

## **BSPS Day Meeting on Population Projections, 29 February 2008**

### ***The 2006-based national projections and the challenges of an ageing population.***

#### **Helen Bray and Shayla Goldring (Office for National Statistics Centre for Demography)**

Helen began by talking about the latest set of population projections. The context behind this set of projections was that all three components fertility, mortality and migration showed trends pointing to a higher population. The projections are available on the Government Actuary's Department website [www.gad.gov.uk](http://www.gad.gov.uk) although it is hoped this will be moved across to the ONS website in 2008.

Helen then outlined briefly the background to setting the assumptions, including the use of the academic advisory panel. Overall the new assumptions had raised the projection of the population in 2031 by around 4 million compared to the previous projections. Having been cautious in not raising the fertility assumption in the 2004-based projections, five successive years of rises had confirmed the need to raise the assumption this time. Mortality had continued to improve overall, but in particular higher assumptions had been made for the so called 'golden cohorts' born around 1930. For migration a short term allowance had been made for increased migration from EU accession countries with the long-term assumption being reached later than in previous projections. In addition the long-term migration assumption had also been raised. The fertility and mortality changes lead to natural change being positive for the entire 70 year projection period, whereas in the previous projection it became negative around 2030. Natural change is also greater than the net migration change in the medium term, but it should be noted that natural change is affected by the fertility and mortality of migrants. Using a nil migration variant it is possible to estimate that migration is responsible for 69 per cent of the population increase in 2031.

Next Helen talked about uncertainties in the projections, presenting results of some of the variant projections. Fertility had the largest effect as an individual variant, but Helen noted that the width between the high and low population variants was some 25 million people in 2056. Turning to the aging of the population Helen first illustrated this with a population pyramid showing how the top of the pyramid had expanded by 2031. She then showed a chart of the old age support ratio, both under current state pension age and after the legislative changes in state pension age. Without the changes in pension age the support ratio would fall from around 3.2 people working age for each person of state pension age to below 2 in 2056. Even with the changes in pension age the ratio would still fall to 2.8. Helen noted that migration did not have a great effect on the support ratio, showing that that the support ratios from the high migration variant still suggested the ratio would fall, and that high and low migration variants would change the ratio by only  $\pm 0.1$ . Helen ended by showing that the proportion of the population aged 65 and over would rise from around 15 per cent today, even under the 'young' variant to 21 per cent. Under the 'old' variant it would rise to 30 per cent.

Shayla continued the presentation initially focusing on the rise of the 85 and over age group whose proportion had doubled between 1971 and 2001 and was projected to double again by 2031. She then placed ageing in Britain in the context of Europe. Using the measure of the proportion of the population aged 60 and over she showed that Britain is not ageing as much as the EU average. Italy and Germany were projected to continue to be the most aged European Countries.

Although the UK was neither as aged or ageing as rapidly as some other European countries there were important policy implications arising from the ageing that would take place. A significant number of older people live alone, which raises potential care issues. Shayla also pointed to the trend for women born in the 1960s to be more likely to be childless, children being one potential source of informal care. There were also complex effects of the decline in marriage, although there was a compensating effect in that improved mortality was leading to more couples living longer together. Shayla mentioned that research had shown that being unmarried and childless is linked to an increased chance of living in a communal establishment. Shayla also spoke about how the median age of the working age population had changed over time. This had actually declined in the early 1980s as the 1960s baby boomers entered the workplace but the slow rise since then was projected to continue. Shayla reminded the meeting that care should be taken when looking at such demographic measures. A DWP study in 2003 had shown that only half of women and less than half of men were actually working one year before they reached pension age. She closed by outlining future work relating to ageing that ONS may undertake.

