affect the number of homes required in the two economic scenarios
- a. Insofar as there are long term changes to household formation rates, these will affect the base position against which the economic growth scenario is modeled.
 - b. Care is needed to avoid inconsistent assumptions in the same scenario. It seems highly probable that the economic downturn has been one of the drivers of the changes in household formation patterns. It would seem implausible to assume that lower household formation rates continue (with the implication of a lower housing requirement) whilst at the same time assuming an increased rate of economic growth that would attract more migrants into the area.

- c. Given the evidence that the largest changes in household formation patterns have been amongst single people and probably amongst younger, lower income single people, consideration needs to be given to how these groups might be affected by a growth in jobs in the area. It might increase employment and incomes in this group, thereby tending to reverse the reduction in household formation rates that has occurred. This is the most likely longer term scenario. Or if the growth is concentrated in the area it could attract people of working age from outside the area, increasing pressure on house prices and reinforcing the difficulties faced by young adults in entering the housing market.
- d. We note that there is a local affordability model – the Gloucestershire Housing Affordability Model. We have not reviewed this but part of the purpose of such models is that they are able to investigate the likely consequences of different economic scenarios. We would suggest that this model be used to investigate how a range of different trajectories from the current economic downturn to the growth scenarios suggested by Cambridge Econometrics and Experion might affect housing requirements.

8. Affordable housing

- 8.1. Besides being used in the assessment of overall housing requirements, household formation rates have also had a critical role in assessing the need for affordable housing (i.e. social and intermediate housing) in the Joint Core Strategy (JCS) area.
- 8.2. The method used involves assessing both the 'existing unmet need' – the number of household who are currently unable to afford to meet their housing needs – and the 'newly arising need' – the number of additional households who will find themselves unable to afford to meet their housing need in future years. The latter category includes both newly forming households and households which are either owner occupiers or in the private rented sector who find themselves unable to afford the housing they need. It is in estimating the number of additional households that form each year and are unable to afford adequate housing that household formation rates have a role.
- 8.3. The approach used in this part of the calculation is to use the household projections age group by age group to estimate the number of newly arising households. The assumption has been made that if there were X single parent households aged 20-24 in one year and Y single parent households aged 25-29 five years later then there have been Y-X new households in this group. Assumptions are then made about the proportion of these who cannot afford adequate housing from their own resources.
- 8.4. As we have seen, the household formation rates have a role in determining how many households there are of each size and type in each age group. Assuming lower household formation rates would therefore, all other things being equal, reduce the estimated number of newly arising households and hence the requirement for affordable housing.
- 8.5. The key issues about the size of the changes that have affected the JCS area and whether they are a short term or long term also apply here. There is, however, an additional factor to be borne in mind. Past household formation rates reflect households that have been successful in forming. Any trends based on recent past formation rates will similarly reflect households that are likely to be successful in forming, not those that 'ought' to be able to form or to be adequately housed. Thus, insofar as reduced household formation rates are due to "forced changes" rather than changed aspirations, it would be perverse to reduce estimates of the affordable housing needed to reflect them: calculations should be based on the long term trend.
- 8.6. It should be stressed that in this area the review has only looked at the specific issue of the role taken by a household formation rates. A number of other developments could potentially have a much larger impact including changes to welfare policy and developments in housing policy such as the introduction of the 'affordable rent' product and the new freedom local authorities have to discharge their homelessness duty by arranging a tenure in the private rented sector. These could, for example, lead to those reliant

on housing benefit to move to more affordable areas, changing past migration patterns.

9. Evidence from academic studies and international experience on the determinants of household formation

- 9.1. There is a large literature which looks both at the assumptions associated with current ways of calculating household formation figures and at the broader issues of what determines these rates. A detailed history of the first can be found in Holmans (2012)⁴.
- 9.2. The big issue is whether the length and depth of the downturn is such that we are now in a different ball park particularly as to whether those who could have been expected to form households in the last five years will catch up or be long term disadvantaged. There are also issues associated with the impacts of rapid change on house prices and therefore access to market housing and the extent to which the welfare system will continue to support everyone who can find a home.
- 9.3. It has long been recognised that household formation (and especially the timing of that formation) is determined by economic as well as demographic factors.
- 9.4. One of the earliest models in the UK is that put forward by Ermisch (1999)⁵. This sets out an economic theory of young people's decision to live apart from parents and employed data from the British Household Panel Survey for the first half of the 1990s. It showed that tighter housing markets, as indicated by higher regional relative house prices, significantly retard home leaving, especially the formation of partnerships, and encourage returns to the parental home. Young people with larger current income are more likely to leave, but less likely to return to, the parental home.
- 9.5. The literature is reviewed in Bramley, Munro and Lancaster. (1997)⁶. This summarises a large number of different approaches all of which clearly show that house prices and incomes are important in determining the number of households.
- 9.6. The latest detailed analysis is that by Meen and Andrews in 2008⁷. This shows that the main economic factors affecting household formation are real housing costs; real incomes and previous tenure status – i.e. what tenure you were in last year. It also makes it clear that economic factors are less important but still very significant in determining household formation and

