

Methods to produce provisional long-term international migration estimates

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

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1 . Purpose of this methodology

This methodology article summarises how we produced our provisional estimates to provide an early indication of migration, as published in our [Long-term international migration, provisional bulletins](#).

The methods detailed in this article are part of an ongoing programme of work to transform population and migration statistics. This work was accelerated in response to the coronavirus (COVID-19) pandemic, and we continue to build on these developments. More information can be found in our [Improving international migration statistics using administrative data article](#).

2 . Improving how we estimate international migration

The International Passenger Survey (IPS), which underpinned our estimates of migration until 2020, had been stretched beyond its original purpose. More information can be found in our [Improving international migration statistics using administrative data article](#). To improve migration statistics and produce more regular and timelier statistics without compromising on accuracy, we now focus on producing estimates using administrative data supported by statistical modelling.

With our greater use of administrative data, we will continue to publish timely estimates with a more consistent level of quality. The first, most timely, estimates will be provisional estimates, giving an early indication of the population or migration based on early data and assumptions about people's migration status based on past behaviour. When more data relating to the reference period become available, these provisional estimates will be updated with new estimates, with reduced statistical uncertainty.

3 . Why we cannot count people in and out at the border

A common misconception is that it is easy to estimate international migration by counting people in and out as they cross the border. There are many reasons why it is difficult to count migrants by monitoring cross-border travel data using passport scans at airports. More information can be found in our [Understanding international migration statistics methodology](#).

4 . The method for our latest estimates

Our provisional estimates rely more on observed activity in administrative data, as explained in our [International migration: developing our approach for producing admin-based migration estimates article](#).

Our long-term international migration estimates use different data sources and methods for each nationality grouping. We currently publish estimates on immigration, emigration and net migration for:

- EU+ nationals (all EU countries and Norway, Iceland, Liechtenstein, and Switzerland)
- non-EU+ nationals
- British nationals

We also publish further nationality breakdowns for the immigration and emigration of EU+ and non-EU+ nationals.

We continue to use the United Nations' (UN) definition of a long-term migrant: where people change the country they live in for a period of 12 months or more. A summary of the main concepts behind our estimates can be found in our [Understanding international migration statistics methodology](#).

Non-EU+ nationals

Non-EU+ migration refers to the migration of people who do not hold British or EU+ nationality, where EU+ refers to all EU countries and Norway, Iceland, Liechtenstein, and Switzerland. We use Home Office Borders and Immigration (HOBI) data, which combines visa and travel information, to link an individual's travel movements into and out of the country. For more information, please see the [Home Office statistics on exit checks: user guide](#).

Our first step is to identify which travellers meet the definition of a long-term migrant, filtering out those on visit visas. Those on visit visas are only eligible to stay in the UK for up to six months per visit, so are not permitted to be in the UK for 12 months or more.

To estimate migration, we look for travel across an extended visa period. Visa periods are constructed by linking together any consecutive or concurrent visas held. The most recent visa period is extended with visas not yet travelled on. If there is a gap of more than seven days between visas, then a new visa period is started.

If someone has long-term travel outside the UK and has left for more than 12 months during a visa period, they will be counted as an emigrant, and a new visa period is started.

For immigration, we look at the first arrival in a visa period and then look at any previous visa period to determine if this is a new long-term immigrant, or one who has previously been in the country. If no presence is identified in the country during the 12 months preceding first arrival on a given visa, or the previous visa period had a length of stay of less than 12 months, then this person will be considered a new long-term immigrant.

We use first arrival and last departure dates within a visa period as an approximation for length of stay in the UK. To estimate long-term international migration, this total length of stay must be over 365 days. The “first arrival, last departure” method allows us to exclude trips abroad over the course of an extended period of residence. If either (but not both) of these dates are missing and there is evidence of travel into or out of the UK during their visa, then visa start or end dates are used as a proxy.

To estimate emigration, we identify previous long-term immigrants with a last departure from the UK during the reference period. We record them as a long-term emigrant if they do not return to the UK within 12 months, or if they only return for a short-term stay.

