

Article

# Implementing new methods for estimating the international migration of EU+ nationals, progress update: 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.

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Release date:  
18 November 2025

Next release:  
To be announced

## Table of contents

1. [Overview of EU+ methods](#)
2. [EU Settlement Scheme](#)
3. [EU+ visa holder](#)
4. [Irish nationals](#)
5. [HOBI and RAPID comparisons](#)
6. [Uncertainty](#)
7. [Future developments](#)
8. [Glossary](#)
9. [Related links](#)
10. [Cite this article](#)

# 1 . Overview of EU+ methods

This article provides an update on our move to using the Home Office Borders and Immigration (HOBI) data for estimating long-term international migration (LTIM) of EU+ nationals.

EU+ migration refers to the migration of people who hold EU nationality. This is the sum of EU14, EU8, EU2, Norway, Iceland, Liechtenstein and Switzerland, plus Malta, Cyprus and Croatia (from 1 July 2013).

The International Passenger Survey (IPS) was used to estimate the migration of EU+ nationals until March 2020. These estimates were based on an individual's intention to move to or from the UK, and their actual behaviour did not always reflect their intentions.

From May 2022, EU+ national migration has been estimated using the Department for Work and Pensions (DWP) Registration and Population Interactions Database (RAPID). This contains data for everyone with a National Insurance number (NINo) and their interactions with the tax and benefits system since 2008.

We identified people who had recently moved to the UK (using their NINo registration date) and looked for sustained interactions with the tax and benefits system to indicate a long-term immigration into the UK. When we saw evidence of these interactions stopping for a sustained period this was assumed to be an emigration.

Since January 2021, following the end of freedom of movement between the EU and UK, EU+ nationals moving to the UK have either needed a visa, status on the EU Settlement Scheme (EUSS), or another form of indefinite leave to remain. The recent availability of HOBI data for EU+ nationals includes information on visa holders and those who hold status on the EUSS. We have built on existing research into improving methodology for non-EU+ estimates to develop similar methods for EU+ migration.

To estimate the migration of EU+ migrants, methods have been developed for those travelling on visas as well as for those who hold status on the EUSS using HOBI data. As HOBI data are based on an individual's actual behaviour, rather than assumptions drawn from interactions with the tax and benefits system, it provides a better basis for estimating migration of EU+ nationals.

## Conceptual differences

There are notable differences in coverage and quality between the RAPID and HOBI data sources when used to estimate long-term migration.

### Population coverage

The RAPID data are a population stock dataset from which we use activity starting or ending to infer a migration flow into and out of the UK. RAPID has limited coverage for populations who do not interact with the tax and benefits system, for example, people under 16 years. To adjust for this, we used an adult-to-child ratio derived from the IPS, but this is no longer possible as the IPS no longer collects the data required. Therefore, to use RAPID we would need to continually roll forward IPS data from summer 2024, which would become less representative over time.

The HOBI data combine leave and travel information for all individuals, which shows when an individual is in and out of the UK and allows us to produce a flows measure. HOBI has undercoverage of Irish nationals, which we adjust for in the new method.

### Timeliness

RAPID is made available to the Office for National Statistics (ONS) on an annual basis for the previous tax year. Currently we publish biannual international migration estimates, which requires forecasting RAPID for 3 or 9 months.

HOBI comes from a live operational system and is delivered to the ONS quarterly. This means we do not need to rely on forecasting and allows for more timely estimates, in the same way we currently produce estimates for non-EU+ nationals.

## Methods

[RAPID uses flag rules to estimate activity](#), relying on assumptions that may lead to an overestimate of emigration, particularly when an individual stops interacting with the tax and benefits system.

HOBİ includes travel information, which allows us to see when an individual is in and out of the UK. There are some coverage issues with the travel data, which causes missingness in travel dates, and some travel through the common travel area is not included. Some individuals within the HOBİ data have travel information that has not been matched to a visa. This can be because they do not require a visa to come to the UK (and will typically be short-term visits) or the system has not matched the travel and visa information.

