Office for National Statistics

International Migration Statistics First Time User Guide

Welcome to this guide for first time users of international migration statistics. The guide is designed as an introduction to the key concepts which underpin migration statistics. There are a number of sources of data on migration, and advice is provided on where to find these, as well as links to publications which can offer further information.

Who is an international migrant?

There are a number of ways to define an international migrant. We publish statistics on both Long-Term International Migration (LTIM) to and from the UK and Short-Term International Migration (STIM) to and from England and Wales.

A long-term international migrant is "a person who moves from their country of usual residence for a period of at least 12 months" (UN definition).

A short-term international migrant is "a person who moves to a country other than that of his or her usual residence for a period of at least 3 months but less than a year except in cases where the movement to that country is for purposes of recreation, holiday, visits to friends and relatives, business, medical treatment or religious pilgrimage" (UN definition).

The UN definition of a short-term international migrant therefore focuses on those migrating for work or study. We also publish short-term international migration statistics for those migrating for 3 to 12 months for all reasons for migration, and for 1 to 12 months for all reasons for migration.

How has international migration changed over time?

Levels of both immigration and emigration are higher now than they were 50 years ago. In the 1960s and 1970s approximately 200,000 people immigrated to the UK each year and around 250,000 people emigrated annually. In the 1980s immigration began to exceed emigration on an annual basis. Since the late 1990s, the numbers of immigrants and emigrants has increased further, notably in 2004 when the EU expanded to include 10 new countries.

The International Migration Timeline shows Long-Term International Migration estimates from 1964 to 2013. It allows the user to select different broad citizenship groups and to see the migration figures for particular years in the context of GDP, unemployment and key events or developments that occurred at the time. The timeline also shows the top 3 countries of origin and destination for migrants to and from the UK by broad citizenship group in each year.
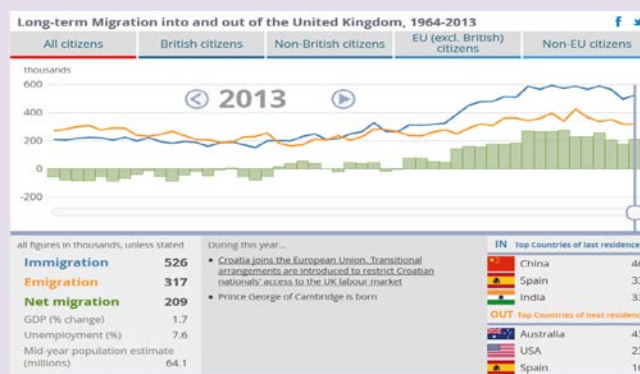
How is Long-Term International Migration (LTIM) measured?

Estimates of LTIM are about 90 per cent based on data from the International Passenger Survey (IPS). This sample survey is conducted at all the main entry and exit points from the UK including airports, sea ports and at the Channel Tunnel.

To collect the data, a specific entry or exit point is sampled on a particular day. A strict method of counting is used which ensures each person has the same opportunity of inclusion in the survey. Passengers are systematically selected for interview at fixed intervals (for example, every 1 in 20th person) from a random start.

Between 700,000 and 800,000 people are interviewed on the IPS each year. Of those interviewed, approximately 4,000 to 5,000 people each year are identified as long-term migrants. These are non-UK residents who state that they intend to stay in the UK for at least 12 months (immigrants) or UK residents who state that they intend to reside outside of the UK for at least 12 months (emigrants). The remainder are identified as either short-term migrants, visitors to the UK, or UK residents returning after a short stay overseas.

