

Internal migration estimates QMI

Contact:
migstatsunit@ons.gov.uk

Release date:
23 June 2016

Next release:
To be announced

Notice

12 November 2019


From mid-2016 Population Estimates and Internal Migration were combined in one statistical bulletin – latest release '[Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2018](#)'.

The '[Population estimates for the UK, mid-2018: methods guide](#)' and the '[Mid-year population estimates QMI](#)' have been updated to include information on internal migration quality and methodology.

Table of contents

1. [Methodology background](#)
2. [Executive summary](#)
3. [Output quality](#)
4. [About the output](#)
5. [How the output is created](#)
6. [Validation and quality assurance](#)
7. [Concepts and definitions](#)
8. [Other information](#)
9. [Sources for further information or advice](#)

1 . Methodology background

National Statistic	
Frequency	Annual
How compiled	Based on third party data
Geographic coverage	UK, England and Wales

2 . Executive summary

We publish annual estimates of internal migration, covering residential moves between local authorities and regions in England and Wales, as well as moves to or from the rest of the UK (Northern Ireland and Scotland). The estimates are a publication in their own right and are also a component of our population estimates and projections for local authority and other sub-national geographies.

As there is no single system to record population movements within the UK, we derive the internal migration estimates from a range of administrative data. We have used GP registration data since the mid-1970s. However, as young people in particular may not always register with a new GP after they have moved, our current methods also use data from the Higher Education Statistics Agency (HESA); this provides better estimates of moves at the most common student ages.

Our combination of GP registration data and HESA data is the best currently available source of information on internal migration. However, we recognise that the methods have limitations. The “How the output is created” section has more details of the current methods and limitations, and the “Coherence and comparability” section describes historic methods. Our [internal migration methodology](#) information has a more comprehensive overview.

This document contains the following sections:

- Output quality
- About the output
- How the output is created
- Validation and quality assurance
- Concepts and definitions
- Other information, relating to quality trade-offs and user needs
- Sources for further information or advice

3 . Output quality

This report provides a range of information that describes the quality of the data and details points that should be noted when using the output.

We have developed [Guidelines for measuring statistical quality](#); these are based upon the five European Statistical System (ESS) quality dimensions. This report addresses these quality dimensions and other important quality characteristics, which are:

- relevance
- timeliness and punctuality
- coherence and comparability
- accuracy
- output quality trade-offs
- assessment of user needs and perceptions
- accessibility and clarity

We have provided more information about these quality dimensions in the following sections.

4 . About the output

Relevance

(The degree to which statistical outputs meet users' needs.)

Internal migration estimates are used by central and local government for resource allocation and to inform policy decisions. Academia and special interest groups use the estimates as inputs to their own population models. Other users of the data include the media and the general public. Internal migration is an important component of population change and is used within Office for National Statistics (ONS) for the production of mid-year population estimates and population projections.

We have consulted regularly with users, including a consultation in May 2014, which informed our current portfolio of outputs. Our methodology and quality reports share information about the limitations of the data and we will be engaging with users as we develop further improvements to the methods over the next 2 years.

The “Other information” section has further information on our engagement with users.

Timeliness and punctuality

(Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the gap between planned and actual publication dates.)

We publish our annual internal migration estimates by local authority 12 months after the reference period has ended, coinciding with the publication of our mid-year population estimates.

The [GOV.UK release calendar](#) provides advance notice of release dates. In the unlikely event of a change to the pre-announced release schedule, we will draw public attention to the change and explain the reasons fully, as set out in the [Code of Practice for Official Statistics](#).

5 . How the output is created

We derive the estimates from administrative data including:

- annual extracts from the Patient Register (PR) – these provide information on all people registered with an NHS GP in England and Wales
- annual data from the PR on people who have moved, in either direction, between England and Wales and the rest of the UK (Northern Ireland and Scotland)
- annual Higher Education Statistics Agency (HESA) data – these provide information on students registered on higher education courses in the UK
- weekly data from the NHS Central Register (NHSCR) for England and Wales – these provide additional PR information, which is used to estimate PR moves that are not picked up from the annual PR extracts; however, it is an insufficient source in its own right as the data are only available for former health authorities rather than local authorities
- quarterly totals of the number of moves from England and Wales to Northern Ireland – these are derived from the Northern Irish medical card register and are supplied to us by the Northern Ireland Statistics and Research Agency (NISRA)
- quarterly data on moves from England and Wales to Scotland – these are derived from the Scottish NHSCR and are supplied to us by National Records of Scotland (NRS)

All of these datasets appear on our [statement of administrative sources](#).