⁴ Holmans A (2012) Household Projections in England: their History and Uses

⁵ Ermisch J (1999) * Prices, Parents, and Young People's Household Formation, Journal of Urban Economics January

⁶ Bramley, G, Munro M, and Lancaster S. (1997) The Economic Determinants of Household Formation: A Literature Review. Report for the Department of the Environment, Transport and the Regions.

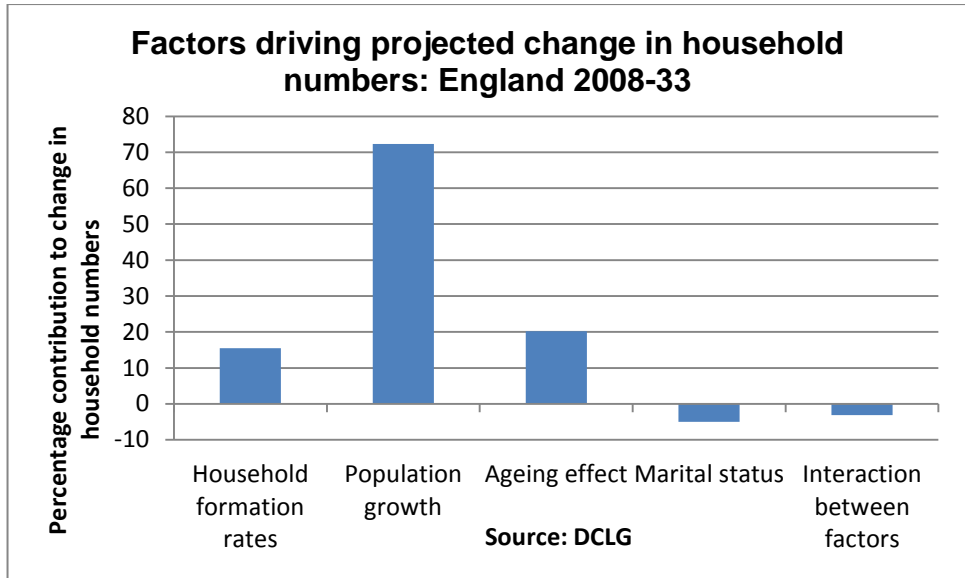
⁷ G Meen and M Andrews, (2008), Planning for Housing in the Post-Barker Era: Affordability, Household Formation and Tenure Choice, Oxford Review of Economic Policy, Volume 24, Number 1

much more dominant when it comes to tenure. Work by Andrews also shows that household formation is reduced by debt arising from Higher Education and other sources.

- 9.7. Of particular importance is the review undertaken for NHPAU as to the likely impact of the recession on household formation rates: *Housing requirements and the impact of recent economic and demographic change, NHPAU, May 2009*. This used the DCLG/Reading affordability model to look at how the housing market might respond on emerging from the recession. It concluded that the market could be expected to bounce back if and when conditions returned to a pre-2007 state.
- 9.8. Work in the USA since the recession also suggests very significant impacts of unemployment and income reduction on household formation by young people but of course shows no evidence on the upturn.
- 9.9. Finally these are all market models – it should be remembered that the welfare system and particularly housing benefit and pensions helps to determine income and the capacity either to form separate households or to remain as separate households.
- 9.10. International evidence would suggest that richer countries are still seeing continuing falls in household size and that these are reinforced by aging populations. Currently the average household size is roughly equal to the EU average but significantly higher than Germany and Scandinavia (Eurostat 2012). Household size has inched up in the USA and in parts of England mainly as a result of economic and housing market factors. Looking to the future Britain is atypical in having a younger age profile and relatively strong birth rates. There is therefore probably still a long way for household sizes to fall.