To estimate LTIM, the IPS data are supplemented by:

- Home Office data, which are used to calculate an adjustment for asylum seekers and their dependants, as well as for non-asylum enforced removals
- an adjustment to add in visitor switchers and remove migrant switchers. These are people who change their intentions
- Northern Ireland Statistics and Research Agency (NISRA) data on migration to and from Northern Ireland, based on GP registrations

Further information is available on Long-Term International Migration estimates methodology.
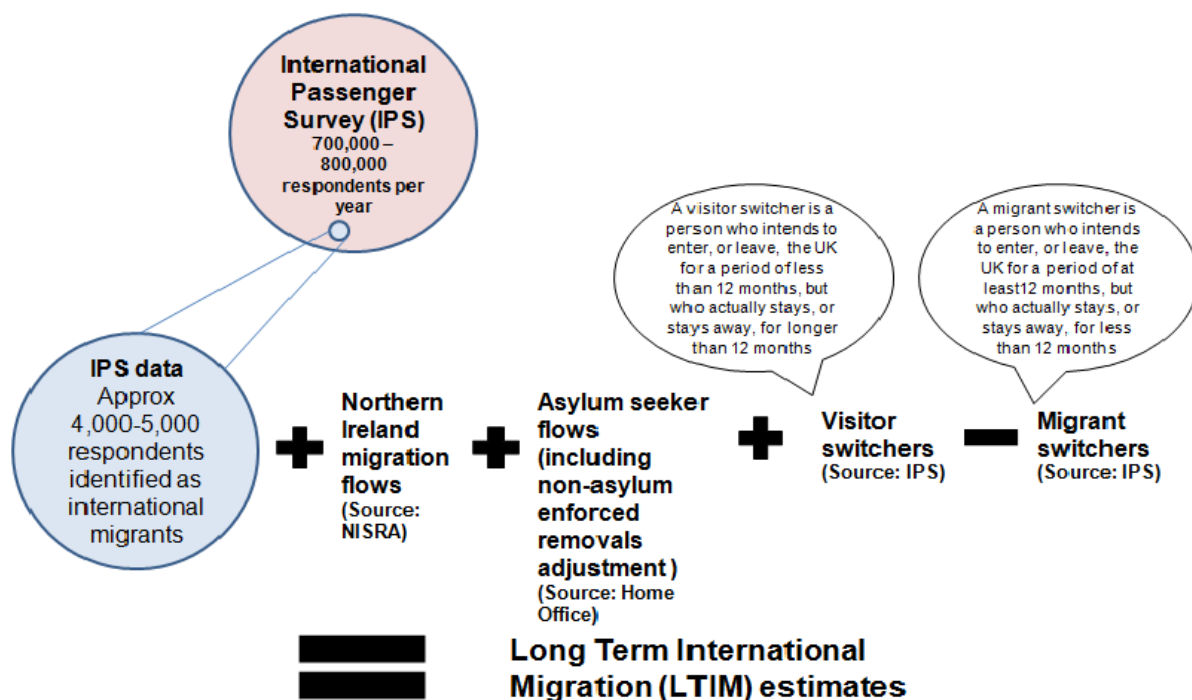
How is Short-Term International Migration (STIM) measured?

Estimates of STIM are produced for England and Wales and for local authorities.

National estimates of STIM are produced directly from data from the International Passenger Survey (IPS). Estimates of short-term migration are available as flows (the total number of moves made over a set period) and stocks (the number of short-term international migrants present at a given point in time).

Flow estimates refer to the number of migrations commenced (migrant moves) as opposed to the number of people who commence migrations (migrants). This distinction is important when estimating STIM annually because a person could migrate more than once in the same period. For example, a single person migrating twice in a year for 3 months on each occasion would appear in the short-term flow estimates as 2 (migrant moves), not as 1 (migrant).

Stock estimates are calculated by summing the number of nights each short-term migration lasts and dividing by 365 to create a long-term migrant equivalent. Where a short-term migration spans 2 time periods, the stay is split between the 2 periods.

It is not possible to calculate net migration for short-term migrants, as the definition of a migrant is different for the inflow (who must be a foreign resident moving to the England and Wales) and the outflow (who must be a resident of England and Wales moving overseas).

Short-term migrants are interviewed on the IPS at the end of their stay. This means that the estimates are based on actual behaviour, in contrast to LTIM estimates which are based on interviews conducted when the migrant arrives and are therefore based on the intended behaviour of migrants.