The [methodology information](#) provides full detail, but our broad approach is to use PR data to identify people who have moved between local authorities since the previous mid-year. We combine these with HESA data to improve estimation of moves associated with higher education. Then we scale up the estimates using NHSCR data to take account of any PR moves not picked up by the annual extracts. We also scale the number of moves into Northern Ireland and Scotland to match the totals provided by NISRA and NRS.

We have agreed our disclosure control methods with our [statistical disclosure control methodology](#) team and published the estimates in accordance with the [Code of Practice for Official Statistics](#). We recognise, however, that the methods have limitations, such as:

- they exclude moves either into or out of prison or the armed forces
- they exclude moves by people who have not re-registered with a GP but are also not on the HESA dataset; this will, however, be offset to a greater or lesser extent by moves of people who moved in earlier years but have only now registered with a new GP
- the NHSCR scaling is applied in the same way across the whole population so does not take account of likely differences between sexes, age groups and geographic areas
- although the HESA adjustment is likely to be very accurate for start of study moves (because it is based on students' known locations), there is much less certainty around moves at the end of study
- the HESA adjustment is not applied to moves to and from Northern Ireland and Scotland

We publish the estimates by local authority, age and sex, to allow users to do their own detailed analyses. Our accompanying bulletin and interactive map make it easy to obtain a quick overview of patterns at both national and local levels.

6 . Validation and quality assurance

Coherence and comparability

(Coherence is the degree to which data derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain, for example, geographic level.)

We scale the number of moves across the borders to Northern Ireland and Scotland so they are consistent with what Northern Ireland Statistics and Research Agency (NISRA) and National Records of Scotland (NRS) use in their own publications (although flows by ages and sex are not necessarily consistent). NISRA and NRS use different methods to Office for National Statistics (ONS) to create their own internal migration estimates; the [internal migration methodology page](#) includes a paper discussing this.

Within England and Wales there have been changes in data sources and methods over time, as well as geographic changes. This means that there are some breaks in continuity, which will affect comparison of data over time. However, this does not mean that such comparisons are invalid, rather that the possible effect of these issues should be considered.

Accuracy

(The degree of closeness between an estimate and the true value.)

Despite the limitations discussed previously in this section, no other method currently available for producing internal migration estimates has such good coverage and quality.

We carry out detailed quality checks at all stages of the process, in particular checking the source data and final estimates to ensure that they are plausible compared with previous years. Once the final estimates are available we also do extensive quality checking on the publication tables and associated material to ensure accuracy and consistency.

Methodological changes over time

From April 1975 to March 1984, our migration estimates were based on a 10% systematic sample of NHS Central Register (NHSCR) data. In April 1984 we improved this to a 100% extract. However, the NHSCR data only allowed publication of estimates at health authority level. These NHSCR-based health authority estimates were published every quarter up to September 2011 but we stopped publishing them following a public consultation.

Since 1999 we have published annual estimates using Patient Register (PR) data and have done so at the more detailed local authority level. However, we still use NHSCR data to reduce the number of moves being missed.

For all PR-based estimates from the year ending mid-2002 onwards, we have also used Higher Education Statistics Agency (HESA) data and since the year ending June 2012, we have had an enhanced method that uses record-level HESA data rather than aggregate totals. Our initial introduction of HESA data increased the estimated number of moves affecting local authorities in England and Wales by around 5%, but the 2012 enhancements had little effect on the number of moves at national level. Both sets of improvements, however, will have had effects at local authority level and also in the more common student age groups.

Another change is that since the year ending June 2012, we have based our estimates on age at mid-year rather than age at date of move, making the internal migration publication consistent with the mid-year population estimates. This has had most effect on moves of people at the main student ages and also at age 0 as, on average, people aged 0 at mid-year will only have been alive (and hence able to move between local authorities) for 6 months.