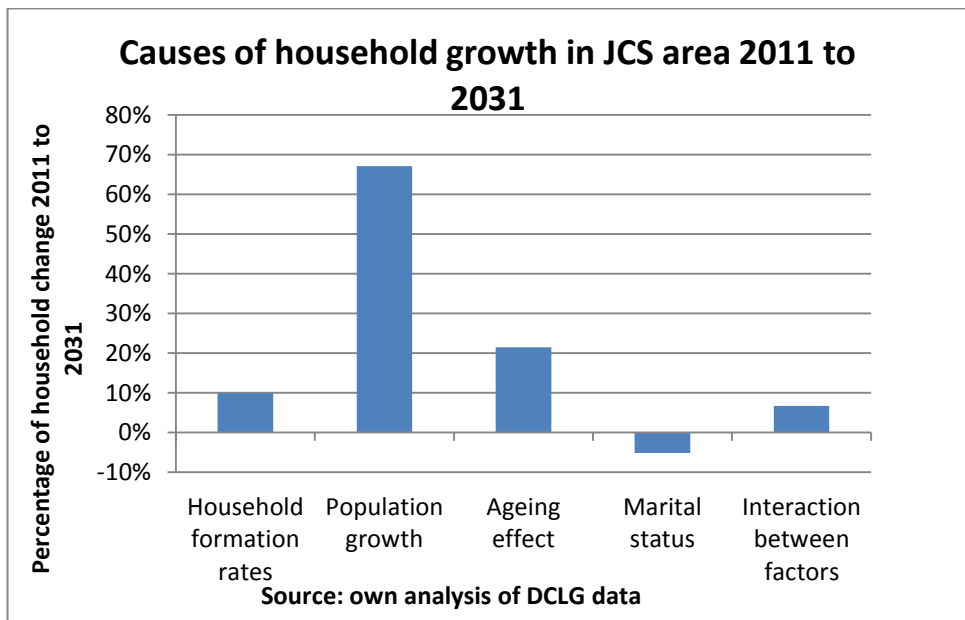
10. What if different assumptions were made?

- 10.1. As already noted, the assumptions made about household formation rates can have a significant impact on the number of households that are projected to form. Understanding just how big that uncertainty is and how it compares with the other factors affecting the number of extra households likely to form is an important element in informing decisions about both the assumptions to be made and the extent to which it would be prudent to plan in flexibility in case a different outcome occurs.
- 10.2. Within a demographic model there are four main factors that affect the number of extra households:
 - a. **Population growth:** if there was no change in the age profile of the community or the tendency of different groups within the community to form households, the growth in the population would on its own cause the number of households to increase.
 - b. **Changes in household formation rates:** similarly if all other factors were unchanged, the number of households would still increase if there were increases in the tendency of different groups to form household (i.e. increases in household formation rates).
 - c. **Ageing effect:** as older people tend to live in smaller households, if the profile of the community shifts towards older age groups – as is happening generally in England – then the number of households in a given size of population would increase.
 - d. **Changes in marital status:** the household formation rates of single people, couples and previously married people are different. If the marital status mix changes this can affect the number of households in the population.
- 10.3. In addition there is an interaction between the four factors – for example, the changes due to increased household formation rates apply to a greater extent if the population also grows.
- 10.4. In their Final Report on their 2008-based projections DCLG set out the contribution each of these factors made to the projected increase in households and concluded that, across England as a whole, only 16% of household growth between 2008 and 2033 is attributable to changes in household representative rates.
- 10.5. The chart below illustrates the relative size of the factors driving household change.