Asylum seekers are not included in STIM estimates as no suitable adjustments can currently be made. The adjustments used in LTIM are considered to be too complex to be applied to STIM, given the small numbers of migrants affected. Similarly, no adjustment is made to STIM to account for any short-term migration from Northern Ireland to England and Wales, which may not be captured by the IPS. Again this number is estimated to be low.

Local authority estimates for STIM are produced by distributing IPS estimates of short-term migrants who arrive in England and Wales for 3 to 12 months for work and study (which is the UN definition) to local authorities using administrative data.

Further information is available on Short-Term International Migration estimates methodology. This includes separate methodology documents for the national estimates and for the local authority estimates, as well as frequently asked questions.

What is the difference between a flow and a stock?

Flows – the number of people migrating from one place to another over a given period of time. LTIM and IPS estimates of long-term international migration are examples of migration flows.

Stocks – the number of people resident in the UK at a given point in time. Population by Country of Birth and Nationality estimates are an example of stocks.

How reliable are the migration estimates?

As previously explained, LTIM estimates are based primarily on data collected by the IPS. Sample surveys like the IPS are used when we would like to know something about a population of individuals but asking all of them is impractical. For example, when we wish to know how many people are migrating into and out of the UK each year, one way to find this out would be to ask everyone crossing the UK border about their migration intentions. However, this would be a very expensive and impractical approach. Instead a more cost effective approach is to use a sample survey.

As with all sample surveys, the estimates produced are based on only 1 of a number of possible samples of passengers that could have been drawn at a given point in time. Each of these possible samples would produce an estimated number of migrants which may be different to the true value that would have been obtained if everyone passing through were interviewed.

The published estimate for migration is the best available and most likely figure, based on the data collected of international migration flows during a particular time period.

By comparing the estimates from the IPS to other data sources, we can be confident that the IPS provides the best available estimates of international migration at the national level. For example, there was only a small (0.8%) difference between the 2001 to 2011 rolled-forward mid-year population estimates and the 2011 Census. This difference can be attributed to factors such as the accuracy of the 2001 population base in addition to migration, but the similar patterns of migration seen across other data sources (such as visas issued to citizens of countries outside the EU) provide reassurance that the IPS-based estimates at the national level provide reliable figures of international migration to and from the UK.

Since the IPS is based on a sample survey, and not an exact count of passengers, it is good statistical practice to publish confidence intervals around the estimates. These provide a measure of the reliability of the estimates and can be used to identify statistically significant changes.

What is a confidence interval?

The different possible samples of passengers that could have been selected on the IPS can be used to produce a sampling distribution for the figure we are trying to estimate. For example, if we are estimating immigration within a particular year, one sample may produce an estimate of 500,000, another may have resulted in an estimate of 515,000 and another may have produced an estimate of 490,000. If we could take a lot of samples like this, and plot the estimates from each sample, we would produce a chart of the sampling distribution of our estimate. Assuming that the estimation method we use to produce the estimate for each sample is unbiased, the shape of the plot would follow the widely recognised Normal distribution, where the most likely estimates of the true value are centred towards the middle and the least likely estimates are at the 'tail ends'.
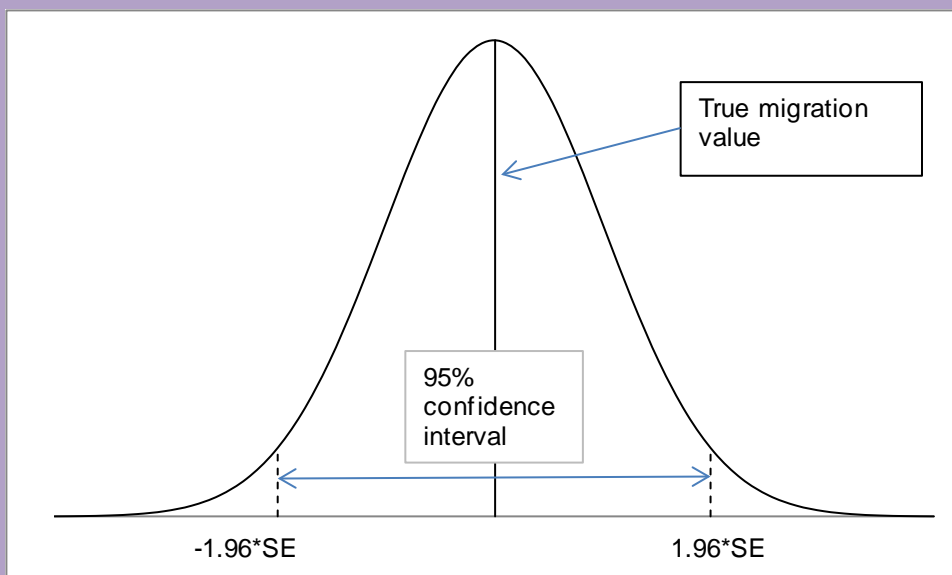
In practice, in order to estimate the true value for a specific population of, say, the number of immigrants, we take 1 sample and produce a single estimate. We assume that the sampling distribution of our estimate would approximately follow a normal distribution, centred on the true value, and we can use a statistical formula to calculate the standard error (SE) around the estimate. This is a measure of the accuracy of the estimate.