Adjustments to produce provisional estimates of migration

For individuals whose first arrival occurred within the 12 months before the end of the reference period, there is not yet enough information to see a stay of 12 months or more. To provide estimates of immigration for this period, we use past behaviour showing the proportion of arrivals on long-term visas who only stay short-term. We use this to create an assumption of what proportion of arrivals on long-term visas will leave before staying a year. This is known as an early leaver adjustment. We apply this adjustment to the most recent four quarters by reason for migration, nationality, and age, as our research has shown that different groups exhibit different behaviours. These provisional estimates are updated as we get further travel data to identify actual behaviour during this time.

To produce provisional estimates of emigration, we cannot exclusively use the “first arrival, last departure” approach as this requires a completed visa period within which a last departure can be identified. For the most recent 12 months, not enough time has passed to see if an individual has left for 52 weeks or more with no re-arrival. We use historical trends of emigration re-arrivals to assess if an adjustment is suitable. If historical trends indicate that on average, they are higher than the current proportion of re-arrivals, then we apply an adjustment. Whereas, if historical trends are, on average, below the current proportion of re-arrivals, then we do not apply an adjustment. For years other than the most recent 12 months, we include individuals in the emigration estimate who have been absent for 52 weeks or more and have an open visa period because these individuals would not be identified as an emigrant.

Further information on each of these adjustments, and how we have improved our assumptions, can be found in our [International migration research, progress update: November 2023 article](#).

EU+ nationals

Our latest methodology to estimate the migration of EU+ nationals is based on [our new methods for estimating the international migration of EU+ nationals](#). Our EU+ migration methods can be broken down into two main components:

- EU+ migration estimates for those who travel on a visa
- EU+ migration estimates for EU+ nationals with status on the EU Settlement Scheme (EUSS)

We also produce an adjustment to account for Irish nationals using the Department for Work and Pensions (DWP) Registration and Population Interactions Database (RAPID), as the HOBI data excludes Irish nationals.

EU+ visa holder

For EU+ visa holders, we have applied the “first arrival, last departure” (FALD) method to produce long-term migration estimates for this group. This method has been used in the long-term migration estimates for non-EU+ nationals since May 2022, and captures those who travel with a visa.

For immigration, this method uses an individual’s first arrival and last departure dates to approximate their length of stay in the UK within the period for which they have a valid long-term visa. Individuals whose stay lasts 12 months or more are classified as long-term immigrants.

For emigration, we identify previous long-term immigrants with a last departure from the UK during the reference period. We then record them as long-term emigrants if they do not return to the UK within 12 months, or if they only return for a short-term stay (less than 365 days).

EU+ visa holder adjustments

We apply an early leavers adjustment to the HOBI data for EU+ visa holders. For those who arrived in the last 12 months, we use past behaviour to estimate how many will leave before that point and remove them from our estimates. We apply this adjustment to our most recent four quarters, by reason for migration, nationality, and age, in the same way as is done for non-EU+ nationals.

We also make an emigration re-arrival adjustment where historical trends suggest it is needed. This is where someone left the UK within the last 12 months, but has since returned, and therefore does not count as a long-term emigrant. We need to make an adjustment when, on average, the historical proportion of re-arrivals is higher than the current proportion of re-arrivals to account for those for whom we do not have 12 months of travel data.

EU Settlement Scheme

For those with status on the EUSS, our method uses travel dates and calculates time spent in and out of the UK. It assumes that if someone has settled status, and their first travel event is an emigration, they must have been resident in the UK. We use three steps to calculate emigration:

1. We group together extended trips of 45 days or more outside the UK.
2. Using this grouped period, we identify those who spend more time out of the UK than in.
3. We then look at the total amount of time spent outside the UK; if the total time out of the UK exceeds the limit of 270 days, within a 365-day period, they are classed as a long-term emigrant.

To calculate immigration, we use an inverse approach:

1. We identify extended periods within the UK of 45 days or more.
2. Using this grouped period, we identify those who meet the immigration criteria.
3. An immigration period is counted from the earliest arrival, visa application date or, for re-arrivals, when the time in country reaches 270 days.

EU Settlement Scheme assumptions

The EUSS has two subcategories: settled and pre-settled. Joining family members are also eligible to apply to the EUSS as relatives of an EU+, other EEA or Swiss citizen resident in the UK.