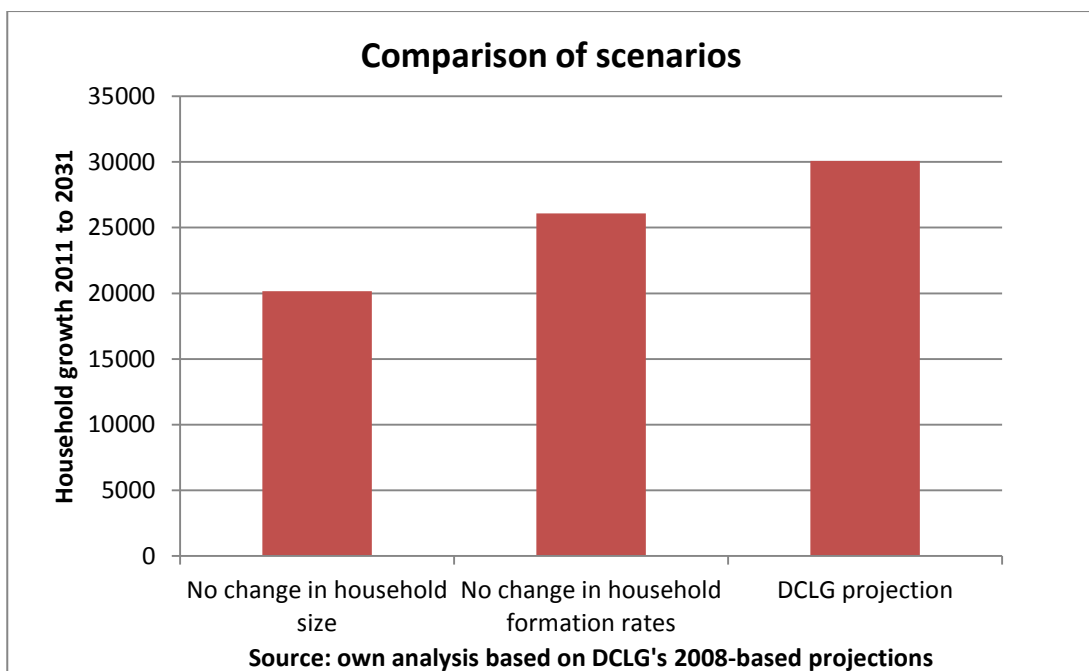
10.6. Similar calculations can be made for the three JCS authorities: for the period from 2008 to 2033 the projected changes in household formation rates are responsible for 13.6% of the change in household numbers in the DCLG projections. The difference compared with the national picture will be due to differences in the age profile and the local trends assumed for household formation rates.

10.7. The chart below shows the relative size of the four factors for the JCS area for core strategy period of 2011 to 2031⁸. Note that the difference between the contribution of household formation rates and the ageing effect is rather larger than in the national figures.



⁸ This graph has been prepared on a slightly different basis from the national graph shown after paragraph 10.5 for 2008 to 2033 but the results are broadly comparable.

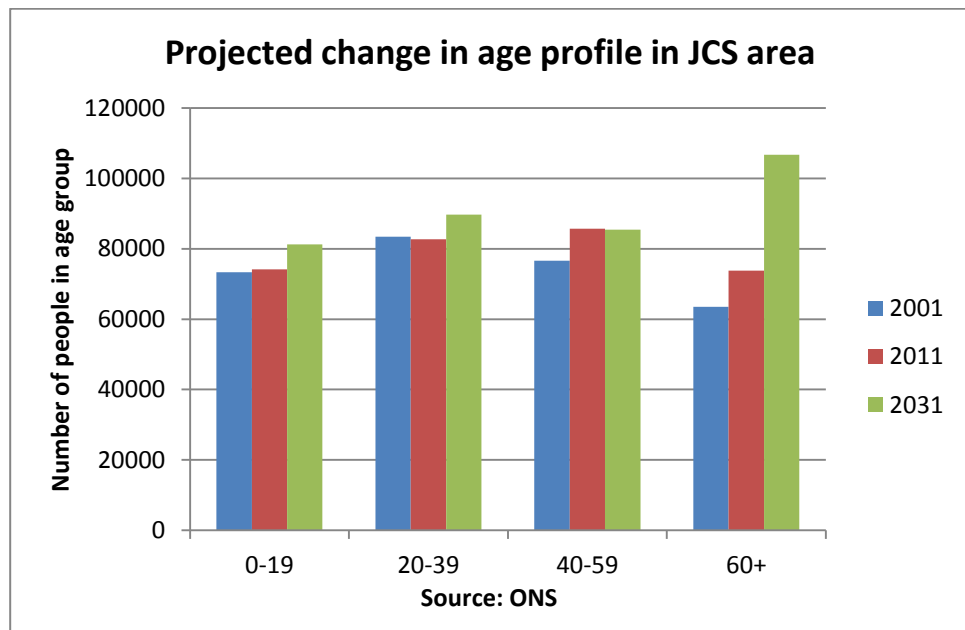
- 10.8. A wide range of “what if” calculations can be performed. The following scenarios have been tested using the DCLG 2008-based projections.
- Assuming that the average household size remains unchanged between 2011 and 2031. This is, in effect, assuming that there is no change in household formation rates, no ageing effect and no change in the marital status mix. The only effect that operates is population growth.
 - Assuming that household formation rates stay at the 2011 levels until 2031.
 - Assuming that there is a full return to the previous trend. This applies the DCLG projection ‘as is’.
- 10.9. The results are set out in the following chart and table.



