Office for National Statistics

Article

International migration research, progress update: May 2024

An update on international migration methods and research.

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Table of contents

1 . Overview of migration statistics transformation

This article provides an update on research to develop admin-based migration estimates (ABMEs). For detailed information on our current methods and quality, please refer to our Provisional Long-Term International migration: Technical User Guide.

We are continuing to develop timely and coherent migration and population estimates at both national and local-authority level as part of a development of an Admin-Based Population Estimate (ABPE). For the most recent publication, please see our Dynamic population model, improvements to data sources and methodology for local authorities, England and Wales: 2021 to 2022 article.

2 . Assumption setting for more recent periods of migration

We use the UN-recommended definition of a long-term international migrant and therefore need to wait for 12 months of travel data to confirm people's long-term migration status. There is a user need for more timely statistics, so we use assumptions about people's expected length of stay or departure based on past trends to produce an adjustment, which provides a provisional estimate for more recent periods. Provisional estimates have a greater level of uncertainty as trends can change. This uncertainty decreases as time passes and more data are incorporated.

In November 2023, we updated our methods for measuring Long-Term International Migration (LTIM). In our International long-term migration bulletin, published in May 2024, we have retained the same methods, with some small refinements made to the early leaver and emigration rearrivals assumptions. There have also been updates to the historical data used as more data became available, an expert consultation phase was implemented, and our approach for British Nationals (Overseas) (BN(O)) and Ukraine schemes was unified.

Immigration early leaver 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. In the current release, the adjustment covers those who arrived or departed between January 2023 and December 2023.

The early leaver adjustment is applied by reason for migration to reflect the distinctive behaviour patterns seen by different groups. In this latest release we now have enough historical data for British Nationals (Overseas) (BN (O)) and Ukraine schemes to use the same method as other reasons for migration.

In November 2023, we based our assumptions on data for YE June 2019 and YE June 2022, with YE June 2022 double weighted to reflect that recent estimates are more likely representative of future trends. Arrivals during 2020 were not used for our assumptions as they appeared to show atypical behaviour when compared with data collected before the coronavirus (COVID-19) pandemic.

Now we have more information covering the period after the COVID-19 pandemic, the data highlights that those who arrived at the end of 2019 present the most atypical behaviour. Many of those arriving at the end of 2019 – particularly international students – left early in 2020 at the onset of the COVID-19 pandemic. For those who arrived during 2020 and onwards we see a consistent downward trend in the proportion of early leavers, and we are more confident that the likelihood of those arriving during this period to go home early is affected by the COVID-19 pandemic.

Therefore, for estimates published in May 2024, we have drawn from more data periods for increased reliability and improved uncertainty estimation as there is more data available to base the uncertainty on. This includes the year ending (YE) December 2020, 2021 and 2022, with 2022 double weighted to more strongly represent recent trends.

Figure 1: There has been a steady decline in confirmed early leavers among those on study visas

Proportion of arrivals on long-term study visas leaving early, from year ending (YE) December 2019 to YE December 2023

Notes:

1. For the year ending June 2023, the early leaver assumption is applied in November 2023.
2. For the year ending December 2023, the early leaver assumption is applied in May 2024.

Downloac

This May 2024 publication assumes that 16% of arrivals on long-term study visas did not become long-term migrants. This matches our previous assumption of 16% of arrivals on study visas not becoming long-term migrants used in November 2023.

Figure 2: The proportion of confirmed early leavers for those on work visas has remained low since 2021

Proportion of arrivals on long-term work visas leaving early, from YE December 2019 to YE December 2023

Notes:

1. For the year ending June 2023, the early leaver assumption is applied in November 2023.
2. For the year ending December 2023, the early leaver assumption is applied in May 2024.

Downloac

This May 2024 publication assumes 5% of arrivals on work visas did not become long-term migrants. This is a decrease compared with our previous assumption of 8% of arrivals on work visas not becoming long-term migrants used in estimates published in November 2023. A lower assumption for early leavers will lead to a higher provisional estimate of long-term immigration within work visas.