We apply a set of assumptions to those with EUSS where we have a missing first travel arrival. We assume, if someone has settled status, and their first travel event is an emigration, they must have been resident in the UK. HOBI data only include information collected from April 2015. As EU+ citizens had freedom of movement before 2021, for those who arrived before 2015 we cannot see when they first arrived. If an individual with full settled status has a missing travel first arrival, we assume they arrived at least five years before their EUSS application date.

If an individual who has pre-settled status or who is joining a family member is missing a travel first arrival, we assume they arrived at the time of their application date.

Adjustments to produce provisional EU migration estimates

Irish nationals adjustment

The HOBI data exclude Irish nationals, as the Common Travel Area means that Irish nationals do not need to have a visa or status on the EUSS to enter the UK.

To account for this, we have created an adjustment using the DWP's RAPID data to capture Irish national migration.

The Irish national proportional adjustment method takes the number of long-term Irish national migrants into and out of the UK captured in RAPID as a proportion of total EU+ immigration and emigration in that tax year. These proportions are then applied to our total EU+ HOBI immigration and emigration estimates.

EU Settled Status imputation

The HOBI data match an individual's leave information (visa, status on the EUSS, or indefinite leave to remain) to their travel events. Sometimes this information is not matched. This can be because the individual does not require a visa to come to the UK, or the system has not matched the travel and leave information.

There are also some coverage issues with the travel data. This is because of:

- missing advance passenger information (API) from certain carriers
- data matching limitations – such as arrivals and departures being on different passports, or name changes

Our cumulative length of stay method relies on travel data to estimate time spent in and outside of the UK. Where we see two arrivals with no departure in between, or two departures with no arrival in between, we need to use imputation to predict when that missing departure or arrival may have been. We use the longest date, meaning we add a date that makes an individual's stay in the UK the maximum length, based on available travel information.

British nationals

Our latest methodology to estimate the migration of British nationals is based on [our new methods for estimating the international migration of British nationals using RAPID](#). RAPID is the best source of data currently available to estimate British national migration.

RAPID is created by the DWP to provide a single view of citizens' interactions across multiple sources, including from DWP, HM Revenue and Customs (HMRC), and local authorities. RAPID contains data for every National Insurance number (NINo) interaction with the tax and benefits system, except self-assessment for those who have been living off investments or capital income since 2008. Each NINo is assumed to relate to a unique individual.

We derive a RAPID British nationals dataset covering everyone who has a NINo and who is not included in the Migrant Worker Scan (MWS). This identifies all non-UK nationals registering for a NINo from 1975 onwards. We additionally account for those on the MWS who are likely to have naturalised and become British. Anyone from Hong Kong who does not present a British passport is added to the MWS and is included in our non-EU+ long-term international migration estimates.

We assess the activity or interactions in RAPID to measure residency. If a person has an activity and has no evidence of a foreign address in RAPID, then the person is generally regarded as being "resident" in that year.

However, people may be inactive in the data for reasons other than migration. We apply rules to adjust the residency measure for people who have stopped interacting with the systems that feed into RAPID but may have not left the UK. The rules stop a migration event being created in error where we believe a person is still resident in the UK but has no activity in the data. A person may receive more than one flag, but the presence of any flag means we consider the person resident in the year.

The residency changes across years are assessed to generate migration events. Someone who moves from being "resident" to "not resident" is considered to have emigrated at some point in the last tax year of activity. If a person has no activity in one tax year and then activity in the next tax year, this suggests they have returned or immigrated to the UK.

Using a changed residency status of "resident" to "not resident" for emigration, or "not resident" to "resident" for immigration, we are able to infer emigration and immigration events of British nationals.

An emigration event is defined as a change in residency status from "resident" to "not resident," with the emigration year assigned to the last year in which activity is observed. For example, if an individual shows activity in 2021 but none in 2022, they are classified as having emigrated in 2021, the last tax year of activity.

An immigration event is defined as a change in residency status from "not resident" to "resident", with the immigration year assigned to the first year in which activity is observed and the individual is flagged as a resident.

Our methods are based on two main assumptions:

Assumption 1

Everyone in our derived RAPID British national dataset is a British national, except for some children.