Scenario	Change in number of households in JCS area 2011 to 2031	Change in household growth compared with DCLG projection	Change in household size 2011 to 2031
No change in household size	20200	-33%	Constant at 2.24
No change in household formation rates	26100	-13%	2.24 to 2.16 (i.e. -3.6%)
DCLG 2008-based projection	30100	-	2.24 to 2.11 (i.e. -5.9%)

10.10. The “no change in household size” scenario implies that the ageing effect will be offset by a reduction in household formation rates (and the much smaller marital status effect). This might not seem unreasonable given that this is what happened between 2001 and 2011 (when there was virtually no change in household size in the JCS area). However, for it to happen over the next 20 years:

- a. there would need to be a further reduction in household formation rates, rather than a return to the previous trend; and,
- b. the reduction in household formation rates would need to be significantly larger than it was in the period 2001 to 2011 as the ageing effect is expected to be significantly more powerful in the next 20 years than it was in the last 10 years. The graph below enables a comparison to be made between how the age profile in the JCS area has changed between 2001 and 2011 and how it is projected to change between 2011 and 2031. The 60+ age group is projected to grow at over an average of over 1600 people a year compared with around 1000 a year over the last 10 years i.e. some 60% faster.



10.11. The “no change in household formation rates” scenario assumes that the ageing effect will take place as projected. This is reasonably certain as it is largely determined by the ageing of the existing population. It also assumes that the much smaller marital status effect operates as projected. What it does not allow for is any movement back towards the previous trend. In that sense it is a fairly extreme scenario given the evidence about the factors that have driven the changes in household formation patterns over the last ten years.

10.12. It is worth noting that even with the household formation rates held at the 2011 level, the majority of the fall in average household size would still occur

– 3.6% compared with 5.9% in the DCLG projection. This is because the majority of the change in household size is driven by the ageing effect.

- 10.13. These “what-if” calculations have been performed on the 2008-based DCLG projections which in turn are based on the ONS 2008-based population projections. Slightly different results would be obtained if they were performed by applying variants of the 2008-based household formation rates to the 2010-based ONS population projections or a hybrid of those and the 2011 interim projections. However, the broad size of the effects can be expected to be similar.
- 10.14. All of this analysis excludes economic and policy change variables which can be expected to impact on household formation. If income growth, unemployment rates, the relationship between house prices and incomes and housing related welfare regimes are not in line with past trends this will affect projections. However, we have noted that demographics have dominated outcomes in the past.

11. Written representations and submissions to the JCS authorities.

- 11.1. In the time available before this interim report only a brief review has been possible of the substantial volume of representations and submissions has been possible. However from this the following issues are evident:
- a. General concern about the reliability of and uncertainty attaching to projections
 - b. Concern that elements of the evidence base were out of date.
 - c. Particular concern about the projections suggesting that household size would fall. It appears this was exacerbated by a mistake made at a public meeting which had suggested that the average size might fall as low as 1.2.
 - d. Use of evidence from council tax records, at least in the case of Stroud, suggesting that the number of single person households has been falling, not rising in recent years.
 - e. Observations that some people are living in larger units as a result of the economic situation or the cost of housing.
 - f. The suggestion that the core strategy should be based on the assumption that average household size would remain unchanged over the next 20 years
- 11.2. On the point about reliability and uncertainty it is with important to distinguish between whether it is possible to estimate what would happen if a given set of assumptions holds good and whether or not it is possible to be confident that the assumptions made will reflect what is likely to happen in the future. For demographic projections there is less of an issue in calculating what the outcome will be if a set of assumptions holds good than in determining what the appropriate assumptions might be. This can be dealt with by taking a view on a reasonable range for the key assumptions and then developing a plan that can cater for the range of housing requirements that that range would suggest. It should be noted that the NPPF expects local planning authorities to develop local plans “with sufficient flexibility to adapt to rapid change” (NPPF, paragraph 14, second bullet)
- 11.3. Misgivings about the evidence base being dated are understandable given the latest DCLG household projections are 2008-based and do not take account of the impact of the economic downturn that has happened since. It is now possible to update elements of the evidence base from data that has been released from the 2011 census as well as ONS’s interim 2011 population projections. Moreover, when planning for a 20 year period the need is to estimate the long term trend, not to model short term fluctuations. As has already been noted, the focus needs to be on scrutinising the available evidence to inform a judgement on whether the recent changes are a temporary departure from trend or evidence of a new trend.