Questions followed. David Coleman (Oxford University) asked why the projected period life expectancy lines did not continue straight but rather bent around 2031, although he noted the bend was somewhat less substantial than in previous projections. Chris Shaw (ONS) explained that this bend was in part an influence of the golden cohort effect, but also because improvements for those in mid ages had been much lower. Emily Grundy (LSHTM) asked a question of the projections and made some comments about ageing. Firstly to what extent the projections take account of feedback loops, such as housing growth affecting fertility. Helen Bray reiterated that the projections were simply trend based and Chris Shaw said that to a certain extent some of the feedbacks will be present in the overall past trends and thus implicitly included in the projections. Emily pointed out that although increasing health care costs were often sited as a result of population ageing; increased costs had been shown, at least for acute care to be driven by technology. She also pointed out that although childlessness may be an issue for the 1960s born cohorts, it would still be a long time before these people reach advanced old age, in fact the cohorts reaching old age in the next 30 years will have a low level of childlessness.

### ***Results of the National Population Projections Expert Group Questionnaire.***

#### **Chris Shaw (Office for National Statistics Centre for Demography)**

Chris began by explaining that the Expert Group had been established via BPS as a way to advise on the appropriate assumptions to be used for the National Population Projections (NPP). He proceeded to talk a little about the group and then showed

some results from the 2007 questionnaire which all the experts had been asked to complete ahead of the 2006-based projections. Details of the expert meeting for the 2006-based projections and summary results from the questionnaire are available from the GAD website.

The Expert Group is currently made up of six members: David Coleman (University of Oxford), John Hollis (GLA), Mike Murphy (LSE), Phil Rees (University of Leeds), John Salt (UCL) and Robert Wright (University of Strathclyde). Chris noted that the NPP assumptions have moved closer to the expert views, though this may be partly coincidental. He also explained how the group have been influential on mortality thinking, reinforced the current choice of variant assumptions and provided input to the stochastic forecasting work.

The 2007 questionnaire, piloted by the Expert Group, was devised by Wolfgang Lutz of the International Institute for Applied Systems Analysis (IIASA). The aim of the questionnaire was to provide a framework for the assessment of expert opinion and to assess the validity and importance of arguments about future trends. Though the questionnaire was somewhat long and unwieldy, it has yielded a rich source of qualitative data.

Chris then presented some of the results, beginning with estimates of the TFR, life expectancy at birth and total net migration in 2030. In each case the experts had been asked for the 'most likely level' and for a 67% confidence interval. Chris outlined how the TFR estimates varied from 1.5 to 2.0 with an average of 1.78. On male period life expectancy at birth, estimates from most of the experts ranged from 81 to 84 years, with the degree of uncertainty being fairly consistent. On net migration, forecasts ranged from 100 thousand to 250 thousand, with a huge difference in the individual confidence intervals. Chris noted that, in general, the expert 67% confidence intervals were slightly greater than the ONS deterministic high/low variant widths.

Chris explained how the questionnaire was structured around the various forces thought to influence fertility, mortality and migration. Within each force, a list of possible arguments was given. In each case the experts were asked whether they thought the argument was valid and then how important the argument was on the key variable.

The results for several different arguments were then presented. For example, on fertility, though most of the experts thought it would be of little importance, there was 100% agreement on the validity of the argument that 'a strong desire for two child families will continue because of the value attached to siblings'. However, the experts didn't always agree. On the related argument that 'it is part of human nature to want at least two children and this is unlikely to change in the future', the experts clearly disagreed with each other. Chris presented similar examples of agreement and disagreement for the forces shaping mortality and migration. Of over 90 arguments, there was only one which the experts unanimously agreed was invalid. Chris finished the presentation by summarising the factors which were considered to be valid by the Expert Group and considered to have the potential to impact on future fertility, mortality and migration levels.

Questions followed, Patrick Carroll (PAPRI) suggested that numerous influences affecting fertility e.g. taxes and benefits, housing and fertility control appeared to have been overlooked. Chris explained that while some factors had perhaps been omitted, others had been included, but were just not covered in the presentation. Gillian Goddard commented on the demographic profile of the Expert Group. Chris acknowledged the similarities in age, gender and ethnic group and agreed it would be good to enlarge and widen the membership of the group. Simon Brown (ONS) asked whether the opinions from the Expert Group were fed directly into the assumptions. Chris reiterated that the Group had an advisory role and had possibly been influential on the mortality assumptions. Phil Rees asked whether the findings could lead to a research review, possibly in collaboration with the ESRC. He also suggested that an 'Expert Group' projection variant could be run using the mean assumptions from the questionnaire.

