

**HOUSEHOLD ANALYSIS REVIEW GROUP: METHODOLOGY FOR
COMPILING HOUSEHOLD ESTIMATES AT LOCAL AUTHORITY LEVEL****Purpose**

1. Previous HARG meetings have identified three possible methods for producing household estimates for Scotland. This paper summarises each method and outlines the advantages and disadvantages of each. The Annex describes in more detail how the figures are derived, and the tables and charts illustrate the results of each approach, for each local authority area.
2. Members of HARG are asked to:
 - State which method they would prefer to adopt;
 - Identify any further information which might be needed before reaching a final decision on the methodology to use.

Possible methodologies**(a) Stock-based approach**

3. This is the approach that is currently used. The number of households identified at the Census is updated annually on the basis of changes in the housing stock (new builds, demolitions and conversions). The figures are adjusted to account for changes in the number of vacant properties in the public sector, and assumptions are made about trends in the number of vacant properties in other sectors.

Strengths

- This approach has tracked the overall trends reasonably well, with the 2001 household estimate being just 20,000 (approximately one per cent) higher than the Census figures.

Weaknesses

- The time taken to assemble information from each local authority on changes in the housing stock (new builds, demolitions and conversions) means that there is a time lag in producing the household estimates.
- This approach requires an assumption about the level of vacancies in private sector housing, which is the largest component of the stock.
- There is some concern about the quality of the stock information supplied. When we consult on the figures, we can receive significant adjustments to the figures that were originally supplied.
- No information is included on household type – just the total number of households.

(b) Population-based approach

4. This approach uses information from the mid year population estimates and the Census, to estimate the number of households by type. In order to estimate the population living in private households, the population living in communal establishments is subtracted from the mid-year population estimates. To estimate the

number of households of each type, information on household composition is obtained from the last two Censuses, broken down by local authority area and age group. These figures are then projected forward and applied to the mid-year population estimates. This is equivalent to the current approach of producing household projections.

Strengths

- The household estimates and population estimates would tie in together, and the current time lag between the publication of the two sets of statistics could be avoided.
- Estimates of the type of household would also be available.

Weaknesses

- The same weaknesses exist as with the household projections. In particular, the statistics rely on household composition information obtained from the Census, and do not account for any changing trends in household formation since the last Census. However, it may be possible to use information from a sample survey, such as the Scottish Household Survey, to estimate these trends for Scotland as a whole.

(c) Council tax-based approach

5. A number of councils have suggested that a better approach would be to base household estimates on the council tax base. Since 1996, councils have provided the Scottish Executive with figures which show the number of dwellings, and information on exemptions can be used to determine the number of occupied dwellings. This approach has been discussed at previous HARG meetings, and in March 2004, councils were asked whether they preferred this approach to the stock-based approach. The response was mixed, with some local authorities saying it would be premature to use the council-tax based approach for the 2002 household estimates, and that further investigation was needed before a decision could be reached.

Strengths

- The strongest advantage of this approach, compared to the other two, is that the figures will not 'drift' between Censuses.
- Some information will be available on household type, including the number of single adult households, and unoccupied dwellings.
- The figures will be more timely than the stock-based approach, and will not require assumptions about levels of vacancy in non-local authority housing stock.
- Some councils already use the council tax base to produce their own household estimates.

Weaknesses

- This approach is dependent on an administrative system as a data source. Changes to this system could have an effect on our statistics, and we would need to monitor this carefully. In addition, councils can update the information held on the system throughout the year. However, because of its use in grant distribution, there has been an incentive for councils to thoroughly clean their council tax billing databases before drawing off the information to complete this return.
- The figures do not exactly match the Census, as they do not count the number of households – for example, an occupied dwelling could contain more than one

household. To account for this, we could anchor the results for 2001 to the Census, and use the council tax base to monitor changes since then.

Next steps

6. Household estimates have not been published since 2002, as we have been reviewing the methodology for producing them. HARG members are asked to agree the preferred methodology. GROS will then write to each council, describing the proposed new methodology, and asking for their comments, before deciding which methodology should be used for publishing household estimates.

GROS: Household estimates branch
February 2005

ANNEX: Basis of the calculations for the three methodologies for producing household estimates

The Annex tables attached to this paper illustrate the results obtained from the three methodologies available for producing household estimates:

- (a) Stock-based
- (b) Population-based
- (c) Council tax-based

Each approach is adjusted to provide figures comparable with the Census results. The methods used are described below.

(a) Stock-based approach

- **Summary:** This is the approach that is currently used, measuring changes in the amount of housing stock since the last Census. The figures shown are based on those that have been published, but the figures for 1991 to 2000 have been adjusted to reflect the results of the 2001 Census – the results now tie in with the 1991 and 2001 Censuses.
- **Source:** Housing stock information provided to the Scottish Executive Housing Statistics Branch.
- **Method:** The number of households identified in the Census is updated annually on the basis of changes in the housing stock (new builds, demolitions and conversions). The figures are adjusted to account for changes in the number of vacant properties in the public sector, and assumptions are made about trends in the number of vacant properties in other sectors, based on the results of the most recent Census.
- **Years:** Figures are available for 1991 to 2002.

(b) Population-based approach

- **Summary:** This approach applies information on household composition, obtained from the Census, and applies it to the mid year population estimates, to estimate the number of households by type.
- **Source:** Mid-year population estimates, or 2002-based population projections, from the General Register Office for Scotland.
- **Method:**
 - The following information is obtained from the 1991 and 2001 Census, for each local authority area:
 - i. The proportion of the population living in communal establishments (by sex and age group)
 - ii. The headship rates, which measure the proportion of private households in each household type, by the age of the head of household.
 - These figures are projected for the years between Censuses, assuming that the change occurs in equal steps between years.
 - We then take the mid-year population estimates for each year (which have been adjusted since the 2001 Census), subtract the proportion of the population living in communal establishments, and use the headship rates to estimate the overall number of households, by type, for each year.
- **Years:** Figures are available for 1991 to 2004. This approach can also be used to produce household projections, for future years.

(c) Council tax-based approach

- **Summary:** The number of occupied dwellings is estimated from local authorities' council tax systems.
- **Source:** Council tax returns for each council, supplied to the Scottish Executive's Local Government Finance Statistics branch.
- **Method:**
 - For each council, information is available on the total number of dwellings on the valuation list (excluding free-standing lock-ups). The number of dwellings that were exempt (usually empty properties) and the number entitled to two discounts, (which are also unoccupied, and include second homes) are then subtracted from this figure, to estimate of the number of occupied dwellings in September of each year.
 - These figures are adjusted to estimate the number of occupied dwellings in June of each year, to provide figures that are comparable with the population-based figures.
 - The figures do not exactly match the Census, as they do not count the number of households – for example, an occupied dwelling could contain more than one household. To account for this, the difference between the 2001 Census and the number of occupied dwellings in 2001, is subtracted this from each year's figures, to obtain results that are anchored to the 2001 Census.
- **Years:** Figures are available on the number of occupied dwellings each year, from September 1996 to 2004. These figures have been adjusted to provide figures for June 1997 to 2004.