

Understanding international migration statistics

This article brings together important information to inform users and explain any misunderstandings around our migration statistics.

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1 . Overview

Collecting and analysing data to produce migration statistics is a complicated process. It is easy to misunderstand migration data because of the range of information available in this area. Here we aim to bring information together to support our users' understanding of the main concepts behind the international migration statistics produced by the Office for National Statistics (ONS).

2 . Migration data produced by the ONS

The Office for National Statistics (ONS) produces estimates for long-term net migration (see section 4). Net migration is the difference between the number of people arriving (immigration) and leaving (emigration), and therefore, the population change because of migration.

We currently publish estimates of long-term international migration twice per year, at the end of May and at the end of November, at the same time as the Home Office release their [immigration statistics](#) and the Department for Work and Pensions release their data on the [number of National Insurance numbers \(NINOs\) allocated to adult overseas nationals](#).

We also publish articles throughout the year to provide further insight into international migration and to provide more context to our estimates in response to the needs of our users.

We have released a series of articles using data from Census 2021, which provide more information about [the size and characteristics of the international migrant population](#) (the number of people who live and are usually resident in England and Wales).

3 . Status of international migration estimates

Before mid-2019, long-term international migration estimates were released quarterly and were accredited as a [National Statistic](#) in line with the Office for Statistics Regulation (OSR) guidance. As we moved to transform the way we produced migration statistics, we reclassified our statistics to [Experimental Statistics](#) in 2019. We will continue to research how to improve the way that we produce estimates and are moving towards having more stable methods and data sources. We have increasing confidence in admin-based international migration estimates and our methodology is beginning to stabilise. We have ambitions for UK international migration statistics to be Accredited Official Statistics, which will include, at some point, removing the "official statistics in development" label. We will continue to work with OSR on an appropriate timeline for this. The official statistics in development label continues to help our users to understand the stage of research.

4 . Long-term international migration

We define a long-term international migrant (applying the [United Nations definition \(PDF, 5.0MB\)](#)) as someone who changes their country of usual residence for a period of 12 months or more, so that the country of destination effectively becomes the country of usual residence.

5 . Net migration

Net migration is the difference between the number of people coming to live in the UK (immigration) and the number of people leaving to live elsewhere (emigration), for 12 months or more. When more people are arriving in the UK than leaving, net migration is above zero and so adds to the population. Our long-term international migration statistics include estimates of immigration, emigration and net migration.

6 . Why we cannot just count people in or out of the country

It is often thought that it is possible to measure international migration by counting the number of people in and out as they cross the border. However, measuring international migration is a complex process. To provide estimates "on a timely basis and at intervals that meet the needs of the users as far as practicable" (as outlined in the UK Statistical System Code of Practice), we need to make assumptions about the likelihood of those who arrive in the country staying for 12 months or more. This could not be done by simply counting people in and out. For more information see our [provisional long-term international migration estimates: technical user guide](#).

Even using passport stamps as people cross the border is an unreliable method as some people hold multiple passports, and use different passports for inbound and outbound journeys. The UK and Ireland also belong to a free travel zone called the Common Travel Area; people can travel freely between the two countries and movements across the land border between Northern Ireland and the Republic of Ireland are not tracked.

Some countries have systems in place where everyone registers on immigration, and de-registers by law on emigration, but there is no system in place that counts every arrival and departure in the UK in this way.

Our [methods are based on administrative \(admin\) data](#). These are data collected primarily for operational purposes, but we can use them to estimate the number of people entering and leaving the UK; this is why we refer to statistics as "estimates" rather than "counts" or "measures".

The data used include:

- borders and immigration data from the Home Office
- benefits and earnings data from the Department for Work and Pensions (Registration and interaction population database (RAPID))
- university data from the education sector (Higher Education Statistics Agency (HESA))
- asylum and humanitarian data from the Home Office

We continue to use survey data from the International Passenger Survey (IPS) for British nationals. More information on the data that go into our estimates can be found in our [provisional long-term international migration estimates: technical user guide](#).

7 . Publishing provisional estimates

In order to provide up-to-date data, we initially produce provisional estimates, and revise these over time as more data become available. Revisions are a standard part of producing timely estimates.

These provisional estimates provide an early indication of migration until we have seen whether people really did stay in the UK or leave the UK for a full 12 months. Initial adjustments are made to the data based on averages from previous years.