## Benefits of new method

- Estimates of migration are based on travel events as opposed to assumptions drawn from interactions within a stock dataset.
- Fewer assumptions are required in the HOBİ-based methods, reducing the risk of estimates based on flawed assumptions.
- Allows us to align the non-EU+ and EU+ methods.
- Separate EU+ migration estimates can be produced for those who travel on a visa and their reasons for migration for the first time.
- Separate EU+ migration estimates can be produced for EU+ nationals with EUSS for the first time.

## Quality assurance

To quality assure our new methods, a new governance structure to support migration statistics is now in place. Feedback from all these groups and forums has shaped the development of our methods, providing quality assurance and reassurance that we have developed methods that are an improvement on our RAPID-based method.

Internally, we have taken our new methods to the Methods and Research Assurance Group (MaRAG). This group comprises ONS methodological experts that have not been involved in the work.

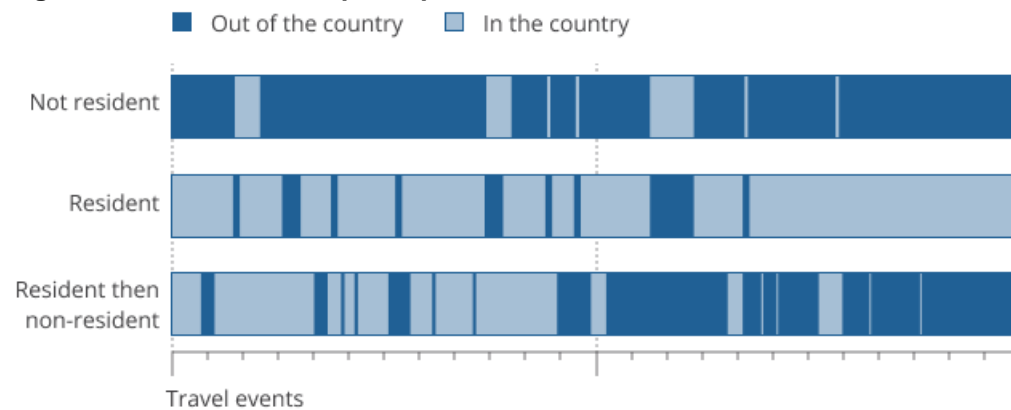
Externally and independently, our new methods have been endorsed at the [Methodological Assurance Review Panel \(MARP\) subgroup on international migration](#), the Migration Statistics User Group, which gives guidance to assess the benefits and limitations of changes and developments, and the [National Statistician's Advisory Panel on Migration Statistics](#). We have also worked in consultation with the Home Office to develop our new methods.

## 2 . EU Settlement Scheme

We outlined our research on the new method to estimate the long-term migration of those with status on the EU Settlement Scheme (EUSS) in our [International migration, research progress update: February 2025 article](#).

For those with status on the EUSS, we have developed a new method using travel dates, that calculates time spent in and out of the UK, and groups' extended trips out of the UK, into a single travel period to assess cumulative time in and out of the country. The method has been designed to be flexible in terms of defining travel periods and maximum length of time required for someone to be categorised as a [long-term migrant](#). For example, we do not want to count a weekend away or a week-long holiday as part of an emigration calculation.

**Figure 1: Illustrative example of periods in and out of the UK**



Source: Borders and Immigration data from the Home Office

An illustrative example of three types of travel history we might see in the Home Office Borders and Immigration (HOBI) data can be seen in Figure 1.

The first example shows evidence of a person who is not a resident in the UK but took several short trips to the UK.

The second example shows someone who is a resident in the UK and took several trips outside of the UK.

The third example shows someone that was a resident then transitioned to a non-resident. The third example also highlights one of the challenges that we face with categorising an emigration event and determining exactly when it occurred.

The method we have developed assumes that if someone has settled status, and their first travel event is an emigration, they must have been resident in the UK. The method uses 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.

This method allows us to identify multiple immigration and emigration events.

We outlined our research on the EUSS method development in our [International migration research, progress update: February 2025 article](#). This updated users on our decision to progress our research with the cumulative time spent in the UK method, rather than use the 12 months in 16 method.