Assumption 2

Those born abroad to British parents, who can automatically acquire British citizenship from birth, will register for a NINo with their British passport when they arrive in the UK. These are predominantly children of British Armed Forces personnel overseas, who are very likely to apply for child benefit when in the UK. This will result in the automatic creation of a NINo for the child.

Assigning residency rules

We developed a set of rules to adjust for situations where people may be inactive in the data for reasons other than migration and flag that a person is likely to be resident.

Our [Implementing new methods for estimating the international migration of British nationals, progress update](#) includes more information on these rules.

Single tax year absence (gap year) rule

This rule looks for activity in tax years either side of a tax year with no activity in RAPID, marking the person as "resident" if activity is found. If there is activity in the years either side of a one-year absence, we assume that a person did not leave the UK.

Pension rule

This rule applies to anyone who does not have any activity between their last interaction up until they appear with a State or Occupational Pension record in RAPID. We assume that they have remained resident in the UK and that emigration is not the reason for their inactivity. Our figures on [economic inactivity by age](#) show that over 3.5 million people aged between 50 and 64 years are currently classified as economically inactive.

Address change rule

This rule considers anyone with no activity, but who has had their address updated on the Customer Information System, as active within the tax year. RAPID does not contain all DWP and HMRC datasets. This means that there are circumstances where someone will interact with one of those systems and have their address updated, but no activity is recorded in RAPID. Examples of this could include:

- tax self-assessment that is not connected with self-employment
- people who interact with the pension service before they claim state pension
- people interacting with DWP or HMRC on behalf of someone else

This rule also helps with overall coverage by including children with an address change. This helps to capture people who do not interact with RAPID specifically through tax and benefits.

Child Benefit (school age flag rule) grace period rule

Children do not interact with DWP or HMRC systems themselves. All interactions are carried out by others, mostly by a parent, and so they receive activity by proxy. The interactions related to children are often associated with benefits. If the circumstances of the parent change, the benefit may cease, which will look like inactivity for the child. This does not mean that a child has emigrated. This rule assumes a child remains resident if:

- the parent stops receiving child benefit on their behalf
- there is no evidence of a foreign address

Child Benefit for parents' rule

This rule considers parents of children who stopped receiving child benefit to be resident even if no activity is shown. However, if a person has a foreign address they are not considered resident.

Child parent residency rule

This rule flags a child as resident when the child has no activity, but their associated parent does have activity in the UK.

Penultimate year flag rule

Some of the rules that are applied throughout the time series cannot be applied in the latest year. Consequently, some people are incorrectly classified as not resident. This can be because there are no data in the latest year or because the gap year rule cannot be applied. To mitigate this, the penultimate year rule adjusts the resident population in the latest year of data, for those with evidence of activity in the December of the penultimate year.

Adjustments to produce provisional British national migration estimates

The RAPID dataset was not designed to measure migration; it measures economic activity including benefits. We adjust our initial results of changed residency status, derived from the interactions with the RAPID and the residency rules, to account for this difference in economic activity and migration activity. We do this using evidence from other data sources.

Please see our [Implementing new methods for estimating the international migration of British nationals, progress update](#) for further information on each of these adjustments and our assumptions.

Non-activity emigration adjustment

Emigration estimates from the tax-year-ending March 2022 appeared higher than expected, when compared with long-term trends, particularly in the working-age population. However, there has been a widely reported increase in individuals leaving economic activity following the coronavirus (COVID-19) pandemic, including:

- young people [not in education, employment or training \(NEET\)](#)
- early [retirees aged 50 years and over](#)

Further information is available in the [Economic labour market status of individuals aged 50 and over, trends over time report from DWP](#).

To address this, we applied an adjustment to exclude individuals from the emigration estimates who had a full year of activity recorded in RAPID before their apparent emigration.

Naturalisation adjustment

RAPID is not updated when foreign nationals registered on the MWS obtain British citizenship (become naturalised). These people will be erroneously excluded from the British migration estimates if they subsequently migrate out of the UK and/or if they return.

To compensate for these missing people, a naturalisation adjustment is required. This is based on:

- Home Office Migrant Journey data(for non-EU+ nationals)
- Census 2021 data(for EU+ nationals)

The adjustment reflects the probability of naturalisation based on region of birth, year of arrival, and length of stay.