### *Uncertain population forecasts*

#### **Nico Keilman, University of Oslo**

Nico Keilman, a Professor at the Department of Economics at the University of Oslo, presented his work and that of others on the accuracy of population trends across Europe, including the Uncertain Populations of Europe project financed by the EU Framework Programme for Research. Nico pointed out that despite richer data sources, more refined theories of demographic behaviour and also more sophisticated methods of analysis, demographic forecasts are no more accurate now than for 25 years ago. He showed that forecast errors are largest for population forecasts by age structure, particularly for the old and young age groups and also for particular component variables such as migration. He noted two ways of quantifying uncertainty, comparing results of historical forecasts against actual values and constructing confidence intervals for projections based on probabilistic models.

Nico presented the empirical errors for the population and component projections made by statistical agencies in 14 different countries in Europe. He showed that countries underestimated mortality improvements between 1950 and 2000. He linked this to the assumption drag associated with relying on regularities in time series data to use in forecasting and the time taken to work out whether a trend is going to continue. He showed that the high and low variants in traditional deterministic forecasts lead to inconsistencies when interpreted as uncertainty variants. He concluded that the implications of the large uncertainty surrounding population forecasts were that the expected errors should be calculated and also that users should be informed of forecast errors in order that they appropriately deal with forecast uncertainty. Whether and inflation forecasts can serve as examples.

Nico received a question about the uncertainty of migration figures used and whether inflows or outflows tended to be more variable. He replied that data constraints meant that mostly net flows were used. He also said that variability was larger where numbers of migrants were larger, e.g. those of working age, relative to population size.

## ***Sub National Population Projections by Ethnic Group***

### **Professor Phil Rees (University of Leeds)**

Phil Rees presented some of the preliminary work he had completed towards developing a model for ethnic estimates of the population in each area. This is part of an ESRC funded project that has the aim of projecting the population of each ethnic group, at local areas in the UK, for the next 50 years.

He explained that the model would use the same 16 categories of ethnic group used in the 2001 Census and other surveys but that an extra category would be introduced for those from the A8 accession countries.

A table of population flows was presented that showed the all of the inputs for the model. These inputs and some of the research behind these were explained during the presentation.

Of particular interest was the work on investigating Ethnic Mortality. There has been some investigation into using Census data to compare the answers to the long-term illness variable and the 'not good health' variable against Ethnic Group to derive estimates of mortality by ethnic group.

Also of interest was the 'New Migrants Database' which will potentially make use of several data sources, including;

- National Insurance (NI) Database
- Workers Registration Scheme
- NHS Patient Register
- Schools Census data (Pupil Level)

Several questions were asked following the presentation and Phil gave answers to these:

Questions followed, A question on how ethnicity of children depends on the mother was asked? In particular, can this differ from the mother's ethnicity? It was commented that results from the GHS may be of use. Phil replied that this is based on Census data where the child and the mother's ethnicity are recorded to produce a population matrix of probabilities of each ethnicity. The GHS may help in the future as Census data becomes less timely. Phil was unsure as to whether the facility for 'ethnic switching' (a change in the ethnic group of an individual) would be included in the model. This would involve looking at results from the longitudinal study.

Michelle vonAhn, Newham, asked whether Flag4 NHS data could be used to help with immigrant estimation. Phil replied to say that this source was already being used in the model. It was noted that the Centre for Advanced Spatial Analysis (CASA) at the University College London (UCL) may be doing relevant work with the NHS Register. It was also noted that Les Mayhew, City University is doing work for Newham on record linkage across administrative data sources to get a better handle on new migrants (cf. his work for Islington and Brent using record linkage).