Our decision to use the threshold of 270 days came from assessing three different options for the total time spent inside and outside the UK against the estimates produced by the 12 months in 16 method, which aligns closest to the [UN definition of a long-term international migrant \(PDF, 5.16MB\)](#). The 270 days (approximately 9 months) option produced migration estimates closest to the 12 months in 16 method but allows us to produce a timelier estimate without having to wait 16 months to confirm if an individual is a long-term migrant.

To group together extended trips for immigration and emigration, we assessed four different options: grouping trips of over 31 days, 45 days, 60 days, or 90 days. These different groupings only had a small effect on the estimates. We proceeded with our research with the grouping of 45 days.

## 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.

- Pre-settled: generally granted to those who were in the UK by 31 December 2020 but have been resident in the UK for less than 5 years or to those who are joining their family member from the EU, Switzerland, Norway, Iceland or Liechtenstein, who was living here by 31 December 2020 and has settled or pre-settled status.
- Settled: generally granted to those who have been resident in the UK for 5 years; there is no limit on how long the holder can stay in the UK.

To establish when someone first arrived in the UK, we need to apply a set of assumptions to those with EUSS where we have a missing first travel arrival. The method assumes if someone has settled status, and their first travel event is an emigration, they must have been resident in the UK.

HOBID 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 5 years before their EUSS application date. In year ending (YE) December 2024, when looking at EUSS first-time long-term arrivals, 3,000 immigration dates were based on assumptions because of missing travel data. This is in comparison with 3,500 first arrivals where immigration dates were based on travel data.

If an individual with 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. In YE December 2024, 83% of long-term arrivals had either pre-settled status or were joining family members.

## Imputation

The HOBI data match an individual's leave information (visa, status on the EUSS or indefinite leave to remain) to their travel events. Some individuals within the HOBI data have travel information that has not been matched to a visa or their indefinite leave. This can be because they do not require a visa to come to the UK (and will typically be short-term visits) or the system has not matched the travel and leave information. This causes missingness in the data.

There are also some coverage issues with the travel data included, for example, some routes or nationalities do not have full coverage. There are a number of reasons why the data may miss an individual's arrival into, or departure from, the UK. This is because of missing advance passenger information (API) from certain carriers and data-matching limitations such as arrivals and departures being on different passports, or name changes.

The 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 have assessed the following options to understand the impact for estimating the migration of those with EU settled status:

- ignore or remove missing travel data
- imputing the smallest date (making the stay one day)
- imputing the largest date (making the stay in the UK the maximum possible length)
- imputing the middle date

To help assess which imputation option was most suitable, we created a test dataset from records with complete travel data and replicated the missingness. This suggested that using the longest date is the most suitable option and produces results closest to the "truth". Therefore, this is the imputation option we have taken forward. More information on this research can be found in our [2024 Methodological Assurance Review Panel paper \(PDF, 767KB\)](#). Using this method, we are imputing 10% of missing arrival dates and 3% of missing departure dates.

We recognise that while choosing the longest date is the most appropriate based on current travel behaviour, this behaviour could change over time. We are currently working to refine this method by researching whether multiple imputation could be used to impute missing data and quantify uncertainty ([see Section 7: Future developments](#)).

## Provisional estimates

Since our last update, we have developed a new method for producing provisional long-term migration estimates of EUSS using the cumulative time spent in the UK method.

Further information about why we produce provisional estimates can be found in our [Understanding international migration statistics article](#).

To produce provisional estimates of EUSS immigration, we include:

- those who have arrived into the UK in the most recent 12 months
- those who have not previously been flagged as a resident of the UK
- people that have a length of stay of 45 days or more in a single travel event and do not have a cumulative absence out of the UK of 270 days or more
- people who do not have an emigration date (the departure date once the cumulative absence is more than the cumulative length of stay and over 270 days within a travel period) identified linked to their latest travel event

To produce provisional estimates of EUSS emigration, we include:

- those who have departed from the UK in the most recent 12 months
- those who have previously been flagged as a resident of the UK
- people who have an absence of 45 days or more in a single travel event in the reference period; this does not guarantee that the individual will go on to become a long-term emigrant but provides stricter criteria for us to consider the potential of this being their outcome, this parameter is consistent with the methodology for non-provisional EUSS estimates using full travel data