Our [Implementing new methods for estimating the international migration of British nationals, progress update](#) includes further information.

Coverage adjustment

Our British nationals estimates are limited by the population coverage of RAPID. To minimize the coverage error in the RAPID migration estimates and produce more accurate estimates, we adjust the RAPID immigration and emigration estimates.

For the immigration adjustment, we use [migration data from the census for England and Wales](#). Census data on migration can be used to explore migration to the UK in the year before the census data collection. We use data on immigrants by single year of age of the 2011 Census and Census 2021 to adjust the estimates with scaling factors by age group.

We repeat this process for emigration, but we use EU immigration single year of age estimates for visa holders. We cannot use the census, as this only provides estimates for immigration and not emigration. We assume that the EU immigration age profile provides a more reliable age profile of British national emigration than our current RAPID age profile, and that British emigration ages are similar to EU immigration ages. Our [Implementing new methods for estimating the international migration of British nationals, progress update](#) includes further information.

Forecasting for timelier estimates

RAPID is made available to the Office for National Statistics (ONS) on an annual basis in Quarter 3 (July to Sept) for the previous tax year. Currently we publish international migration estimates twice a year, which require forecasting RAPID for three or nine months.

We project the data forward to account for the time lag in the data and the need for timely estimates. Temporal disaggregation is used to break down the annual RAPID British national data into quarterly data and to project the data forward to the following missing quarters.

For the disaggregation, we use the Fernandez method outlined in the [ESS guidelines on temporal disaggregation, benchmarking and reconciliation \(PDF: 2.3MB\)](#), which uses a regression approach to look for a relationship between two datasets. In this case, the datasets are the HOBI dataset and the RAPID. We use the EU HOBI time series as our signal data, as UK migration patterns are similar to EU+ patterns. The method breaks down the annual RAPID data into quarterly data and then reaggregates it to year ending quarterly data. The data are then revised when updated data are received.

Our [Implementing new methods for estimating the international migration of British nationals, progress update](#) includes further information.

5 . Production of outputs and quality assurance

The estimates undergo quality assurance to ensure they are plausible and meet the standards of experimental statistics set by the UK Statistics Authority. Further information on quality can be found in our [Long-term international migration estimates: quality assuring of administrative data methodology](#).

For our most recent [Long-term international migration, provisional bulletins](#), we have included uncertainty intervals associated with some parts of the admin-based migration estimates (ABME) process, including adjustments, modelling, and survey-based estimates. We quantified uncertainty across three nationality groups: EU+ (all EU countries and Norway, Iceland, Liechtenstein, and Switzerland), non-EU+, and British nationals, drawn together by a composite measure to create total immigration, emigration, and net migration uncertainty intervals.

The uncertainty intervals are incomplete and should be interpreted with caution as our simulations do not measure all sources of uncertainty and likely underreport the true uncertainty. Some main sources of uncertainty, like uncertainty associated with the administrative data, are not included. More information can be found in our [Measuring uncertainty in international migrations estimates working paper series](#).

6 . Future developments

The [Office for Statistics Regulation \(OSR\) review of migration statistics](#) encouraged us to improve and broaden our user engagement, as well as ensuring that we have coherent plans across our transformation work.

We recognise the need to continuously improve our methods with our users. If you would like to find out more or have any feedback, please email us at pop.info@ons.gov.uk.

We continue to explore other data sources as they become available, and existing sources as they are updated. In the coming year, we plan to:

- explore how our methods can be improved to provide further breakdowns (including by geography)
- research how to integrate those who hold indefinite leave to remain into our estimates
- develop methods for non-visa nationals and individuals arriving on short-term visas who transition to other visas and stay long-term
- further improve methods for those with [3C leave \(PDF, 250 KB\)](#)
- investigate Advanced Passenger Information (API) and its use in our estimates
- work with other government departments to ensure published migration statistics are coherent
- implement a reproducible analytical pipeline (RAP) strategy to improve the quality of our analysis, increase trust in our analysis, and create more efficient processes

7 . Strengths and limitations

Strengths

Our current approach, as published in November 2025:

- uses a wide range of data sources to observe the behaviour of migrants, greatly helped by the data-sharing powers of the [Digital Economy Act 2017](#)
- includes estimates derived entirely from administrative data sources that capture signs of life “activity” or migration events, rather than intended migration patterns (as measured by the International Passenger Survey (IPS))
- includes improved methods, taking account of new data sources, better processing methods and the changing needs of our users (joining up with other Office for National Statistics (ONS) transformation work on population and migration statistics)
- had greater involvement and collaboration with experts and other government departments; this leads to enhanced trust in, and understanding of, these statistics, as well as more consistent methods across all government international migration data

Limitations

The current approach, as published in November 2025:

- can only produce headline figures for migration by direction of flow and broad nationality groups (British, EU+, and non-EU+), which does not meet all our users' needs
- identifies migration events from administrative data not designed to estimate migration for British nationals; we have incorporated ways to address challenges related to this in our new methods and were able to move away from IPS data, which no longer include arrivals data

8 . How our methods have changed over time

The way we estimate international migration is evolving, taking account of new data sources, improved methods, and the changing needs of our users.

We summarise the different methods we have used to calculate international migration, developed since April 2021.

Version one

The first version of the model was published in April 2021 and provided migration estimates for March to June 2020.

The state space model (SSM) projected forward the trends and seasonality of the previous IPS data and then adjusted it by the structural shift seen in the Home Office Borders and Immigration data for non-EU citizens. This version includes assumptions about EU nationals having different travel options during lockdowns. When airports were closed, EU nationals were still able to travel by ferries and Euro Tunnel.

Version two

This version was published November 2021 and produced estimates up to December 2020.

The model in version two remained similar to version one, however, we updated one of our assumptions in the model by creating an EU proxy series for estimating migration of EU nationals. This new EU trend used in the SSM was based on historical movements of EU nationals, rather than an assumption that EU nationals behave the same as non-EU nationals (as in version one).

Version three

This version was published in May 2022. This version relied more on administrative data and benchmarked the EU estimate to the Department of Work and Pensions (DWP) Registration and Population Interactions Database (RAPID) for the first time.

In version three, record-level Home Office Borders and Immigration data were not available for the final eight months of the time series (November 2020 to June 2021). This missing time period was estimated using an aggregated version of the data. We applied the pattern of change observed in the aggregate dataset with the Denton-Cholette method to predict the record level dataset for the missing period. This provided us with a rate of change for arrivals on a month-to-month basis.

For more information on the Denton-Cholette method, please see the [European Commission's Temporal disaggregation, benchmarking and reconciliation guidelines \(PDF, 2.3MB\)](#).

At the time, we did not have an equivalent method for measuring non-EU emigrants. Therefore, we calculated a ratio between emigration (numerator) and immigration (denominator) on a monthly basis from the aggregate dataset, which was applied to the calculated non-EU immigration estimates to estimate emigration. This assumed the trends in the aggregate dataset for the immigration series and emigration series are similar to the trends in the record-level data, as both are derived from the same source.

However, subsequent estimates of emigration using record-level data (introduced in version four) entailed average revisions of around 200,000 emigrants compared with the version two approach. These revisions are presented in [Section 8: Revisions to migration statistics](#) of our [Long-term international migration, provisional: year ending June 2022 bulletin](#).

Version four

This version was published in November 2022 and produced quarterly estimates for year ending June 2020 to June 2022.

In version four, for EU nationals we introduced a more comprehensive student adjustment based on the linking of Higher Education Statistics Agency (HESA) and HM Revenue and Customs (HMRC) Pay as You Earn Real Time Information (PAYE RTI) datasets to understand how many international students were in employment during their studies. We also introduced an adjustment for those aged under 16 years, which until this iteration had been excluded from our estimates. This adjustment was based on an adult-to-child ratio derived from the International Passenger Survey (IPS).

The non-EU estimates in version four used the complete time series for record-level Home Office Borders and Immigration data, which had been unavailable in version three. The methodology of emigration for non-EU nationals was made comparable with the methodology of the immigration of non-EU nationals, and an adjustment for recent arrivals and departures was implemented to avoid overestimation.

