Explaining changes in household size

Ludi Simpson (University of Manchester), and Ann Berrington (University of Southampton)
New house building in UK each year 1920 to 2013
(Northern Ireland included only from 1948)

Annual average growth in number of households (source: DCLG Live Table 401)

Sources: From 1946: DCLG live tables. Earlier: Scottish Housing, and AE Holmans 2005
Aims

• Quantify the contributions of each driver of housing demand
  \[ \Sigma_{a,s,r} (\text{household population } \times \text{headship rate}) \]
  – Household population change
    • Population growth
    • Age and sex composition
    • Partnership (‘relationship’) status
  – Household headship rates among adults
    • Young 15-34; middle 35-59; older 60+

• Implications for household projections
Cautions

• Policy is mostly focused on changed behaviour
  – Household representative rates
  – Changes in relationship status

• Projected households indicate *effective* demand
  – Additionally there is suppressed demand: concealed families, delayed partnerships

• Full government analysis of 2011 census awaited
  – Analysis using 2012-based projections is provisional
1- and 2-person households 1961-2011

% of all households

- England outside London
- Scotland
- Wales
- N Ireland

Source: National Censuses
1- and 2-person households 1961-2011
% of all households

Source: National Censuses
Average household size and adults per household, 
1801-2011
England & Wales, Scotland

Source A.E. Holmans 2005, updated with 2011 Census
## Four household projection frameworks in the UK, 2011 or 2012-based

<table>
<thead>
<tr>
<th></th>
<th>Population sub-groups</th>
<th>Household types</th>
<th>Rate</th>
<th>Past data to estimate trend of rates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>England</strong></td>
<td>90 age-sex-relationship status</td>
<td>17, including 0/1/2+ children</td>
<td>Household representative</td>
<td>5-point 1971-2011 logistic and dampened logistic models averaged (Stage 1)</td>
</tr>
<tr>
<td><strong>Wales</strong></td>
<td>32 age-sex</td>
<td>12, HH size included to 5+</td>
<td>Household membership / Household size</td>
<td>2-point exponential model 2001-2011</td>
</tr>
<tr>
<td><strong>Scotland</strong></td>
<td>16 age</td>
<td>7, HH size included to 3+</td>
<td>Household representative</td>
<td>Average of two 2-point exponential models, 2001-11 and 1991-01</td>
</tr>
<tr>
<td><strong>N Ireland</strong></td>
<td>28 age-sex</td>
<td>18, HH size included to 7+</td>
<td>Household membership / Household size</td>
<td>2-point exponential model 2001-2011</td>
</tr>
</tbody>
</table>

Sources: DCLG, WG, NRS, NISRA methodology documents
England Household Representative Rates 1991, 2001 and 2011, Stage 1 projections (aggregated across relationship groups)

Source: DCLG 2012-based household projections: detailed data for modelling and analytical purposes
England Household Representative Rates: change 1991 to 2011
(aggregated across relationship groups)
## Decomposition of household change