These estimates are then adjusted using observed differences between provisional estimates and revised estimates between HOBI extracts. For example, we compare the estimate produced for Quarter 2 (Apr to June) 2024 using the Quarter 2 2024 HOBI extract to the revised estimate produced for the same quarter in the Quarter 2 2025 HOBI extract and calculate the percentage difference. This proportional change between the assumed behaviour based on incomplete travel data and the revised estimates based on complete travel data are then applied to the latest provisional estimates.

### 3 . 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. More information on this method and use of Home Office Borders and Immigration (HOBI) data for non-EU+ nationals can be found in [Section 4 of our article Methods to produce provisional long-term international migration estimates](#).

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 and 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

The first adjustment applied to the HOBI data for EU+ visa holders is the early leavers adjustment. An early leaver is defined as an individual who arrives on a long-term visa but does not stay for at least 12 months and therefore does not become a long-term migrant.

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. This reflects someone who left the UK within the last 12 months but has returned and therefore does not count as a long-term emigrant. We need to make an adjustment to account for those for whom we do not have 12 months of travel data.

#### Consistency with Home Office visas granted data

We have compared our estimates for EU+ visa holders against the Home Office visas granted data.

#### Figure 2: Estimates of EU+ visa holder immigration compared with Home Office visas granted

Notes:

1. Please be aware that year ending periods overlap.
2. Numbers have been rounded to the nearest thousand.
3. Home Office visa figures are based on published visa categories, and (in some instances) may include visas that allow stays of less than 12 months.
4. We are working with the Home Office to investigate inconsistencies in some visa data, mainly affecting family emigration. This does not impact the overall migration patterns in this release. We will update our provisional estimates when we publish our migration figures in spring next year.

Our estimates of long-term EU+ immigration, shown in Figure 2, broadly align with trends seen in the Home Office data on visas granted. In the year ending December 2024, long-term immigration (provisional) accounts for 72% of Home Office visas granted. The number of visas granted will always be higher as a small proportion of visa holders may be unable to use their visa and some will not stay long-term.

## 4 . Irish nationals

The Home Office Borders and Immigration (HOBI) data will exclude Irish nationals as the Common Travel Area means that Irish nationals do not need to have a visa or status on the EU Settlement Scheme to enter the UK. To account for this, we have created an adjustment using the Department for Work and Pensions' (DWP's) Registration and Population Interactions Database (RAPID) 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.

For the 2023 tax year (year ending March 2024), Irish nationals accounted for 9% of all EU+ arrivals and 4% of EU+ departures in and out of the UK.

## 5 . HOBI and RAPID comparisons

Part of our quality assurance has involved comparing our Home Office Borders and Immigration (HOBI)-based estimates of immigration, emigration and net migration with the Department for Work and Pensions (DWP) Registration and Population Interactions Database (RAPID)-based estimates of EU+ nationals.

### **Figure 3: Long-term EU+ national immigration, between year ending June 2021 and year ending December 2024**

**Notes:**

1. Please be aware that year ending periods overlap.
2. Numbers have been rounded to the nearest thousand. Most calculations are done on unrounded numbers so totals may not equal the sum of individual parts.
3. The RAPID estimates for the time period YE March 2024 to YE December 2024 were published in the Long-term international migration, provisional: year ending December 2024 release and are provisional.
4. The HOBI estimates for the time period YE September 2024 to YE December 2024 are provisional.
5. We are working with the Home Office to investigate inconsistencies in some visa data, mainly affecting family emigration. This does not impact the overall migration patterns in this release. We will update our provisional estimates when we publish our migration figures in spring next year.

The trend between RAPID and HOBI along the data time series aligns well for immigration, shown in Figure 3. Immigration for EU+ nationals is provisionally estimated to be 81,000 in year ending (YE) December 2024, a revision of negative 41,000 from the provisional published RAPID estimate.