For example (not real data):

- we see 100 people arriving holding a long-term study visa
- previous years' data show that 10% of those arriving on a long-term study visa do not stay for 12 months or more
- we would initially include 90 of these people in the immigration element of our long-term international migration estimates
- once we have the full dataset from this period, we may see that 15 of these people left the country before 12 months and we would revise our estimate to 85

An estimate is necessarily provisional until we have a full 12-month dataset where we can see in the data how many people stayed or left.

Our early provisional estimate will be revised once we have six months of partial data and again when we can observe a full 12 months of activity for people. As set out in our [revisions policy](#), estimates may also be revised as methods are refined, or we obtain more complete data about the period of interest. Updating our estimates does not necessarily signal that there has been an error and we will be transparent about any revision that occurs because of an error, in line with [The Code of Practice for Statistics \(PDF, 577KB\)](#) (paragraph Q3.4).

8 . Flows and stocks

Long-term international migration flows and stocks estimate two different things. We can use different data sources to estimate migration flows and stocks.

Flows estimate the number of people moving into and out of the UK. Our long-term international migration estimates provide data on migration flows for a given time-period.

Stocks estimate the number of non-UK-born or non-British citizens resident in the UK at a given point in time. The Census 2021 data provide an [estimate of non-UK-born or non-British citizens resident in England and Wales](#) at the point of data collection. The stock of the migrant population is built up over a period from long-term migration flows. When fully developed, the [dynamic population model \(DPM\), as explained in our article](#), will aim to estimate the population (stock) and, in time, will produce fully coherent estimates of population counts and changes because of births, deaths and long-term migration (flow).

9 . Comparing country of birth and nationality

Nationality refers to country or countries of legal residence and might be collected via self-reporting, or is based on providing information from an individual's passport. Nationality is used for estimating long-term international migration. Country of birth refers to the country in which a person is born.

We have published [guidance on using country of birth, nationality and passports held data](#).

10 . Previous methods of estimating long-term international migration – International Passenger Survey

In August 2020, we announced [we would not return to producing official migration statistics for non-UK nationals from the International Passenger Survey \(IPS\)](#) and instead transform our [long-term international migration methods](#) using admin data to estimate long-term international migration. For decades, the IPS was the best data source that the Office for National Statistics (ONS) could use to provide estimates of both long-term immigration and emigration, and therefore net migration estimates for the UK.

However, this method is based on a respondent's intended plans to move to or from the UK and therefore has certain limitations because people can change their plans and so their stated intentions would not reflect their actual behaviour. This limitation of the IPS is more prominent during periods of high uncertainty, such as during the coronavirus (COVID-19) pandemic and following the EU referendum.

As a result of the limitations of the IPS, and the fact the IPS was paused during 2020, the ONS accelerated its approach to changing the way migration statistics are produced from surveys to admin-based migration estimates (ABMEs) to measure migration.

Our [Estimating International Migration: 2012 to 2021](#) further shows the benefits of developing our methods using admin data to deliver improved estimates of migration.

11 . New methods of estimating long-term international migration – admin-based migration estimates (ABMEs)

We have developed our methods in-line with our move towards producing estimates based on actual observed activity in admin data. Admin data refers to any collection of data that has been primarily collated for operational purposes, for example, visa information and travel records.

Admin-based migration estimates (ABMEs) bring data together and estimate how many people arriving and departing in a given period are long-term international migrants. Our ABMEs are used to estimate EU and non-EU nationals migrating to and from the UK. For British nationals, we continue to use the International Passenger Survey (IPS), [supported by findings from the 2021 Census](#) while we explore the best admin sources to estimate this group. For more information on our methods and transformation, please see our [Improving migration statistics using administrative data article](#).

As described in Section 7: Publishing provisional estimates, provisional estimates are updated once we have 12 months of data. For example, an improvement to our methods in 2030 may mean that estimates published in 2028 will be revised. This could mean that estimates of net migration increase or decrease, depending on the method being improved. More information on what data went into the last estimates can be found in our [Methods to produce provisional long-term international migration estimates methodology](#).

12 . Differences between number of visas granted, National Insurance number allocations and long-term international migration estimates

There is a difference between what each of the data sources, such as Home Office visa data, data on the number of National Insurance numbers (NINOs) allocated, and our published migration data, aim to estimate. We use Home Office visa and travel data to estimate the number of non-EU arrivals but our estimates do not estimate visas issued, but instead consider people classed as long-term international migrants. These are people who changed their usual country of residence for 12 months or more.