- 11.4. The points made about the number of single person households not rising as projected and people living in larger households are both a reflection of what has recently been confirmed in the census results. The key issue here is whether these changes are likely to continue or whether there will be a reversion towards the previous trend.
- 11.5. It is entirely reasonable to query whether the Joint Core Strategy should continue to assume a reduction in household size given that nationally there was no reduction in household size between the 2001 and 2011. However, as discussed in Section 10, changes in household size are the result of three factors: changes in household formation rates; changes in the age profile; and (to a much lesser extent) the mix of marital statuses. As noted in paragraph 10.10, for there to be no change in household size over the next 20 years there would need to be a further reduction in household formation rates (rather than a return towards the previous trend) and that reduction would need to be significantly larger than what was seen over the last 10 years as the ageing effect is expected to be much stronger in the future.
- 11.6. It therefore seems probable that there will be a reduction in household size over the next 20 years.

12. Recent Core Strategy Examinations

- 12.1. Within the scope of a review of the scale of this one it is not possible to attempt anything like a comprehensive review of recent planning decisions so the approach has necessarily had to be selective. Given that the context of the review is the preparation of a joint core strategy, attention has been focused on recent core strategy examinations and, in particular, the line that planning inspectors have taken on the assessment of housing requirements.
- 12.2. The first point to note is that in the majority of the cases reviewed inspectors have not generally delved into great depth on methodologies used to assess housing requirements. The notable exceptions are North Somerset and Bath and North East Somerset. In both of these core strategies a jobs-to-homes multiplier has been used to estimate housing requirements. In his preliminary report on the Bath and North East Somerset Core Strategy, the inspector expressed serious reservations about this. The similar methodology used in the North Somerset Core Strategy is one of the issues in Bristol University's (on going) High Court challenge to the adoption of the strategy by the council.
- 12.3. We are not aware of changes to household formation rates being raised in core strategy inspector's reports.
- 12.4. There have been a number of recent cases in which preliminary reports from inspectors raising concerns about housing numbers have led to the withdrawal of the core strategy or the suspension of the examination pending further work in this area. In a number of these cases the level of demand suggested by household projections has been cited. Of particular note is the letter the inspector examining the East Hampshire core strategy wrote on 23 November 2012 to the local authority expressing grave concerns about the level of housing provision even though he acknowledged that the plan was in general conformity with the South East Plan. The inspector went on to note that, "... the evidence base indicates that the JCS will not provide sufficient market housing to meet the objectively assessed need, a point acknowledged by the Authorities." He also makes it clear that he is not prepared to accept at face value assertions that environmental constraints prevent the authority from meeting objectively assessed need in the absence of analysis of the impact of higher levels of growth.
- 12.5. It should also be noted that some core strategies have been found 'sound' whilst not providing for objectively assessed need. The inspector's report on the Hertsmere Core Strategy notes that the 2008-based household projections suggest a significantly higher level of provision than provided for in the core strategy and that the most recent sub-national population projections based on the 2011 census suggest that the borough will grow at an even faster rate than indicated in the household projections. However, the inspector concludes that the most appropriate way forward is for the authority to adopt the strategy but commit to a partial review of the plan within three years.