#### **Figure 4: Long-term EU+ national emigration, between year ending June 2021 and year ending December 2024**

**Notes:**

1. Please be aware that year ending periods overlap.
2. Numbers have been rounded to the nearest thousand. Most calculations are done on unrounded numbers so totals may not equal the sum of individual parts.
3. The RAPID estimates for the time period YE March 2024 to YE December 2024 were published in the Long-term international migration, provisional: year ending December 2024 release and are provisional.
4. The HOBI estimates for the time period YE September 2024 to YE December 2024 are provisional.
5. We are working with the Home Office to investigate inconsistencies in some visa data, mainly affecting family emigration. This does not impact the overall migration patterns in this release. We will update our provisional estimates when we publish our migration figures in spring next year.

RAPID shows a higher level of emigration across the data time series in comparison with estimates from HOBI, shown in Figure 4. In YE December 2024, the HOBI-based estimate is provisionally 150,000 in comparison with 218,000 in RAPID.

The biggest differences can be seen between 2021 and 2022, peaking in YE March 2022, with a difference of 121,000. Potential explanations for this are because of methodological limitations with using RAPID to estimate emigration, such as the reliance on assumptions that may lead to an overestimate of emigration ([See Conceptual differences in Section 1: Overview](#)).

While observing the differences between RAPID and HOBI emigration estimates, we have looked at the non-EU+ comparison during the same time frame. We found a corresponding trend during 2021 and 2022, showing a similar size difference. In YE March 2022, RAPID estimates non-EU migration as being 131,000 higher than HOBI. This provides some reassurance with the trends we see for EU+ HOBI emigration and suggests a more general systems issue rather than a specific problem measuring EU+ migration.

We also looked at age sex breakdowns of the RAPID and HOBI EU+ emigration estimates. This showed that the differences in emigration are largely driven by working-age adult men, with RAPID suggesting higher levels of emigration of this group than what we see in HOBI. This group have stopped interacting with the tax and benefits system in RAPID, but we do not see the same level emigrating long-term using travel data from HOBI.

Another potential explanation for the differences between the two estimates is the decline in the number of EU+ nationals in payrolled work. This trend is consistent in the industries with the largest number of EU+ nationals and the number of company insolvencies over this period has also risen considerably. The fall in the number of EU+ nationals in payrolled employment would feasibly increase the number of people not interacting with their National Insurance number (NINo) and could provide a reason for higher levels of emigration being derived in RAPID.

### **Figure 5: Long-term EU+ national net migration, between year ending June 2021 and year ending December 2024**

#### **Notes:**

1. Please be aware that year ending periods overlap.
2. Numbers have been rounded to the nearest thousand. Most calculations are done on unrounded numbers so totals may not equal the sum of individual parts.
3. The RAPID estimates for the time period YE March 2024 to YE December 2024 were published in the Long-term international migration, provisional: year ending December 2024 release and are provisional.
4. The HOBI estimates for the time period YE September 2024 to YE December 2024 are provisional.
5. We are working with the Home Office to investigate inconsistencies in some visa data, mainly affecting family emigration. This does not impact the overall migration patterns in this release. We will update our provisional estimates when we publish our migration figures in spring next year.

RAPID estimates higher emigration of EU+ migrants than HOBI, particularly in 2021 and 2022, as shown in Figure 5. This is because the RAPID-based method for emigration makes many assumptions regarding a lack of interaction with the tax and benefits system equating to an individual emigrating. This is reflected in the trends for net migration shown in Figure 5, with RAPID showing larger estimates of negative net migration than HOBI across the data time series.

There is a smaller impact from 2023, with the closest point of comparison in YE December 2023, where published RAPID estimates have net migration to be negative 55,000, with HOBI data estimating negative 53,000. HOBI net migration for the latest time point, YE December 2024, is negative 69,000



## 6 . Uncertainty

To provide accompanying uncertainty intervals, we are planning to apply our [simulation-based approach](#) for uncertainty estimation. Specifically, we will use our approach for quantifying uncertainty with adjustments made to visa-based long-term migration estimates from Home Office Borders and Immigration (HOBI) data and the Irish national adjustment.