We trialled a process to assess the suitability of our proposed adjustments for those arriving on work and study visas, which are the two most frequently recorded reasons for immigration. This included consulting with migration experts to ensure consideration of more recent changes to policy or behaviour that would not show in historical data. No further changes to the assumptions were made following this consultation.

Some experts suggested additional characteristics, such as nationality, age and sex, to better reflect current behaviour to further improve the accuracy of the adjustments. We have also been exploring alternative methods for producing provisional estimates of immigration including using machine learning models (see Section 6). This work has also recommended we include characteristics, such as nationality, age and sex, to further improve the early leaver adjustment. These improvements are being explored with the aim to incorporate them into the assumptions for our next publication in November 2024. We will continue to review the inclusion of expert insight for our future releases.

For those arriving on other visa types, we used the same method as described for work and study visas but did not include the trial consultation exercise with migration experts. In future we will look to expand this consultation with migration experts to include all reasons for migration.

Emigration rearrivals adjustment

An emigration rearrival is 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.

As with the early leaver adjustment, historical data can be used to estimate the number of departees in a reference period that subsequently return within 12 months. We have updated this assumption to be consistent with changes applied to the early leavers' adjustment.

Our previous assumption was based on YE June 2019 and 2022 double weighted. The assumption was that approximately 3% of people who were observed departing in the most recent reference period would not become long-term emigrants.

With more data now available, we have updated our assumptions to use YE December 2020, 2021 and 2022 double weighted (as per the early leavers adjustment). This has changed the adjustment from 3% to 5%.

Emigration visa transitions adjustment

When a long-term international migrant transitions to a new visa but does not travel on it, they may be incorrectly classed as an emigrant. We have applied an adjustment to the YE December 2023 estimates to account for this, using the same method discussed in the International migration research, progress update: November 2023.

Table 1: Impact of adjustments on year ending (YE) December 2023 immigration estimates

Total arrivals	**1,126,000**	
Adjustments	Immigration early leavers	-86,000
	Immigration arriving on a Long-term international migration (LTIM) visa and applying for asylum	-9000
Non-EU long-term immigration		1,031,000

Source: Home Office Borders and Immigration data from the Home Office

Notes

1. Numbers have been rounded to the nearest thousand. Totals may not equal the sum of individual numbers.

Table 2: Impact of adjustments on year ending (YE) December 2023 emigration estimates

Total departures	**289,000**	
Adjustments	Emigration rearrivals	-18,000
	Emigration early exits	+49,000
	Emigration visa transitions	-87,000
Non-EU long-term emigration		233,000

Source: Home Office Borders and Immigration data from the Home Office

Notes

1. Numbers have been rounded to the nearest thousand. Totals may not equal the sum of individual numbers.

3 . Impact of revisions to provisional estimates of migration

We have updated (revised) estimates of migration for the year ending (YE) December 2022 and YE June 2023 now that we have more data to confirm people's migration status and we rely less on assumptions used to produce the initial provisional estimates. Further details on revisions can be found in our Revisions policy.

For Long-term international migration, provisional: year ending December 2023, we have not made any changes to methods for estimating international migration. Although we have made some small refinements to the assumptions used to produce provisional estimates for non-EU nationals (see Section 2 for more information). We have not received any further data for EU and British nationals for these periods, so estimates of EU and British migration have not been revised.

Table 3: Impact of revisions on non-EU immigration estimates

	Change to YE December 2022	Change to YE June 2023
Updated data up to end of December 2023	+32,000	+39,000
Early leavers adjustment: improved assumptions and having complete travel data July to December 2022	-9,000	+16,000
Updated information for those arriving on Asylum and Resettlement	<500	+3,000
Total revision to non-EU immigration	+23,000	+58,000

Source: Home Office Borders and Immigration data from the Home Office

Notes

1. Numbers have been rounded to the nearest thousand. Totals may not equal the sum of individual numbers.

The revision to the immigration of non-EU nationals in the YE June 2023 is driven by three main factors.