13. Bringing together the available evidence.

13.1. The key elements of the evidence collected in this review are:

- a. Over the last ten years there has been some departure from the household formation trends envisaged in the 2008-based DCLG household projections. This has been demonstrated by the 2011 census which found both more people and fewer households than anticipated. The net result was that for the first time for at least a century the average household size did not fall between censuses.
- b. The most likely reason for this is that economic and housing market factors have limited the capacity to form separate households, pulling them down below longer term trends. .
- c. Cheltenham, Gloucester and Tewkesbury followed the national pattern but to varying degrees. In all three there were more people and fewer households found in the 2011 census than the projections had anticipated. None of the three JCS authorities is an extreme case but by some margin the effect was largest in Gloucester.
- d. There are two pieces of evidence suggesting that the departure from previous trends has been most marked amongst single person households, particularly young adults.
 - i. An ONS study published in May 2012, “Young adults living with parents in the UK, 2011” used Labour Force Survey data to show that there had been 21% increase in 20-44 year olds living with parents between 2001 and 2011 – a change that equates to around ½ million more young people living at home rather than in other household types. This will have caused household formation rates in this age group to be lower than they otherwise would have been.
 - ii. Census data released by ONS on 11 December 2012 provides a limited breakdown of household types at the local authority level in a form that can be compared with DCLG’s household projections. This indicates that the largest departures from the trends assumed in the projections have been in single person households, significantly fewer of which were found by the census in the JCS authorities than the projections had suggested. This was partially offset by an increase in ‘other households’, a category that includes people living in shared houses and flats and sharing facilities. These two findings are consistent with the changes being amongst young adults at the beginning of their housing careers – as highlighted by the ONS report referred to above.
- e. The differences in the departures from trend seen in the three JCS authorities are consistent with the evidence set out in (d) above. Of the three, Gloucester (which is the most affected) has the smallest proportion of over 65s and the most children and families.

- f. DCLG analysis on the impact which changing household formation rates have on household numbers is useful in setting the changes seen in context. The Department has estimated that only 16% of the growth in households suggested by its 2008-based projection for the period 2008-2033 is caused by household formation changes. The equivalent figure for the JCS area is 13.6%. The bigger factors are the growth in the size of the population and the shift in the age profile to older age groups, who tend to live in smaller households.
- g. To illustrate the impact that different assumptions on household formation would have on household numbers the DCLG household projections have been used to estimate how many fewer households there would be in 2031 if household formation rates were unchanged over the next 20 years. The effect is to reduce the number of extra households formed between 2011 and 2031 by 13%. This would imply that there was no move back towards the previous trend as the economy picks up – a fairly extreme assumption.
- h. Research on young adults whose housing careers are adversely affected by a high house prices when they are aged 30 suggests that a large proportion recover by the time they are 40 – but this depends on the economic environment.
- i. The likelihood that there is movement back towards trend is reinforced by the fact that changes in household formation patterns appear to have been largely amongst single person households, a group that is likely to be hit first by affordability issues (having, at most, one income to fund housing from) and a group that is flexible enough to respond quickly to better economic conditions.
- j. However, it could be argued that the depth and length of the current downturn, together with the impact of wide ranging changes to the welfare system and social housing, might together generate a fundamental shift. A pragmatic line would be that neither a full return to the pre-2007 trend nor a continuation of the current position without any move back towards trend is a likely: it is probable that the end result will lie somewhere in between

14. Conclusions and Recommendations

14.1. The available evidence suggests that:

- a. The changes that have occurred in household formation rates have predominantly affected single person households. Younger single person households are both particularly vulnerable to high house prices and a tight mortgage market and are likely to respond reasonably quickly to better economic conditions. Older single person households were affected as well, however.
- b. If there was no change in household size between 2011 and 2031 around a third fewer extra households would be formed in the Joint Core Strategy area. However, for this to happen there would need to be a much larger continued reduction in household formation rates than had been seen between 2001 than 2011, rather than some return toward the previous trend. This is thought to be extremely improbable and most unlikely to be accepted by an inspector at a core strategy inquiry as a prudent planning assumption.
- c. Even if there were no return to trend, the impact on the number of extra households formed in the Joint Core Strategy area between 2011 and 2031 is only likely to be a reduction of around 13%;
- d. Past performance of the housing market suggests that some return towards trend is likely even if complete recovery to the pre-2007 position may not be foreseeable in near future.

14.2. This leads us to conclude that:

- a. The prudent approach would be to plan on the basis of the projected household formation rates that underpin DCLG's 2008 based projections applied to the most recent population projections. (A potential approach is to construct a hybrid projection that uses ONS's interim 2011 projections to 2021 and then follows the trend suggested by the 2010-based projections.) Any such figures should be updated to reflect DCLG's 2011 based household projections when they become available.
- b. The core strategy would be more robust if sensitivity analysis similar to that reported in Section 10 above was carried out on the revised projection and flexibility built into the Core Strategy against the eventuality that a recovery to trend does not occur. This might be done, for example, by phasing the release of sites. Particular attention should be paid to housing types and sizes occupied by younger single people to ensure that that market is not over-provided for.