Uncertainty associated with those who hold status on the EU Settlement Scheme is not included. Two adjustments are made to visa-based long-term migration to account for early leavers for immigrants and re-arrivals for emigrants. Another adjustment is then made to account for Irish nationals' long-term migration.

For the early leavers and re-arrivals, we assume that the value of the adjustment is a random variable with a normal distribution. We use historical information to inform the values of the mean and standard deviation parameters for the normal distribution. Then, we draw multiple times from the normal distribution to give a range of possible values for the proportion of early leavers or re-arrivals. Finally, we use this output to draw from another random variable with a binominal distribution. We get multiple-adjusted estimates for both immigration and emigration, which we use for interval estimation.

For the Irish national adjustment, we also assume the value of the adjustment is a random variable but uses a beta distribution. We also use historical information to inform the values of the parameters for the beta distribution. We repeat the drawing process to generate a range of possible values for the Irish adjustment for immigration and emigration.

Table 1: EU+ immigration measures of uncertainty for EU+ visa holder early leavers adjustment and Irish national adjustment  
Year ending June 2021 to year ending December 2024

<b>YE period</b>	<b>Lower bound</b>	<b>Estimate</b>	<b>Upper bound</b>
<b>YE June 2021</b>	271,000	280,000	313,000
<b>YE December 2021</b>	168,000	173,000	194,000
<b>YE June 2022</b>	151,000	157,000	174,000
<b>YE December 2022</b>	136,000	141,000	157,000
<b>YE June 2023</b>	117,000	124,000	134,000
<b>YE December 2023</b>	97,000	103,000	112,000
<b>YE June 2024</b>	86,000	94,000	100,000
<b>YE December 2024</b>	79,000	82,000	84,000

Source: Borders and Immigration data from the Home Office, and Registration and Population Interactions Database from the Department for Work and Pensions

The HOBI estimates in Table 1 include the uncertainty from the immigration early leavers adjustment for EU+ visa holders and the Irish national adjustment. All the HOBI-based immigration estimates fall within the uncertainty bounds.

Table 2: EU+ emigration measures of uncertainty for EU+ visa holders re-arrivals adjustment and Irish national adjustment  
Year ending June 2021 to year ending December 2024

<b>YE period</b>	<b>Lower bound</b>	<b>Estimate</b>	<b>Upper bound</b>
<b>YE June 2021</b>	181,000	184,000	188,000
<b>YE December 2021</b>	156,000	159,000	162,000
<b>YE June 2022</b>	157,000	159,000	163,000
<b>YE December 2022</b>	149,000	151,000	155,000
<b>YE June 2023</b>	152,000	153,000	158,000
<b>YE December 2023</b>	155,000	156,000	161,000
<b>YE June 2024</b>	153,000	155,000	159,000
<b>YE December 2024</b>	147,000	150,000	153,000

Source: Borders and Immigration data from the Home Office, and Registration and Population Interactions Database from the Department for Work and Pensions

The HOBI estimates in Table 2 include the uncertainty from the emigration re-arrivals adjustment for EU+ visa holders and the Irish national adjustment. All the HOBI-based emigration estimates fall within the uncertainty bounds.

Table 3: EU+ net migration measures of uncertainty for EU+ visa holders adjustments and Irish national adjustment  
Year ending June 2021 to year ending December 2024

<b>YE period</b>	<b>Lower bound</b>	<b>Estimate</b>	<b>Upper bound</b>
<b>YE June 2021</b>	87,000	95,000	129,000
<b>YE December 2021</b>	9,000	15,000	36,000
<b>YE June 2022</b>	-10,000	-1,000	14,000
<b>YE December 2022</b>	-17,000	-9,000	5,000
<b>YE June 2023</b>	-39,000	-30,000	-20,000
<b>YE December 2023</b>	-62,000	-53,000	-45,000
<b>YE June 2024</b>	-71,000	-61,000	-56,000
<b>YE December 2024</b>	-72,000	-69,000	-65,000

Source: Borders and Immigration data from the Home Office, and Registration and Population Interactions Database from the Department for Work and Pensions

The HOBI estimates in Table 3 include the uncertainty from the immigration early leavers and emigration re-arrivals adjustment for EU+ visa holders and the Irish national adjustment. All the HOBI-based net migration estimates fall within the uncertainty bounds.