Firstly, the Home Office Borders and Immigration (HOBI) data are within a live data-matching system that is being continuously updated with new information, including travel and visa data. The data matching within the HOBI system is also improved over time to achieve better matching and to more accurately reflect the immigration rules. These updated data lead to revisions to our immigration estimates for a variety of reasons, including:

- individuals who originally arrive on short-term visas are not initially included in our immigration estimates; some of these individuals go on to get another visa that extends their stay into the UK to over 12 months and should be counted as long-term immigrants

- individuals who are on a visa of less than a year may overstay their visa and therefore extend their stay in the UK to over 12 months and should be counted as long-term immigrants

- individuals who are initially missing information about their first arrival into the UK appear as if they have not arrived on their visa; when we see subsequent travel information out of and into the UK, we have evidence they are present in the UK and therefore backfill their first arrival date and they should be counted as long-term immigrants

These updated data have revised our immigration estimates for the YE June 2023 up by 39,000.

Secondly, when we published in November 2023, we did not have complete data to say whether those who arrived would stay long term for the YE June 2023 period. For those who arrived between July and December 2022, we now have 12 months of travel data to say whether they subsequently stayed long term. However, for those who arrived between January and June 2023, we still rely on an adjustment to estimate how many will stay long term. We have also updated the assumptions for those arriving between January and June 2023 (see Section 2).

We have revised our immigration estimates for the YE June 2023 up by 16,000 for this reason. Finally we have updated data for those applying for asylum and resettlement. We have revised our immigration estimates for the YE June 2023 up by 3,000 for this reason.

When we initially published provisional estimates of long-term migration for the YE June 2023 in November 2023 we published innovative new measures of uncertainty. These uncertainty ranges focused on uncertainty introduced by the assumptions used to produce provisional estimates of non-EU and EU migration. The revisions, as a result of having 6 months more travel data and updated assumptions, increase immigration by 16,000. This falls within these uncertainty ranges provided in November 2023. The additional revisions, resulting from updated Home Office data and updated estimates of those applying for asylum and resettlement, fall outside of these uncertainty ranges. However, the uncertainty ranges provided in November 2023 did not yet account for the error in the source data such as the coverage, measurement and processing errors.

Table 4: Impact of revisions on non-EU emigration estimates

	Change to YE December 2022	**Change to YE June 2023**
Updated visa transitions adjustment	N/A	-10,000
Having further visa information and removing the need for the visa transitions adjustment	+4,000	N/A
Total revision to non-EU emigration	+4,000	-10,000

Source: Home Office Borders and Immigration data from the Home Office

Notes

1. Numbers have been rounded to the nearest thousand. Totals may not equal the sum of individual numbers.

We have also revised our estimates of non-EU emigration for the YE June 2023. Analysis suggests that these revisions are driven by the impact of the visa transitions adjustment. This adjustment accounts for those who have extended their stays in the UK and moved onto new visas. For the Year ending June 2023 period, we now have six months' more travel data to see individuals travelling on these new visas.

We have revised our emigration estimate for the YE June 2023 down by 10,000 for this reason.

4 . Measuring long-term international migration of British nationals using administrative data

We currently use our International Passenger Survey (IPS) to measure migration patterns of British nationals. However, we have long acknowledged that the IPS has been stretched beyond its intended purpose. In 2019 we announced that we were moving away from the IPS and moving towards an administrative data-based migration statistics system. The latter measuring actual behaviours, while the former measures intentions, which can change. While we have made progress for measuring migration from EU and non-EU nationals, migration patterns for British nationals continue to use the IPS as the primary source. We have been investigating how we can use admin data sources instead, but this is more complex for British nationals as there are fewer admin data sources available to measure this group. We revised our IPS-based migration estimates in November 2023 following new information from the 2021 Census suggesting that the IPS was underestimating emigration of British nationals. This, coupled with our planned change in collection method for the IPS, has accelerated our plans to use an admin-based method for British national migration.