A representative from GLA asked whether NHS Hospital Episode Statistics could be used in estimates of ethnic mortality? Phil replied to say that it would take an enormous amount of work to get permission from each part of the NHS to use this sensitive data, which the GLA has used. The GLA have a close relationship with the London Public Health Observatory which will have made this task easier. To Phil's knowledge only 60% of deaths were covered by HES.

David Coleman, Oxford University, asked Phil how he was intending to produce emigration estimates by ethnicity. Phil explained that they could combine IPS Country of destination with internal out-migration rates by age and sex and a conversion from country of birth to ethnicity using census data. Phil noted that this would produce 'guesstimates' at best. Phil stated that "if a job was worth doing, it was worth doing badly", GK Chesterton. The Institute for Policy Research has looked at other countries censuses but this is not something that can be realistically done as part of this work.

Professor Emily Grundy, London School of Hygiene and Tropical Medicine, asked whether Phil could make use of Registration data to get good estimates of the 'under 5' population? Also could you make use of information on the benefits paid overseas to help estimate outward migration? Phil replied that the registration data records country of birth and is unlikely to be indicative of the ethnicity of the child or the mother. Phil had not considered using data regarding benefits paid abroad.

Emily Grundy, London School of Hygiene and Tropical Medicine, suggested looking at the Poor Health and Illness variables from the 2001 Census carefully as they may have different relationships with mortality? Phil agreed that this was a good suggestion and noted that the existing SMR versus health indicators comparisons have all used LLTI rather than poor health.

Emily Grundy also commented that the relationship between SMRs and SIRs were likely to be different for different ethnic groups? The different groups have different cultural traditions. Phil acknowledged that this may be the case and that he will investigate different regression relationships for England, Wales, Scotland and Northern Ireland, where previous work (Rees, Senior, Boyle and others) have shown different relationships. This partition could be extended to GORs within England. Phil will also do one thing to mitigate this by controlling ethnic group age-sex specific mortality rates to the mortality rates for the whole population at local authority level. Phil is also applying to use the LS so that deaths can be linked directly to 2001 ethnicity. Emily Grundy added that an early application to use the LS to study ethnic fertility and mortality would be good because of potential disruption to LS operations as a result of out-sourcing to an IT firm in Slough in the future! The rump of ONS including LS shortly moves to the Family Records Office in Islington in the Spring.

Yong Lee, Kent County Council, asked how will the model reflect changes accurately? Will it take account of policy based information? Phil replied that at the moment the model is set up to be trend based. However it is possible that policy based information could be used in the future. Phil was unsure how this could be made consistent nationally and whether this information could differentiate between different ethnic groups.

Niko Keilman, University of Oslo, said that this is an ambitious project and asked whether Phil had considered using a simpler apportionment model to disaggregate the existing Sub National Population Projections? Niko commented that there seemed to be many challenges involved with estimating each component fertility, mortality etc. Phil noted that although he didn't answer this question directly during the session, (through misinterpretation) he explained his thoughts on the issue to Niko later. His view was that this approach should be taken as a last resort (e.g. a demographic model could be used to confidently predict 75% of LAs with a big enough ethnic minority population and that 25% of LAs could use the suggested approach). The demographic model should be showing how internal and international migration patterns are changing the ethnic composition of areas with low concentrations.

## ***London Projections***

### **John Hollis (Greater London Authority)**

After lunch the focus shifted to sub-national projections and John Hollis began with a presentation on the Greater London Authority's (GLA) London projections by Borough, age and gender.

Firstly John gave a history of the London projection system, including how it was incorporated into the GLA on the latter's formation in 2000. The GLA's first major task was the creation of the London Plan, and John explained how his team prepared for this document by consulting with an expert panel to gain advice on how to achieve a good starting point for their population and household estimates and projections.

They used the advice given, and the results of the 2001 Census Key Statistics, to complete their submission to the London Plan EiP (Examination in Public) panel, which was made public in 2003. One of the recommendations of this panel was the forging of a link between the GLA projections and ODPM (now CLG) household projection methodology. The CLG household projections came out in 2006 and were incorporated into the GLA 2006 round of projections, and later the 2004-based household figures were incorporated into a GLA 2007 round.