Our simulation-based approach does have limitations with only considering uncertainty associated with adjustment. We are considering an alternative approach for intervals estimation for our long-term international migration (LTIM) estimates, which would focus on [predicting the impact of revisions on current estimates](#).

## 7 . Future developments

## Imputation for cumulative time spent in the UK

New research will begin to provide a more comprehensive quantification of the uncertainty associated with the estimated number of new long-term international migrants for those with status on the EU Settlement Scheme (EUSS). This will look to use multiple imputation for the cumulative-length-of-stay method.

Multiple imputation could provide more comprehensive uncertainty quantification relative to single imputation because multiple imputation accounts for the uncertainty inherent in the imputations themselves. This research will complement [existing research in this area](#).

The research will analyse the missingness in the data, develop a complete-case analysis to provide a benchmark and build a multiple imputation model, and analyse the results.

## Applying cumulative time spent in the UK to non-EU+ indefinite leave to remain

We plan to research how to integrate non-EU+ nationals who hold indefinite leave to remain into our estimates by running this cohort through the cumulative time spent in the UK method developed for EU+ nationals who hold status on the EUSS.

## 8 . Glossary

### Administrative data

Collections of data maintained for administrative reasons, for example, registrations, transactions, or record-keeping. They are used for operational purposes, and their statistical use is secondary. These sources are typically managed by other government bodies.

### EU and EU+

EU is the European Union. It is the sum of EU14, EU8, and EU2, plus Malta, Cyprus and Croatia (from 1 July 2013). British nationals are not included in these numbers at any time point.

- EU2 is Romania and Bulgaria.
- EU8 is Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.
- EU14 is Austria, Belgium, Denmark, Finland, France, Germany, Greece, Republic of Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and Sweden.
- Other EU is Malta, Cyprus and Croatia (joined from 2013).

EU+ is all current EU countries plus Norway, Iceland, Liechtenstein and Switzerland.

### Home Office Borders and Immigration data

Home Office Borders and Immigration (HOBI) data combine data from different administrative sources to link an individual's travel in or out of the UK with their immigration history. This system has data for all non-European Economic Area (non-EEA) visa holders and EEA nationals.

### Long-term international migration

Long-term international migration (LTIM) statistics estimate the flow of people to and from the UK. This report uses the [United Nations recommended definition of a long-term international migrant](#), which is: "A person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes his or her new country of usual residence".

## Nationality

Nationality of a country is a legal status that usually gives a person a particular set of rights relating to that country.

## 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). When more people are coming to the UK than leaving, net migration is above zero and so adds to the UK population.

## Registration and Population Interaction Database

The Registration and Population Interaction Database (RAPID) is a database created by the Department for Work and Pensions. It provides a single coherent view of interactions across all benefits and earnings datasets for anyone with a National Insurance number (NINo).

## 9 . Related links

[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) data and revised time series for the year ending June 2021 to December 2024.

[Improving long-term international migration statistics: updating our methods and estimates](#)

Article | Released 18 November 2025

A summary of the updated methods and estimates made in November 2025.

[Long-term international migration, provisional: year ending December 2024](#)

Bulletin | Released 22 May 2025

Estimates of UK long-term international migration, year ending June 2012 to year ending December 2024. These are official statistics in development. Long-term refers to people entering or leaving the UK for a period of at least 12 months.

[International migration research, progress update: February 2025](#)

Article | Released 26 February 2025

An update on international migration methods and research to further develop admin-based migration estimates (ABMEs).

[Methodological Assurance Review Panel: Migration Statistics sub-group](#)

Web page | Updated frequently

UK Statistics Authority web page for the Methodological Assurance Review Panel (MARP) Sub-group on Migration Statistics, including terms of reference, members and meeting minutes.

## 10 . Cite this article

Office for National Statistics (ONS), released 18 November 2025, ONS website, article, [Implementing new methods for estimating international migration of EU+ nationals, progress update: November 2025](#)