In November 2023, we updated users on how we plan to use Department for Work and Pensions's (DWP) Registration and Population Database (RAPID) for measuring British national migration patterns. We acknowledge that the rules we use for EU-based migration using RAPID, as shown in our long-term international migration user guide, may not be suitable for British nationals, because of the number of reasons a person may be inactive on this source, without actually having migrated. We have been working to develop some additional rules to account for some of these reasons, with many of these being based on rules, which were previously introduced in the Department for Work and Pensions's Longitudinal Lifetime Labour Market Database (L2).

The new rules we are developing

Gap year rule

The gap year rule looks for activity of at least 10 weeks in both tax years either side of the tax year where there is no activity. If activity is found, then it marks the person as "resident". For example, if a person has 10 active weeks in year 1, no activity in year 2, and 40 weeks of activity in year 3 ,with no abroad address, they would be considered resident in year 2. This is useful for those, particularly of younger ages, who may take a year out between education and entering employment, or they may be in higher education and not in employment.

Our research initially focused on gap years taken by those aged under 25 years, but we have extended this to include those newly retired or over 60 after considering research into the "grey gap years", as explained in the Telegraph.

Pension age rule

Owing to the eligibility requirements for claiming a state pension, we can assume that someone who does not have any activity until they claim their state pension has remained resident in the UK for the duration of their activity. This rule changes a person's UK residency status to "yes" for all years before claiming their state pension, therefore removing them from any migration estimates.

For British nationals living in a number of countries (excluding EEA countries and countries with a social security agreement), state pension uprating is not applied. A flag is applied in RAPID, which we can use to exclude some people from the pension age rule, as they have indicated to DWP that they are resident in another country and have migrated.

Address change rule

This rule considers anyone with no activity across benefits or earnings, but who has changed their address, as activity within the tax year. This, in turn, will change the person's status to make them resident.

Retaining children for whom payment of child benefit ceases using their parent's residency

For those children who reach adulthood and appeared on child benefit, they may become inactive, and therefore potentially classified as non-resident if they do not have activity on RAPID. This rule looks at their linked parent through child benefit and assumes that their residence status is the same as that of their parents.

Next steps and future plans

We are testing our new method for using RAPID to measure British national migration throughout 2024 and will publish our first results later in the year, including comparisons to the IPS. We may include this in our official estimates of international migration in November 2024 if the evidence suggests that this provides more accurate estimates of British national migration patterns than the IPS. There are very few data sources that are plausible to measure British national migration, so we will consider two important criteria when determining the quality of these data: the comparisons to the IPS, and expert opinion on the plausibility of the estimates.

We are also continuing to explore the potential use of Advance Passenger Information (API), following on from a feasibility study conducted in 2022 on its use as an additional data source for migration estimates. We will provide an update to users in late 2024.

One of our continuing gaps in research for nationalities are those who may hold dual citizenship. We will continue to research this group and will update users on our progress throughout the journey.

5 . Measuring uncertainty in estimates of long-term international migration

Providing measures of uncertainty for statistical estimates is important to inform users of quality and follows best practice for communicating uncertainty with the estimates. The Year Ending June 2023 provisional long-term international migration (LTIM) estimates was the first to include measures of uncertainty to accompany the mainly administrative-based international migration estimates. The estimates we publish are estimates of the most likely measure of what migration could be, and these uncertainty measures represent the quantification of doubt with the estimates for some elements of the process and provide a range where the true value of what we are trying to measure could lie.

Producing administrative-based international migration estimates is a complex process with multiple steps in the estimation process. Our measures of uncertainty that accompany LTIM estimates are only a partial quantification of doubt with the statistical process and likely underestimate the associated uncertainty. It is therefore feasible that revised LTIM estimates could be outside of the uncertainty intervals until the quantification of uncertainty is more comprehensive. This will require quantifying doubt in more of the steps of the LTIM estimation process.

