

Population and Migration Statistics Committee (PAMS) (Scotland)

Sub-National Population Projections (SNPP) Options

Consultation

1. A UK wide consultation was conducted to find out users' views on when the next set of National Population Projections (NPPs) should be produced due to the different release dates for 2011 Census and subsequent rebased results across the UK.
2. Views on two options were sought.
 - Option 1: Produce 2012-based NPPs (using Scotland data rolled forward from the 2001 Census) by October 2013.
 - Option 2: Produce 2013-based NPPs (with all countries of the UK 2011 Census data included) by October 2014.

Decision

3. The decision has been made to produce 2012-based NPPs to be published in Autumn 2013. These NPPs will be based on 2012 estimates rolled forward from the 2011 Census for all four countries of the UK. The back series of 2002-2010 mid-year population estimates for England and Wales will be available from December 2012 and will be used for the assumption setting process. However the rebased back series of population estimates will not be available for Northern Ireland and Scotland in time to feed into the assumptions for this set of NPPs, and so data rolled forward from the 2001 Census will be used.

Responses in Scotland

4. National Records of Scotland (NRS) received 21 responses to the consultation. Thirteen responses (two of which were collective responses) were in favour of option 1, seven preferred option 2, and one respondent gave no preference.
5. The main reason most respondents preferred option 1 was it meant that the next set of population projections will be published in time to feed into the next set of Housing Need and Demand Assessments, local development plans, Strategic Development Plans, and the National Planning Framework. They were also in favour of keeping to the current timetable of producing population projections every two years. Some also said that they preferred this option as it aligns better with the data available for the rest of the UK.
6. Those who were in favour of option 2 chose this as they feel the projections are becoming more inaccurate and less realistic the further we roll forward from the 2001 Census. They feel that it would be better to wait until the 2011 Census data is available so more recent data can be used for the next set. It would also mean that projections incorporating the 2011 Census results would be produced as soon as possible.
7. It was noted that consideration needs to be given to the timing of release dates in relation to the Scottish Referendum; there are pros and cons for both options. There is a concern that option 1 may be regarded as 'misleading' as it might not represent the most up-to-date accurate picture of migration in Scotland, but the later release date in option 2 could be seen as political.

England, Wales and Northern Ireland

8. There was an overwhelming preference for option 1 in England, a mixed response from Wales, and a preference for option 1 in Northern Ireland.
9. Respondents in England stated they would like to see the results of the 2011 Census incorporated into projections as soon as possible, and felt that not having data from the Scottish 2011 Census incorporated into the assumption setting process was not a reason to delay the process. They wanted the data as soon as possible to feed into planning services and housing provision. There was a slight worry by some of how the lack of Scottish 2011 Census data might impact on the assumptions.
10. In Wales one user was keen to get the projections as soon as possible to feed into financial modelling, but others were more interested in the SNPPs and since Wales do not constrain their SNPPs to the NPPs, the timing of the NPPs do not affect them.
11. In Northern Ireland, they are in favour of option 1 due to the earlier release date, and they don't think there will be much difference in the assumptions or results for either release date. Their main objection for option 2 is that it would delay the release of the next set of SNPPs and they never produced 2010-based SNPPs.

Sub-national Population Projections (SNPPs) in Scotland

12. It is planned to produce sub-national population projections (SNPPs) for Scottish administrative areas following the NPPs in Spring 2014¹, similar to the current timetable.
13. Although historic migration and population estimates rebased following the 2011 Census will not be available for Scotland in time to feed into the NPP process, they should be available before the SNPP processing starts, therefore incorporating this data should be considered.
14. The effect of including this data will depend on the difference between the estimates rolled forward from the 2001 Census, and the estimates rolled forward from the 2011 Census and the rebased back series. It is important to consider the difference at Scotland level and also the spread across areas, ages and sexes. If for example there is a big difference in the number of females of childbearing age then this will have an effect on the number of projected births and so the number of children projected into the future. Differences in the migration estimates would affect projected populations and therefore also the projected natural change. Should we wait to see how big the discrepancies are before deciding what action to take for the SNPPs? If so, how big a difference is significant?
15. Options for SNPPs:
 - (i) Use estimates of **population and migration rolled forward from the 2001 Census** for the years prior to 2011 to calculate all assumptions and use 2012 mid-year estimates for the base year rolled forward from the 2011 Census (i.e. the data that will be used for the 2012-based NPPs);

Footnote

1) Paper 7 PAMS (12)15

This option would mean that the SNPPs are consistent with the NPPs, although not using the rebased back series would mean that 2011 Census data would not be included in the SNPPs except for the base year data until the 2014-based projections.