Some people who are granted a visa choose not to come to the UK and some who do come will not stay in the UK for 12 months, so the number of visas issued will be higher than long-term immigration estimates. The net migration figures that we publish also consider the number of people that are leaving the UK for 12 months, which Home Office visa data cannot.

Overseas nationals can apply for a NINO as soon as they arrive in the UK, or at any point during their stay so NINO registrations do not necessarily mean a recent move to the UK. For example, a student might migrate to the UK, complete their studies, and only then apply for a NINO if they choose to stay and work through the graduate scheme or by transitioning to a work visa.

13 . Common reasons for immigration to the UK

We estimate that:

- "work" is the most common reason for immigration for non-EU nationals
- "work" is the most common reason for immigration for EU nationals
- "other" (not work, family or study) is the most common reason for immigration for British nationals

For non-EU nationals, we can infer their reason for migration based on the type of visa on which they enter the UK. However, for EU migration and returning British nationals, we do not have this information. We plan to use Home Office data for EU nationals applying for visas (excluding EU Settlement Scheme visas) in the future, so these will be comparable with non-EU nationals. More details are available in our [International migration research progress update article](#).

Therefore, to produce statistics on the reason for EU and British migration, we still rely on International Passenger Survey (IPS) data. The data should not be compared with non-EU data. For EU migration, we use the IPS data to estimate the proportion of immigration for each reason and apply this to the admin data-based estimates. For more information, read our [International migration research, progress update](#).

14 . Why we include students in the net migration estimates and can they be removed

Long-term students contribute to population change and have an impact on housing and public services, regardless of whether they leave at the end of their studies.

In line with the [current UN definition of a long-term migrant \(PDF, 5.0MB\)](#), international students who are studying in the UK for a period of 12 months or more are included in our estimates of long-term immigration.

Students are often thought of as a temporary population who arrive in the UK to study and leave on completion of their studies. However, a [Home Office report into graduate journeys](#) found that over half (56%) of students who came to the end of their studies in 2023 had further leave to remain in the UK.

We now produce [net migration estimates for international students and student dependants](#). Net migration of non-EU nationals initially arriving on study-related visas is estimated as 247,000 for the YE December 2023. This method is a net migration estimate for long-term non-EU students that uses visa type at first arrival to the UK. This method is consistent with how we estimate total net migration in our [Long-term international migration, provisional: year ending December 2023 bulletin](#), which was published today for the year ending (YE) December 2023.

Individuals counted in this method could have transitioned to a different visa type during their time in the UK, which would not be visible because of the use of visa data at first arrival.

Therefore, an alternative method follows a group of long-term non-EU migrants who initially arrived in the UK on a study or a study dependant visa. Their status is observed over time (on the reference date of interest in the following years), looking at whether they have emigrated (categorised as “emigrated”), remained on their original visa (categorised as “not emigrated”), or transitioned to a different visa type (categorised as “transitioned”).

The cohort method works by determining for each year of arrival, the reference year, and continuous visa histories for each cohort member. This is achieved by identifying long-term international migrants with a study-related visa (study and study dependants) as their reason for migration. In the second stage, we calculate whether an individual has emigrated, transitioned, or has not emigrated and the visa type they held at the end of the reference period.

15 . Comparing long-term international migration estimates with Census 2021 data

Every 10 years, the census provides the opportunity to measure the number of international migrants in the country at that point in time. The long-term international migration (LTIM) estimates are produced from admin data sources in addition to other adjustments.

We continually quality-assure our estimates against many data sources, including the 2021 Census. We are confident in these estimates, but it is important to acknowledge that our LTIM estimates relate to migration flow, whereas the census data provide a glimpse into the stock at the point in which the census was taken.

In our [Estimating UK International Migration: 2012 to 2021 article](#), we have used new methods and admin sources to revise EU, non-EU and British long-term international migration to and from the UK. This is in line with evidence provided by Census 2021 and other sources. These revised estimates for the full data time series date back to 2012 and are also now as consistent as possible with our latest methods.

We are confident that these new methods provide us with a more accurate picture of migration patterns over the last decade than it was possible to produce at the time using the intentions-based International Passenger Survey (IPS).