As illustrated on the diagram above, 95% of the estimates would lie within 1.96 multiplied by the true standard deviation of the sampling distribution. This also works the other way round, so we can say that for 95% of random samples taken, our estimate will be no more than 1.96 multiplied by the standard error of that estimate away from the true value that we are trying to estimate. Using this knowledge, we can calculate a confidence interval around our estimate.

Confidence intervals are indicators of the extent to which the estimate may differ from the true value. The larger the confidence interval, the less precise is the estimate. The central value within the confidence interval is the best estimate of the true value. The confidence interval around the estimate captures the uncertainty of the estimate, and gives an interval within which we can say that there is a high probability that the true value lies.

At the 95% confidence level, which is a widely accepted level, we would expect the confidence interval to contain the true value 95 times out of 100. Equivalently, we can say that there would be a 1 in 20 chance that the true value would lie outside of the range of the 95% confidence interval.

**What is a statistically significant change?**

Changes in IPS estimates from one period to the next may occur simply by chance. In other words, the change may result from which individuals were selected to answer the survey, and may not represent any real-world change in migration. Statistical tests can be used to determine whether any increases or decreases that we see in the estimates from the IPS are as result of chance, or whether they are likely to represent a real change in migration patterns. These tests examine the difference between 2 estimates and calculate a confidence interval of the difference. If this interval contains zero then the difference is not statistically significant. If the tests show that the changes are unlikely to have occurred through chance alone, and are likely to reflect a real change, then the change is described as being statistically significant. The usual standard is to carry out these tests at the 5% level of statistical significance. This means that we would expect only 1 out of 20 statistically significant differences to have occurred purely by chance.

What about the reliability of LTIM estimates?

LTIM estimates are calculated from IPS estimates with additional data to account for flows of asylum seekers (including non-asylum enforced removals), flows from Northern Ireland and visitor and migrant switchers. LTIM estimates are shown with the confidence intervals for the IPS component of the estimate in order to give users an indication of the accuracy of the estimate. The uncertainty associated with the IPS component of the estimate is used to calculate statistically significant changes in the LTIM estimates. However, when interpreting these confidence intervals and statistically significant changes, users should be aware that there is no method for quantifying the error associated with the non-survey components of LTIM, which are unlikely to be random.

Where can I access the latest figures on international migration?