Aside from the change to age at mid-year, in year ending June 2012 we improved the method for estimating moves of 0 year olds and modified it further in the year ending June 2013. Therefore particular care is needed with comparisons over time of moves of children aged 0.

Changes in geography

In 2009, local government restructuring in England led to a number of local authorities being merged, reducing the total number of local authorities in England and Wales from 376 to 348. This caused a small reduction in the total number of moves across local authority boundaries in England and Wales. However, the estimated reduction (based on a comparison for the year ending June 2012) is only around 35,000 per year, a little over 1% of the total.

Although most local authorities were unaffected by this restructuring, in 2009 we introduced new codes for all geographies in the UK. There are also occasional minor boundary changes to local authorities: these have negligible effects on internal migration statistics but do lead to the affected local authorities being given new codes. If changes occur in any year we will indicate this in the geographic lookup file accompanying the publication.

7 . Concepts and definitions

(Concepts and definitions describe the legislation governing the output and a description of the classifications used in the output.)

Our estimates use the standard Office for National Statistics (ONS) names and codes for geographic areas. They also use the concept of an individual being “usually resident” in a particular location, which is consistent with the standard UN definition used for the ONS mid-year population estimates.

8 . Other information

Output quality trade-offs

(Trade-offs are the extent to which different dimensions of quality are balanced against each other.)

The methods are very detailed and inevitably involve some quality trade-offs. For example, we could theoretically improve the NHS Central Register (NHSCR) scaling so it takes account of differences by age, sex and local authority. However, although we attempted this we did not achieve a solution that gave plausible results. Other theoretical enhancements have also not been implemented because of their complexity.

However, although the methods are the best currently available, we recognise their limitations and are currently developing new methods, which we intend to introduce in 2017.

Assessment of user needs and perceptions

(The processes for finding out about uses and users, and their views on the statistical products.)

We regularly communicate and meet with users and experts from a range of backgrounds, including central and local government, academia and business. This ensures users are kept informed of our work, their needs are discussed and priorities are identified. We have published the [minutes](#) of several of our regular meetings.

In addition, we carried out an internal migration mini-consultation with users in May 2014. This informed the content of the publication and led to our decision to retain a table of moves for each local authority broken down by sex and 5-year age group. Following a number of earlier emails from users, we had already decided to re-introduce a local authority flows matrix.

We held a consultation at the end of 2011 to assess customer requirements for inter-regional internal migration estimates. The outcome was that we stopped the publication of quarterly rolling year NHSCR-based inter-regional internal migration estimates. The [report of the consultation](#) is also available.

In 2010, a [user requirements report](#) was published. In addition we carried out a range of consultation activities as part of the [Migration Statistics Improvement Programme](#) (2008 to 2012) including cross-government working groups, reference panels and roadshows.

9 . Sources for further information or advice

Accessibility and clarity

(Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the release details, illustrations and accompanying advice.)

Our recommended format for accessible content is a combination of HTML web pages for narrative, charts and graphs, with data being provided in usable formats such as CSV and Excel. We also offer users the option to download the narrative in PDF format. In some instances other software may be used, or may be available on request. Available formats for content published on our website but not produced by us, or referenced on our website but stored elsewhere, may vary. If you would like further information, please contact us via email at migstatsunit@ons.gov.uk.

More information regarding conditions of access to data is available:

- [Terms and conditions for data on the ONS website](#)
- [Copyright and reuse of published information](#)
- [Accessibility](#)

In addition to this Quality and Methodology Information report, we provide quality information in each published dataset.

We have published the detailed data to allow you to produce your own tables and analysis. However, we can also produce customised tables on request, subject to the [ONS charging policy](#) and the complexity of the task.

We will provide advance notice of any forthcoming major changes in methodology on the ONS website, and will notify our main users directly.

Other useful links

More information on the topic of migration is available:

- [Mid-year population estimates](#)
- [Population projections](#)
- [Local area migration indicators suite](#)
- [Population quality and methodology information](#)