This option would be most straight forward to implement at a time when resources are tight.

- (ii) Use **2012 mid-year population estimates** for the base year rolled forward from the 2011 Census and the rebased back series for other years when calculating the assumptions following the release of the 2011 Census;

Using the rebased population back series to calculate the assumptions would mean they would not be consistent with the NPPs but they would better reflect the results of the 2011 Census. To calculate the migration assumptions for the SNPPs, the base year population data is used. To calculate the projected population, data for the base year is used, and birth and death figures from the previous five years (which are not being revised). The difference between the new Census data and the estimates rolled forward from the 2001 Census will determine the effect of incorporating the rebased back series.

- (iii) Use 2012 mid-year population estimates for the base year rolled forward from the 2011 Census and **rebased population and migration estimates** following the release of the 2011 Census;

Again using the rebased population and migration back series to calculate the assumptions would mean they would not be consistent with the NPPs but they would better reflect the results of the 2011 Census. To calculate the migration assumptions for the SNPPs, the previous five years of migration data is used – both within and outwith Scotland migration – and the migration assumptions set in the NPPs. This option would mean that the SNPP migration assumptions are set using different data from that used to set the NPPs. The difference between the new Census data and the estimates rolled forward from the 2001 Census will determine the effect of incorporating the rebased back series. Using the rebased population data would also affect the results.

Although this option would create inconsistencies, using the rebased migration and population estimates would improve the accuracy of the SNPPs and would be sensible to do where possible, even though the Scotland level assumptions have been calculated using different data. This would mean that the share within Scotland would be based on the most up-to-date data.

- (iv) Produce SNPPs using the rebased Scottish data following the release of the 2011 Census that are **not controlled** to the NPPs;

Currently we do not have a method or the resource to develop uncontrolled projections in time to meet a Spring 2014 release date for SNPPs.

- (v) **Revise the mortality and fertility rates** used in the NPPs following the release of the Scottish rebased back series and use along with data rolled forward from the 2001 Census or the rebased back series migration and population estimates.

Due to the timing of the 2011 Census releases for Scotland it is not going to be possible to incorporate the rebased back series into the mortality and fertility rate assumption setting process for the NPPs to create the Scotland level rates, however this data should be available at the time of producing the SNPP assumptions. Usually the NPP assumptions are used along with the previous five years of birth, death and population data for each administrative area and the NPP assumptions are used to create the local

scaling factors. If we were to use the rebased back series to create mortality and fertility rates for the SNPPs, these would be based on different data from the NPPs. Recalculated Scotland level mortality and fertility rates could then be used along with administrative level data rolled forward from the 2001 Census or the rebased back series at administrative level.

Office for National Statistics (ONS) create the Scotland level mortality and fertility rates for the NPPs using a complex method. To create different Scotland level rates to use for the SNPPs would be difficult. It would be possible to calculate the local scaling factors using the rebased back series and Scotland level rates created by ONS for the NPPs. This would mean that not necessarily the most accurate total number of births or deaths is projected at Scotland level but at least the share of births and deaths across the country would be based on the most accurate data available.

Recommendation

16. The recommendation is option (iii). This would use 2012 mid-year estimates for the base year and the rebased back series of population and migration estimates along with the Scotland level fertility and mortality rates from the NPPs to update the local scaling factors and create the fertility, mortality and migration assumptions. Migration assumptions for Scotland from the NPPs would be used along with the rebased migration estimates for administrative areas to set migration assumptions for the SNPPs.

Household Projections

17. Household projections will be published a few months after the sub-national population projections. We are planning to incorporate updated information on household structures from the 2011 census into the household projections, so they should reflect any changes in household formation rates since the last census. We are planning to do some more work to consider how best to incorporate the census information into the household projections (e.g. whether to use alternatives to the 'Head of Household'), and whether there are any other changes we should make to the household projections; we will discuss this with PAMS and Household Analysis Review Group (HARG) members at future meetings.

PAMS members' views are welcome on these proposals.

NRS: Population and Migration Statistics
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