We have launched the [Migration topic page](#) on its website. This is a webpage which provides links to the latest migration data, as well as bulletins and short stories on migration.
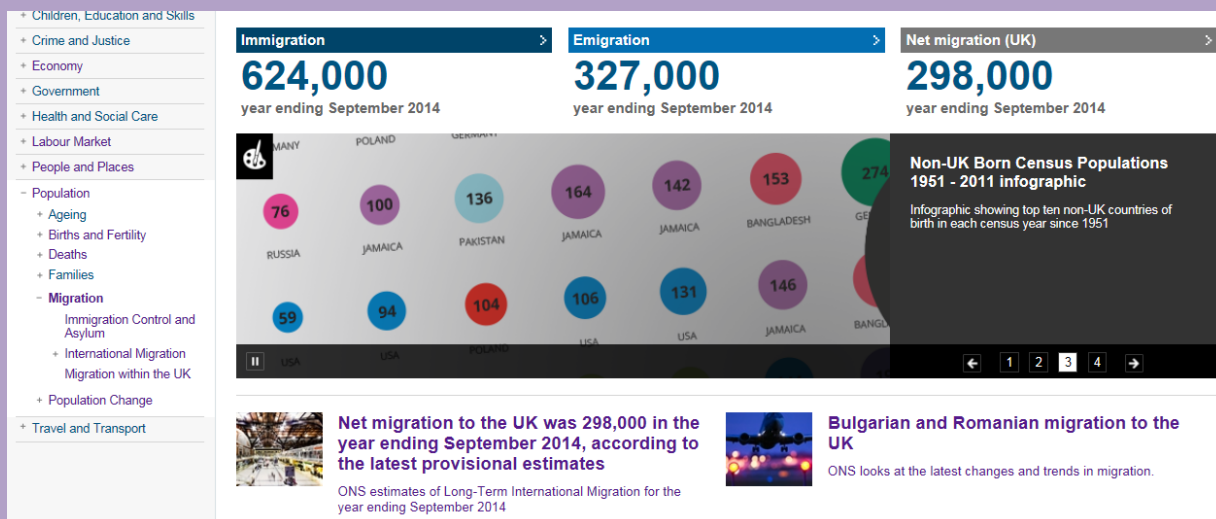
Note: This image is an example and does not represent the most recent figures.

From here you will find links to the [Migration Statistics Quarterly Report (MSQR)](#) which is published in February, May, August and November each year. The MSQR brings together all of the latest data on international migration published by us, as well as data on visa applications from the Home Office and National Insurance number (NINo) allocations to overseas nationals from the Department for Work and Pensions (DWP). It includes provisional LTIM estimates published each quarter. Final LTIM estimates are published annually in November.

The MSQR is supported by reference tables which show LTIM estimates by citizenship and by main reason for migration, as well as cross-tabulated data for citizenship by main reason for migration from IPS data only and IPS outflows by previous reason for migration. More extensive [reference tables](#) are published in November of each year providing final calendar year LTIM and IPS estimates at national and (in some cases) regional level by variables including citizenship, country of birth, country of last or next residence, reason for migration, usual occupation prior to migration, area of destination or origin within the UK, intended length of stay, sex and marital status.

[Short-Term International Migration](#) estimates are published annually in May at national and local authority level.

[Local Area Migration Indicators](#) contain several data sources to bring together indicators of migration at the local level, published annually in August.

[Population by Country of Birth and Nationality](#) provides information on the number of people resident in the UK by country of birth and nationality, published annually in August, based on Annual Population Survey (APS) data.

The [2011 Census](#) provides information on the population of England and Wales on Census Day, which was 27 March 2011. A number of articles relevant to migration have been published including [Immigration Patterns of Non-UK Born Populations](#), [Country of Birth and Nationality Analysis](#), [Non-UK Born Short-Term Residents](#) and [International Migrants in England and Wales.](#)

Where else can I find out about international migration?

In addition to ONS, a number of government departments publish data relating to international migration. In particular:

Home Office migration statistics provide a range of Home Office administrative data, including visas, passenger admissions, asylum applications, removals and voluntary departures and grants of settlement and citizenship.

Department for Work and Pensions provide statistics on National Insurance numbers (NINos) allocated to overseas nationals entering the UK.

National Records for Scotland migration statistics provide estimates of migration within Scotland, between Scotland and the rest of the UK and between Scotland and overseas.

Northern Ireland Statistics and Research Agency migration statistics provide estimates of long-term international migration to and from Northern Ireland, including by local government district.

Contact us

For more information on international migration estimates, please email migstatsunit@ons.gsi.gov.uk.

Please note that these contact details may also be used for enquiries relating to internal migration.