Currently, LTIM uncertainty intervals only quantify the doubt associated with adjustments to non-EU estimates, adjustments and temporal disaggregation to the EU estimates, as well as sampling error from IPS estimates for British nationals estimates. Our working series paper on uncertainty in international migration estimates outlines what sources of uncertainty are quantifed and unquantified in the published uncertainty intervals. Two main factors could cause revised LTIM estimates to be outside of uncertainty intervals published with provisional LTIM estimates. First, uncertainty associated with steps in the LTIM process prior to applying any adjustments. These steps, for example, could include representative error in the data source, processing error with the data source, and possible measurement error. We have published a catalogue of possible errors in administrative data sources . Second, there has been substantial behavourial change in migration patterns, and the migration patterns are outside the range currently used as part of the uncertainty estimation process.

We have also published two working series to outline our current progress with quantifying uncertainty in LTIM estimates: A paper was published outlining our simulation-based approach and a paper published outlining how we produce a composite measure of uncertainty for headline LTIM estimates. The Office for Statistical Regulation (OSR) has recognised the Office for National Statistics's (ONS's) progress and commitment to providing users with a clear and comprehensive understanding of uncertainty in LTIM estimates in its Long-Term International Migration Estimates progress report.

There has been no method changes to our uncertainty estimation, but we do now include uncertainty quantification for the visa transition adjustments for non-EU emigration. Like our other uncertainty estimates for adjustments, our simulation-based approach has been informed by previous years to provide a range of plausible values for the adjustment. For the visa transition, we have taken into account the difference between previous adjusted estimates and the actual estimate based on updated Home Office Borders and Immigration (HOBI) data.

We are continuing to research suitable approaches to provide more comprehensive measures of uncertainty for LTIM estimates. The area of uncertainty we aim to quantify is steps in the estimation process prior to applying adjustments. This will cover the FALD (first arrival, last departure) method for measuring the target UN LTIM and focus on HOBI data.

As a case study, we tried using expert judgement and published our findings in our Quantifying uncertainty in headline international migration estimates methodology. Our results from the case study suggest that expert judgement has potential for quantifying uncertainty but would require some further steps and research to improve our current methodology.

Two alternative approaches are currently being explored to assist in quantifying more of the uncertainty in the LTIM estimation process.

Firstly, we are exploring the feasibility of using structural equation modelling (SEM), with our approach building on a previous ONS example of using SEM to quantifying error in floor-space measurement. SEM can be used to estimate the error in measurements and offers an approach that does not require needing a gold standard comparison estimate with an accepted value that is highly accurate, which is often a requirement when trying to access the accuracy of estimates.

Secondly, we are exploring the feasibility of adapting the methods used for producing uncertainty intervals for our mid-year population estimates (MYE) and admin-based population estimate (ABPE). Both methods are based on the assumption that uncertainty intervals can be produced through comparing estimates with a benchmark source, which serves as the measure of truth – ABPE and MYE use the census as the benchmark. We propose adapting these methods by using multiple benchmarks for comparison, rather than using one benchmark.

Both approaches outlined will be developed further and quality assured prior to being included in the production of more comprehensive measures of uncertainty for LTIM estimates.

6 . Future developments to the approach for producing provisional estimates of long-term immigration

We have continued to develop supervised machine learning (ML) models to predict the final LTIM status of recently arrived non-EU immigrants. This is an alternative method to produce provisional estimates of immigration where we currently rely on the Early Leaver Adjustment (see Section 2). Supervised machine learning models are mathematical models that can be trained on observed data to learn patterns and make predictions for new data. We are exploring ML models to assess whether they could be more accurate in predicting long-term international migration (LTIM) status than the current rules-based method by learning patterns from historical LTIM data with known outcomes. In our previous updates, we reported that proof-of-concept ML models that had undergone a prototype optimisation process were more accurate than the current rules-based method. Since our last International migration research progress update, we have focussed on completing our model optimisation process and final model selection, and have now assessed the first complete version of our experimental non-EU immigration model.