Next John gave more detailed information on the data used for the projection process, both for the base population and also fertility, mortality and migration figures to enable GLA to create the necessary assumptions. He also ran through how each of the assumptions were calculated. John illustrated effectively the many decisions which had to be made before population projections by London Borough could be produced.

John then ran through the projections which were made in the 2007 round. There were four variations of the population projections, including one (MYE Trend) made on a purely trend basis, and three others giving variations as needed for applications such as use by the Transport for London (a high variant). In addition, John told us about the London household projections which the GLA produce every fifth year as an iterative process from the main population projections. Finally, he advised of further conversion to produce ward level projections.

A number of questions followed, Phil Rees, Leeds University, asked whether there was a need for information on the composition of households. John advised that the

stock database gives this information and, as London has not more than a 1% stock increase each year, a need has not been proven. CLG are reviewing their national projections and may include household size and composition in any future changes. Patrick Carroll, PAPRI, asked how GLA apply fertility rates to the household projections, to which John replied that there are no further assumptions on fertility as the population projections were done first and then drilled down for household projections. Felicity Manning, Leicestershire County Council, asked how the projection varied the over 75 population living in communal establishments, especially those with the status of married. John advised that CLG assume a constant population, which is likely to result in a decline in the proportion of the married over 75 age group living in communal establishments.

### ***Rôle of Regional Statisticians***

#### **Jenny Wood (Office for National Statistics)**

Emma Arnell-Smith conveyed her apologies to the meeting, she was unable to attend and deliver her presentation due to ill-health.

Jenny Wood, the regional statistician for the East of England, kindly stepped in at the last minute to give a talk on the role of the regional statisticians. She explained that the development of regional statistical teams was a recommendation from the Allsop Review of Statistics for Economic Policymaking.

A small team is based in each of the nine English regions and their core functions include:

- To improve the comparability of regional and sub-regional data
- To keep ONS up to date with changes in the regions
- To quality assure final estimates of regional GVA
- To act as a first contact point for regional bodies with ONS

Jenny said that of particular relevance to the meeting was the fact that the regional statisticians were able to provide assistance on some elements of the consultation on subnational population projections.

Further information on the role of regional statisticians and regional data is available on the ONS website:

<http://www.statistics.gov.uk/about/ons/regional-statisticians>

### ***Projections - local authority usage***

#### **Greg Ball (Birmingham City Council)**

Greg Ball started his session by noting that the views presented were his personal views and not the official views of Birmingham City Council. He said that local authorities did use ONS projections and in some cases commissioned their own, but how projections were used varied between authorities. This reflected both differences between individual the local authorities and the areas they covered, size, actual and

perceived local issues and variation in organisation and level of expertise, interest and resources.

Whereas the LDA represented the local authority Rolls Royce in terms of resource for this sort of work, many authorities could only fund the 'mini-metro'.

Greg went on to describe some of the issues and areas where local authorities currently used projections either directly or indirectly:

projections of specific populations including armed forces, expanding towns, commuting and declining populations

- particular issues for cities such as Birmingham and areas in the West Midlands, the local government finance grant formula,
- resource allocation, and resource allocation (which is in part based on ONS population projections),
- local development frameworks and regional spatial strategies planning and monitoring,
- health planning and monitoring - including resource allocation, and local joint strategic needs assessments (JSNAs),
- education and skills and work-force modelling within the context of an aging work-force, skills levels, school capacity and regional and local ambitions for the population,
- leisure, open space, retail and crematorium service planning and monitoring,
- transport and the transport 'universe' of work,
- housing needs along with surveys and household structure,
- boundary reviews, *and*
- community cohesion work and scrutiny.

Projections played a part in long-term planning, but up-to-date projections were also key for monitoring and performance indicators and for short and medium-term service planning. There was increasing need to understand and plan for population changes, impact and potential pressure with changing demands for services, including the impact of changes in households, ethnic population, the labour force and disability. How well local authorities reacted to this were measured in their performance indicators. In addition satisfaction with services would be monitored as a performance indicator through the new 'Places' survey.