<table>
<thead>
<tr>
<th></th>
<th>1991-2001</th>
<th></th>
<th>2001-2011</th>
<th>Incremental change</th>
<th>Av hh size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Households</td>
<td></td>
<td>Households</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start households</td>
<td>19,166</td>
<td></td>
<td>20,523</td>
<td></td>
<td>2.37</td>
</tr>
<tr>
<td>Start rates with total pop</td>
<td>19,781</td>
<td>+615</td>
<td>22,042</td>
<td>+1,519</td>
<td>2.37</td>
</tr>
<tr>
<td>with age sex</td>
<td>20,372</td>
<td>+591</td>
<td>22,410</td>
<td>+368</td>
<td>2.33</td>
</tr>
<tr>
<td>with relationship status</td>
<td>20,278</td>
<td>-94</td>
<td>22,331</td>
<td>-79</td>
<td>2.34</td>
</tr>
<tr>
<td><strong>Household change due to pop</strong></td>
<td></td>
<td></td>
<td></td>
<td>+1,113</td>
<td></td>
</tr>
<tr>
<td>End population and End rates</td>
<td>20,369</td>
<td>+91</td>
<td>22,273</td>
<td>-58</td>
<td>2.34</td>
</tr>
<tr>
<td>15-34f</td>
<td>20,272</td>
<td>-97</td>
<td>22,030</td>
<td>-243</td>
<td>2.37</td>
</tr>
<tr>
<td>35-59f</td>
<td>20,386</td>
<td>+114</td>
<td>22,037</td>
<td>+7</td>
<td>2.37</td>
</tr>
<tr>
<td>35-59m</td>
<td>20,439</td>
<td>+52</td>
<td>22,026</td>
<td>-11</td>
<td>2.37</td>
</tr>
<tr>
<td>60+f</td>
<td>20,514</td>
<td>+75</td>
<td>22,086</td>
<td>+60</td>
<td>2.36</td>
</tr>
<tr>
<td>60+m</td>
<td>20,523</td>
<td>+8</td>
<td>22,104</td>
<td>+18</td>
<td>2.36</td>
</tr>
<tr>
<td><strong>H’hold change due to</strong></td>
<td>20,523</td>
<td>+1,357</td>
<td>22,104</td>
<td>+1,581</td>
<td>2.36</td>
</tr>
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</tr>
</tbody>
</table>

**England. Calculations from DCLG 2012-based detailed data from stage 1**
Decomposition of household change
England, thousands per annum

- **All population impact**
- **Total Population**
- **Age-sex composition**
- **Relationship status**
- **All rates impact**
  - Rates 15-34f
  - Rates 15-34m
  - Rates 35-59f
  - Rates 35-59m
  - Rates 60+f
  - Rates 60m
Supporting and extending evidence

• Concealed families measured by census (Alan Holmans)
  – 0.935m in 1951 to 0.170 in 2001; 0.289m in 2011
  – Mainly but not only young couples under 25

• Shift from home-ownership to private renting
  – All ages but especially young adults 20-34

• Young people living with parents (ONS from LFS)
  – Increase has continued 2011-2014
% living with parent, UK

Source: ONS, from LFS, includes those in their own families
Implications for household projections

• Uncertainty demands that the 2011 census analysis be completed
  – All is provisional until then
• A long-term reduction in young people’s household formation
  – Not the biggest driver of increased household demand, but most related to policy
  – Acceleration in 2000s of trends apparent in 1990s, deepening in 2010s
• Re-instate concealed families in the projections
  – Conceptually straightforward – an extra ‘household type’
  – Are data for localities available?
• Relationship status is relevant but:
  – What is stable about the representative rates in each relationship group?
  – Latest projections of relationship status are 2008-based
  – Intended to be de facto marital status but it is not
• Acknowledge uncertainty of current trends with standard sets of variant scenarios
Concealed lone parent and couple families increasing again

England and Wales: Table from Holmans, 2014

<table>
<thead>
<tr>
<th></th>
<th>Households</th>
<th>Concealed Families</th>
<th>Households plus Concealed Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>13,259</td>
<td>935</td>
<td>14,194</td>
</tr>
<tr>
<td>1961</td>
<td>14,724</td>
<td>702</td>
<td>15,426</td>
</tr>
<tr>
<td>1971</td>
<td>16,871</td>
<td>426</td>
<td>17,297</td>
</tr>
<tr>
<td>1981</td>
<td>No census data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>20,213</td>
<td>273</td>
<td>20,486</td>
</tr>
<tr>
<td>2001</td>
<td>21,825</td>
<td>170</td>
<td>21,995</td>
</tr>
<tr>
<td>2011</td>
<td>23,740</td>
<td>289</td>
<td>24,036</td>
</tr>
</tbody>
</table>

13% of all families with reference person aged under 25 are concealed in other households (16% in London).

Less than 2% for all ages (3.5% London)
Young people living with parents

Young adults aged 20-34 living with their parents, %

Source: ONS (2014) from LFS, 3-year average centred on year shown

Note: excludes 1-4% young people in concealed families living with parents.