We have also developed a revised version of the "first arrival, last departure" rule (adjusted for early leavers) currently used to estimate provisional non-EU immigration. We have developed this method to produce new input features for our ML models. The revised rules-based method uses the same "first arrival, last departure" rule as the current method, but differs in how the early leaver adjustment is calculated from historical data. The early leaver adjustment accounts for the proportion of immigrants who are provisionally classified as new LTIM but are later confirmed to be not LTIM in updated estimates. The goal of the revision is to calculate the adjustment proportions using migrants who are more representative of the migrants to whom the adjustment is applied. In practice this means we:

- disregard confirmed LTIM status and only calculate historical early leaver proportions using migrants who would have been provisionally classified as LTIM

- only calculate historical early leaver proportions using migrants who would have been eligible to be classed as new long-term arrivals

- calculate separate early-leaver proportions for each combination of reason for migration, age group, and nationality using only one year of previous data

Our current best ML model is a binary classification model using the XGBoost gradient-boosted trees algorithm. Instead of using the model to discretely classify provisional visa periods as long-term or not-long-term, we use the model to predict the probability that each period will be long term. We then sum those probabilities for all provisional visa periods to fractionally count a provisional immigration estimate. This means we use the probabilities to weight provisional visa periods according to the model-predicted probability that they will later be confirmed to be long-term in subsequent data.

We have compared our model against the current method and our revised rules-based method using Home Office Borders and Immigration (HOBI) data from 2018 to 2022. We calculated historical non-EU inflows using confirmed visa periods, and then assessed the accuracy of provisional estimates from our model and the rules-based methods compared with the historical inflow. This period poses a difficult challenge for provisional LTIM classification as it saw substantial changes in migrant behaviour from both the end of the EU transition period and the COVID-19 pandemic. Note that we have not used completely equivalent data and methods as used in published ABMEs, and so our error metrics are not directly comparable with the error in published provisional estimates.

Our model is more accurate than the current method when predicting LTIM status for individual provisional visa periods, and results in less error in the aggregate provisional immigration estimate (Table 4). However, the revised version of the current rules-based method that we developed has similar performance to our best model (Table ML1).

Our results suggest the revised rules-based method is currently a better candidate method than our best ML model because it can achieve similar accuracy without requiring the technical and operational overhead of deploying, maintaining, and explaining a model. We are currently assuring our results internally before engaging with stakeholders to endorse a recommendation to use the revised rules-based method in future ABMEs. In future we will also seek to re-assess the performance of ML models as we move further from the coronavirus (COVID-19) pandemic and the post-EU migration system matures, to investigate whether their performance improves with more stable migrant behaviour.

Table 5: Average performance of the experimental machine-learning (ML) model and the rules-based methods for predicting long-term international migration (LTIM) status across 3 annual test cohorts (2019-2021)

Method	Mean Precision	Mean Recall	Mean F1-score	Mean absolute percentage error
Best ML model	0.882	0.921	0.901	6.412
Current rules-based method	0.848	0.945	0.894	9.534
Revised rules-based method	-	-	-	6.334

Source: Home Office Borders and Immigration data from the Home Office

Notes

1. Precision measures the proportion of visa periods that the method provisionally predicted to be long-term that were later confirmed to be long-term. Low precision introduces over-coverage into aggregate estimates.

2. Recall measures the proportion of confirmed long-term visa periods that the model provisionally predicted to be long-term. Low recall introduces under-coverage into aggregate estimates.

7 . Non-UK-born population levels

On 24 November 2022, we published experimental measures that roll forward Census 2021 to measure the population at June 2021 and June 2022 used in our International migration research, progress update article. This uses the Census, alongside births, deaths and net migration to estimate non-UK-born people living in England and Wales. As a result of our flows estimates being revised, the levels we published in November 2022 for the non-UK-born population may differ from today's published data series. We mentioned back in May 2023 that we would aim to publish a revised estimate to provide an overall UK estimate. National Records of Scotland (NRS) have yet to publish results from Scotland's Census 2022 on the non-UK-born population, so currently, we are unable to provide an update for the UK.