Almost all local authority councils make some use of ONS projections. Those councils who prefer not to use them do so either for technical reasons - methodological reservations on data quality or concerns with projections in their particular area of specific population sub-groups, or prefer policy-based forecasts and make use of ONS projections selectively. Policy-based forecasts have limitations in terms of comparability and it can be too easy to alter inputs or assumptions to reach a desired outcome.

Requirements identified are for accurate and timely projections, with long and short-term validity. There is also a need for flexible geographies and assumptions, including variant projections and policy related forecasts.

- **Timeliness:** the timing of official projections do not conform with policy deadlines, and discrepancies over time can be difficult to manage. This is the

case with existing Regional Spatial and Economic Strategies which may be coming up for review but are based on 'old' projections.

- Key policy areas include children and older people, work-force and housing to some extent, issues around overlapping age-groups, and along with cohesion issues, migration churn and flows (rather than just totals), and the detailed assumptions, particularly for areas producing their own forecasts.
- Validity: a further problem is that current trend-based projections for future years may not necessarily be the 'most likely' outcome. Variants covering a range of possible outcomes are needed. Some areas wanted a natural change only variant. Greg noted the need to ensure national consistency, balance internal migration flows, but international migration assumptions were perceived as inflexible and presented the most problem for many areas. At local level, international migration assumptions were sometimes perceived as unrealistic, due to the data sources and when compared with Census data. In most cases, LAs uses were for short-term, simple, frequent data and methodological advice, rather than variants whereas at regional level there was a greater perceived need for regional variant assumptions and long-term variants.

Questions from the audience included

- (NHS StHA Berkshire) providing measures of regional projections accuracy. ONS are starting work on providing confidence measures for the mid-year estimates and will consider the possibilities for providing something for projections in the future;
- (Peter Norris, LGA) population and short-term migrants definitions and what could be considered good evidence. ONS (Jonathan Swan) responded that the consultation covered both the migration assumptions but also wider needs for projections.
- (Felicity Manning, Leicestershire) A key question for LAs was how could local analysis of household populations and housing need and provision continue to be provided (with the demise of CHELMER).

### ***Consultation on Sub National Population Projections***

#### **Jonathan Swan (Office for National Statistics Centre for Demography)**

Jonathan introduced the upcoming SNPP consultation, with some brief background to the SNPPs, explanation of the two parts of consultation and the criteria for change regarding the initial migration assumptions. Jonathan then introduced the three syndicate sessions. This gave attendees the chance to discuss their choice of issues regarding the variant section of the consultation.

#### ***Syndicate Sessions***

A summary of views expressed by individuals in the syndicate sessions.

#### **Housing**

**Is there a demand for a housing-based variant?**

- It would be useful if ONS could take a commission-based approach, so that a region could commission a new projection when a major planning change comes along. This would be a new variant but based on the same principal projection (just change the housing numbers).
- Housing data up 2031 would be required.
- Lesley Potter (Milton Keynes) had doubts over the value of this variant. Her view was that local plans change too regularly, and producing this variant required being up to date with local information. It would add to the confusion if ONS produced this variant.
- The availability of POPGROUP enables councils to do their own scenario planning. But not all councils have the resources to run their own projections.
- The demise of the Chelmer model, and its household projections, will have a major impact. Does ONS have the expertise to replace it?
- A clear audit trail for any ONS variant will be required, detailing data sources and assumptions, but the variant would be useful. In particular the ability to produce a “series of housing variants from the same set of projections” would be highly valued.

#### **What data sources would be suitable?**

- Council Tax data was not considered to be a useful source. This was partly because it is often hard to get into a useful format, and partly because it does not give information on the latest housing plans. It would only provide “one further trend”.
- ONS would need to consider the “current assumptions” already in the model. The model must implicitly assume that house-building continues in each area at something like its current rate.
- The Regional Spatial Strategies were generally agreed to be the best source of data for ONS to use. However in some cases it might be desirable to use draft strategies that hadn’t been finally signed off, rather than using older versions.