Further detail on these changes can be found in our [International migration research progress update: November 2022 article](#).

Version five

This version, published in May 2023, produced quarterly estimates for year ending December 2018 to December 2022.

Changes to EU estimation

The EU estimates of international migration continue to be based on DWP's RAPID. In our original research article into this administrative data source, we used four categories based on the amount of activity for the identification of long-term international migrants. For further information, please see our [Methods for measuring international migration using RAPID administrative data](#).

The C1 and C2 categories most closely aligned with the UN definition of a long-term migrant. When we initially developed our method, we expanded on this definition of long-term activity to reflect the complexity of people's lives. This created two further categories: C3 and C4.

As part of the post-census reconciliation of the population estimates, we have reassessed the international migration component based on our new methodology using administrative data. Through this process, we have acknowledged that those categorised using the C3 and C4 classifications are likely to have pushed the definition of long-term migration too far, resulting in the overestimation of migration. Therefore, we have redefined our long-term international migration (LTIM) estimates to only include those people who meet the C1 and C2 classification criteria.

In addition to this, we have also brought our student emigration adjustment in line with the methodology introduced in version four for the student immigration adjustment.

Changes to non-EU estimation

We have continued to refine our methods using Home Office Borders and Immigration data, and we have updated several components, which are summarised as follows.

We now calculate the recent arrival adjustment based on reason for migration rather than at the headline figure (all immigration). This is to reflect that different types of migrants have different behaviours.

We have also implemented an adjustment for the Ukraine schemes and British National (Overseas) visa route arrivals where we do not have enough information to suggest how many people do not have a long-term stay of 12 months or more. Internal Home Office analysis shows that many people left the UK before reaching the 12-month period. We have used these data to implement an adjustment for these groups and removed these arrivals from our long-term immigration estimates where they have been outside the UK for eight weeks or more.

We added an emigration adjustment to account for those who have left the UK long-term but still have an open visa. For the most recent 12 months, we add an adjustment to include individuals who have left the UK and not subsequently returned, and who have up to three months left on their visa after the data extract. For other years, we add an adjustment to include individuals in the emigration estimate who have been absent for 52 weeks or more, and whose exits have not been identified because of the visa period still being valid.

Inclusion of asylum seeker applicants and returns, and resettlement scheme arrivals

Estimates included asylum seekers and resettled refugees, for the first time since moving to administrative data. An [asylum applicant](#) (also referred to as an “asylum seeker”) is someone who makes a claim to be recognised as a refugee under the Refugee Convention.

We added the total number of asylum applicants and resettlement scheme arrivals to the international immigration estimate. We used internal Home Office analysis to apply an adjustment to account for people who applied for asylum after entering the country on a long-term visa (for example, on a student visa), by removing them from the count of asylum applications.

We added the total number of asylum returns to the international emigration estimate.

To include asylum seekers and resettled refugees in the long-term international migration (LTIM) estimation, we have made the assumption that:

- all asylum seekers are LTIM based on processing times in recent years, assumed deportation lag, and declared intent to stay in-country
- returns are people who have been in-country for more than 12 months
- all resettled persons are LTIM based on declared intent to stay in-country
- all asylum seekers arrived in the UK no more than 12 months before applying

All assumptions will be reviewed in the future.

Changes to British nationals estimation

Following the inclusion of British National (Overseas) visa route arrivals in the non-EU estimates based on Home Office Borders and Immigration data, we have made an adjustment to the IPS-based estimates to avoid double counting. We did this using a combination of country of birth and country of last residency, and removing these from the IPS estimates.

Version six

In this version, published in November 2023, we updated our assumption that people emigrated at the end of their visa, unless we saw evidence of travel on a new visa. We implemented a visa transitions adjustment to account for a change in behaviour, where individuals moved to a new visa, but did not travel on this, and have updated our year ending December 2022 estimates. More information can be found in our [International migration research, progress update: November 2023 article](#).

For the disaggregation of our EU estimates, we transitioned from using the Denton-Cholette method to the [Fernandez method \(PDF, 2.3MB\)](#).

We updated our estimates for the year ending June 2012 to June 2021. This allowed us to provide a coherent back series of EU, non-EU and British long-term international migration to and from the UK in line with evidence provided by the Census 2021 and other sources. More information can be found in our [Estimating UK international migration: 2012 to 2021 article](#).