Historically, we measured non-UK-born population levels using the Annual Population Survey (APS), which were data based on the Labour Force Survey (LFS). However, as noted in our Statement on population of the UK by country of birth and nationality series in October 2022, we have discontinued this APS-based series because of quality issues with the LFS. We have committed to researching alternative sources to produce this measure.

Following its introduction, we are investigating how the Transformed Labour Force Survey (TLFS) can be used to produce interim measures of the non-UK-born population. Historically, we have used Labour Force Survey and Annual Population Survey data for this purpose, and it is intended that TLFS will replace these surveys in due course. We plan to update users later in 2024 on our progress.

However, our long-term ambition remains that the non-UK-born estimate of the population will be consistent with both our admin-based population estimates (ABPE), produced from the Dynamic Population Model (DPM), and our migration flows to ensure a coherent suite of data across population and migration statistics.

8 . Glossary

This is a condensed version of the full glossary of terms used in our Long-term international migration, provisional: year ending June 2023 bulletin.

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.

Advance passenger information

Advance passenger information (API) comprises records of information provided by passengers to the airline or travel company before travel. The information normally details passport number, the name on the passport, gender, and date of birth.

British national

A British national is a person who holds a type of British (English, Scottish, Welsh, and Northern Irish) nationality. The six different types of British nationality are:

- British citizenship
- British Overseas Territories citizen
- British overseas citizen
- British subject
- British National (Overseas)
- British protected person

For the purposes of our estimates, we have treated British National (Overseas) (BN(O)) as a separate category.

EU

EU 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.

Home Office Borders and Immigration (HOBI) data

Combines 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.

International Passenger Survey

Our International Passenger Survey (IPS) collects information about passengers entering and leaving the UK and has been running continuously since 1961 except between March 2020 and January 2021 when it was suspended because of the coronavirus (COVID-19) pandemic. Currently, we use it for our British national estimates and for providing information on reason for migration.

Long-term international migration

Long-term international migration (LTIM) statistics estimate the flow (or movement) of migrants to and from the UK. This publication uses the UN-recommended definition of a long-term international migrant, as explained in the Recommendations on Statistics of International Migration paper (PDF, 5MB). A long-term international migrant is defined as "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."

A long-term international immigrant in this publication refers to a person who has moved to the UK from abroad for a period of at least a year.

A long-term international emigrant in this publication refers to a person who has left the UK to go to another country for a period of at least a year.

Non-EU

Non-EU is the sum of the rest of the world, including the rest of Europe. British nationals are excluded from these numbers.

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 the breadth of benefits and earnings datasets for anyone with a National Insurance number (NINo).

9 . Related links

Methods to produce provisional long-term international migration estimates
Methodology | Released 23 November 2023
An explanation of the methods used to produce the latest provisional experimental statistics on migration flows into and out of the UK.

Long-term international migration, provisional: year ending December 2023
Bulletin | Released 23 May 2024
Official statistics (in development) of UK international migration, year ending (YE) June 2012 to year ending December 2023; estimates from YE June 2023 and YE December 2023 are provisional and will be updated when more complete data are available.

Estimating UK international migration: 2012 to 2021
Article | Released 23 November 2023
How migration has changed over the decade, the methods used to produce the updated series and the evidence used to demonstrate confidence that the new methods are robust.

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.

Long-term international migration: quality assuring administrative data
Article | Released 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.

Dynamic population model, improvements to data sources and methodology for local authorities, England and Wales: 2021 to 2023
Methodology | Released 18 December 2023
Update on the data and methodology used by the dynamic population model (DPM) to produce admin-based population estimates (ABPEs).

10 . Cite this article

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