#### **What expertise was available to help us produce this variant?**

- Detailed methodology notes on POPGROUP and the Chelmer model are available. These would be worth considering as both models are well known and are trusted. Notes on Chelmer can be found in the East of England regional plan.
- ONS should consult with the National Housing Planning & Advisory Unit (NHPAU) on this work.
- Several members of the group, including Ludi Simpson, expressed an interest in being involved in the process of developing this variant if it is taken forward. They were asked to email their details to the SNPP consultation mailbox: [SNPPconsult@ons.gov.uk](mailto:SNPPconsult@ons.gov.uk)

#### **Which variants should be produced?**

The session started by asking what uses there were for variants and some assessment of the importance of these uses. The uses that Greg Ball had outlined in his session

were reiterated so uses such as spatial planning, health planning, educational/skills and social-planning were all mentioned.

There was then some discussion as to the types of variants that people would wish for. The group agreed with the approach briefly outlined in the consultation document that a 'Low' and a 'High' variant should be produced. There were also calls for high and low migration variants with the assumptions for the other components kept the same as for the principal projection. This seemed to reflect the current substantial interest in migration. It was suggested that these were produced and that users were given the chance to react to these variants.

Two 'zero migration' variants were discussed. One that kept net migration at zero at every age (no migration) and another that assumed equal inflows and outflows but with separate age distributions so that net migration was zero in total but not necessarily at each individual age (balanced migration). These special case scenarios were considered to be interesting by comparison. Chris Shaw, ONS, confirmed that the zero migration variant produced for national projections was a 'no migration' scenario and that a 'balanced migration' variant assuming, say, that age distributions for immigrants and emigrants remained as they are today might produce significantly different results. He thought that this would be a useful additional variant to produce for the national population projections.

Lastly there was brief conversation as to whether ONS resource would be better directed into supporting LAs and other organisations produce their own projections. It was mentioned that Wales and GROS were considering producing input files for POPGROUP. There was favourable reaction to this idea although there was recognition that this could be large undertaking.

### **Modelling natural change and migration components, for variants**

It was suggested that greater use of administrative sources could be made in calculating the migration component, for example using Flag 4s<sup>1</sup> and National Insurance Numbers (NINOs). It was suggested that relationships between HESA data and GP registration could be explored and GP registration within new developments could be useful. Using propensity to move data was suggested. It was also suggested that lessons could be taken from the 'Leeds/Newcastle' model.

For fertility, it was suggested that pregnancy numbers and births to overseas mothers could be used to help project. And that health indicators from DH might give information on likely future mortality.

A number of the syndicate group supported the idea of running a local questionnaire, building on the work reported at the national level on the expert panel questionnaire. This local questionnaire could access local judgment on both level and variance of components that feed into projections.

### ***Feedback and Discussion Session***

A summary of points raised in the syndicate feedback and discussion session.

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<sup>1</sup> An indicator on NHS records that shows a patients address had previously been outside the country.

- Phil Rees (University of Leeds) commented that quantitative measures (e.g. number of houses) were not as good as quality of living indicators for assessing the attractiveness of an area.
- Malcolm Brown (Cornwall) explained that district councils have to collect sophisticated data for Strategic Housing Market Assessments, including a 25 year forecast for building on major sites. He also mentioned that Regional Spatial Strategies indicated household estimates up to 50% higher than previous estimates
- He thought there was a risk of circularity in that our projections for areas where there had been recent growth would show continuing population growth, and thus fuel demand for construction of further housing.
- Malcolm also suggested that councils could be asked to report on 'migrant attractiveness' of an area, together with an optimistic and pessimistic variant.
- Ludi Simpson (University of Manchester) stressed that subnational projections were not actually independent of policy. They implicitly assume that the impact of policy over the last 3 (or is it 5) years will continue.