We improved the count of asylum applicants and returns by linking the asylum applications data to visa data to see who was already in the country before applying for asylum, and linking the applications data to returns data to see who left within a year of applying for asylum. Therefore, we no longer assume that all asylum seekers are long-term international migrants (LTIM) or that returns are people who have been in-country for more than 12 months.

We have published uncertainty estimates to accompany our LTIM estimates for year ending June 2023.

Changes to nationality breakdowns for immigration into the UK

The non-EU nationality breakdowns for immigration are calculated at the individual nationality level. To calculate total immigration for the individual nationality, unadjusted immigration counts are produced using Home Office Borders and Immigration data and are broken down by nationality. The early leavers immigration adjustment is applied, by reason for migration, for each of the nationalities and the count for each reason is summed to create the nationalities total immigration figure.

EU nationality breakdowns are calculated differently. They cover the year ending March 2023 and consist of country grouping level breakdowns (EU14, EU8, EU2 and EU other). The reason for the difference in time periods is that the EU estimates are calculated using the Registration and Population Interaction Database (RAPID). To produce EU nationality breakdowns, we take the inflow data from RAPID and disaggregate it to the country grouping level. We do not apply an under 16 years (U16s) or a student adjustment.

Version seven

In this version, published in November 2024, we have implemented a series of changes to our non-EU+ estimates.

We have removed visit visas and some arrivals on in-country visas, and count long-term travel outside the UK during a visa period in our emigration estimates.

We have corrected our method for identifying individuals who have obtained a new visa while in the UK but have not yet travelled on it. We did this by linking an individual's travel history to data on their visa applications. As a result of this method correction, we no longer need to make use of a visa transitions adjustment. We have also improved our early leavers adjustment to include nationality and age.

We have also made some edits to our EU+ estimates. We have widened our EU category slightly to EU+ for estimates from year ending June 2021 onwards. The EU+ category includes nationals from all EU countries and those from Norway, Iceland, Liechtenstein, and Switzerland. We have included these within our EU+ category because people from these countries were, and still are, subject to the same immigration controls as people from the EU. For example, people from Norway, Iceland, Liechtenstein, and Switzerland can apply for EU settled status. The labelling of non-EU to non-EU+ is for consistency.

For further details, see our [International migration research, progress update: November 2024 article](#).

9 . Related links

[Long-term international migration, provisional: year ending December 2025](#)

Bulletin | Released 21 May 2026

Official statistics (in development) of UK international migration, year ending (YE) June 2012 to YE December 2025; estimates from YE June 2025 and YE December 2025 are provisional and will be updated when more complete data are available.

[Implementing new methods for estimating the international migration of British nationals, progress update: November 2025](#)

Article | Released 18 November 2025

Overview of new methods for estimating long-term migration of British nationals using the Registration and Population Interaction Database (RAPID) and revised time series.

[Implementing new methods for estimating the international migration of EU+ nationals, progress update: November 2025](#)

Article | Released 18 November 2025

Overview of new methods for estimating long-term migration of EU+ nationals using the Home Office Borders and Immigration (HOBI) data and revised time series for year ending June 2021 to December 2024.

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

Article | 23 November 2023

The coherence of migration statistics is an important part of the work the Office for National Statistics (ONS) are doing to transform the way we produce population and migration statistics for our users. This article 1) explains how we arrived at the revised back series to be used for rebasing of mid-year population estimates, 2) sets out how migration has changed over the decade, 3) assures that new methods are robust.

[Long-term international migration estimates: quality assuring administrative data](#)

Article | 16 November 2023

Administrative data sources and quality assurance in the production of admin-based long-term international migration estimates published in bi-annual releases.

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

Article | 23 November 2023

An article that explains to users why we have moved from a survey-based methodology for estimating international migration to using administrative data, why this is an improvement and then the remaining challenges. Its purpose is to bring all the information we have published over the years into one, easily digestible article.

10 . Cite this methodology

Office for National Statistics (ONS), updated 21 May 2026, ONS website, methodology, [Methods to produce provisional long-term international migration estimates](#)