16 . Impact of Brexit and COVID-19 on international migration

Our best estimates for international migration (and other population statistics) during the period of exiting the EU, and the coronavirus (COVID-19) pandemic have been updated, as shown in our [Estimating UK international migration: 2012 to 2021 article](#). However, it is difficult to separate the individual impact of each of these.

For context, while the UK left the EU on 31 January 2020, the country continued to be in a "transition period" until the end of 2020. During this time, existing arrangements applied, meaning that people could migrate freely between the UK and the EU without needing a visa. It will also be difficult to disentangle the effects of Brexit and the pandemic on migration patterns, given that both Brexit and impact of pandemic restrictions occurred over the same time period.

17 . Asylum seekers and refugees

As part of our iterative transformation process, we are continuing to develop our methods to include all migrant groups. From [our Long-term international migration estimates for year ending December 2022 \(released in May 2023\)](#), we have included applications of asylum for the first time in our admin data-based estimates of immigration and revised these back to previous estimates. Someone is included in our estimates of asylum from the point they have applied and under our current system, they would all be expected to remain more than 12 months, and so would be considered a long-term migrant. We use the available return data supplied by the Home Office to remove known emigrants.

From May 2023, we also included resettlement scheme arrivals in our immigration estimates. There are no returns for resettled refugees on the basis that all resettled people are long-term migrants based on declared intent to stay in-country.

Those who arrived on small boats and proceeded to claim asylum are included in our estimates following their claim. We did not separately identify small boat arrivals in our estimates, but analysis published by the Home Office showed that, for the year ending March 2023, [90% of small boat arrivals claimed asylum or were recorded as a dependant on an asylum application](#).

18 . Comparing the British migrant population with other countries

The way that estimates are produced for international migration differs from country to country. Therefore it is difficult to compare directly. The Statistical office of the European Union, [Eurostat](#), provides breakdowns of immigration, emigration and acquisition, and loss of citizenship for each EU country (including the UK up until 2021).

19 . British migrants living abroad

We are currently working to identify the best possible data source for estimating migration of British nationals. Because of the complexity associated with identifying British national migrants in the admin data sources that we use to estimate net migration, we cannot currently use these data. As a result of this, the International Passenger Survey (IPS) is currently our source of information in measuring these migrants and this helps to form our net migration estimates. However, we do not produce separate emigration estimates of British nationals living abroad. Our last release looking at [British nationals living in the EU](#) was released in April 2018.

20 . Nationality of long-term international migrants

We currently publish nationality breakdown for non-EU nationalities, which make up 85% of immigration to the UK. In the year ending (YE) December 2023, the most common nationalities of long-term international migrants were those with Indian, Nigerian and Chinese nationalities. The remaining 15% is made up of 10% EU long-term international migrants and 5% British Nationals.

As our transformation work continues, our ambition is to give further breakdowns of international migration for users, including by geographies.

The Home Office also publishes [data on visas issued, broken down by nationality](#). These are not the same as estimates of long-term international migration, for the reasons described in Section 12.

21 . Further information on international migration

It is possible to request more detailed information and data on international migration by emailing pop.info@ons.gov.uk.

22 . Related links

[Improving international migration statistics using administrative data](#)

Article | Released 23 November 2023

Describes how we estimate international migration and the data we use. Includes an explanation of our research, the improvements we have made and future developments.

[Estimating UK international migration: 2012 to 2021](#)

Article | Released 23 November 2023

The coherence of migration statistics is an important part of the work the ONS are doing to transform the way we produce population and migration statistics for our users. This article explains how we arrived at the revised data back series to be used for rebasing of mid-year population estimates, sets out how migration has changed over the decade, and assures that new methods are robust.

[Rebasing of mid-year population estimates following Census 2021 - England and Wales](#)

Article | Released 23 November 2023

The rebased mid-year estimates for the period 2012 to 2020 to align with Census 2021 results.

[International migration research, progress update: May 2024](#)

Article | Released 23 May 2024

This article provides an update on research to develop admin-based migration estimates (ABMEs) and expand the range and granularity of our statistics.

[Provisional long-term international migration estimates: technical user guide](#)

Methodology | Released 3 May 2024

An explanation of the methods used to produce the latest provisional experimental statistics on migration flows into and out of the UK.

23 . Cite this methodology

Office for National Statistics (ONS), released 23 May 2024, ONS website, methodology, [Understanding international migration statistics](#)