Office for National Statistics

Article

Comparing sources of international migration statistics: February 2018 update

There are many sources of official statistics about international migration to and from the UK, each valuable in its own right in measuring particular aspects of international migration. This note outlines the differences between the data sources and points to more detailed articles regarding this.

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1 . About this note

There are many sources of official statistics that measure different characteristics of international migration into and out of the UK as well as the number and characteristics of migrants who have settled in the UK. Taken together they can provide a rich picture of migration in the UK. It is important, however, to understand that these sources measure different things: some measure flows, some measure stocks, some measure workers, some students and some only measure the characteristics of those migrating from outside the EU.

This note summarises some of the main themes to help users understand that the differences between the various sources are driven by differences in definitions and coverage. It highlights that each source is valuable in its own right in measuring particular aspects of international migration.

The main points to note are:

1. There are many sources of migration statistics that can provide a rich picture of international migration, providing users are aware of quality and differences between sources.

2. There are definitional, timing and coverage differences between these sources. For example, Higher Education Statistics Agency data provide a good measure of non-UK domiciled students in Higher Education establishments but do not measure all student migration.

3. Users should recognise that these definitional differences will impact on any comparisons made between the data sources. For example, trends in National Insurance number registrations to adult overseas nationals can differ from Long-Term International Migration estimates, mainly due to short-term migration.

4. In some cases it is not appropriate to make comparisons. For example, we do not advise that users estimate flows into and out of the UK using the change in the household population as measured by the Annual Population Survey.

2 . Long-Term International Migration estimates

Long-Term International Migration (LTIM) estimates are based on data from the International Passenger Survey (IPS), with adjustments made for asylum seekers, non-asylum enforced removals, people resettled in the UK under resettlement schemes, visitor and migrant switchers and flows to and from Northern Ireland.

The IPS is a sample survey that collects information from passengers as they enter or leave the UK. International migration statistics from LTIM and directly from the IPS refer to flows: the movement of people in to and out of the UK during a specific period of time. A long-term migrant is defined as someone who changes their country of usual residence for a period of at least 1 year and is based on the UN recommended definition of a long-term international migrant. For more information about the use of the IPS for migration statistics, please refer to IPS Quality Information in Relation to Migration Flows.

3 . Short-Term International Migration estimates

Short-Term International Migration (STIM) estimates are also derived from the International Passenger Survey (IPS) and refer to flows. STIM estimates for England and Wales are available on the basis of 3 definitions:

- United Nations (UN) definition of a short-term migrant – 3 to 12 months for the purposes of work or study
- 3 to 12 months – all reasons for migration, this includes the UN definition and the category “other”
- 1 to 12 months – all reasons for migration, this includes the above but for 1 to 12 months; as such this definition captures more visits made for holidays and to visit family and friends

Adding together LTIM and STIM estimates does not provide a reliable measure of all immigration to the UK within a specific time period. Short-term immigration flows are based on journeys, not people, and have methodological differences from LTIM flows, which are explained fully in the statistical bulletin. In addition, it is possible for someone to be both a long-term and short-term migrant in the same period and STIM estimates are based on actual flows whereas LTIM covers migrants' intentions.

However, although they cannot be added together to provide one single, accurate measure of international migration, LTIM and STIM estimates of immigration and emigration should be considered alongside and in the context of each other. These estimates represent different people immigrating for different reasons but they can help to provide an overall picture of international migration.

4 . Annual Population Survey

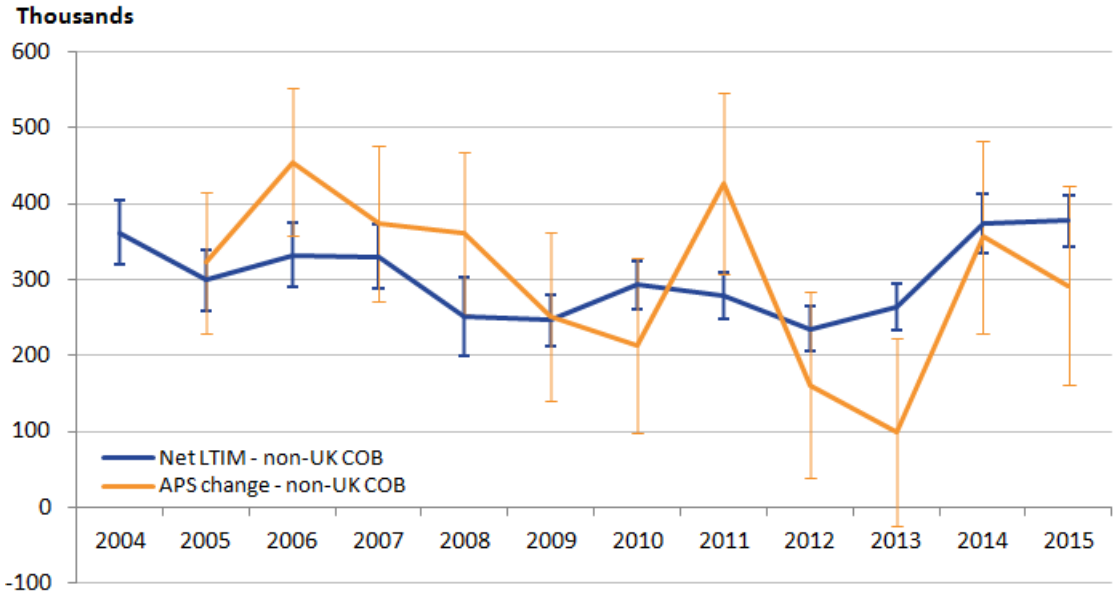
The Annual Population Survey (APS) estimates of population by country of birth and nationality refer to the resident household population (or “stock”) living in the UK at a particular point in time. The APS uses data from two waves from the main Labour Force Survey (LFS) with additional data collected via a local sample boost and so the following observations about the APS equally apply to the LFS.

On 1 December 2016, we published a report that explores the definitional differences between Long-Term International Migration (LTIM) flows produced using the IPS and the change in the estimates of the non-UK born population stock measured by the APS. In theory, the change in the number of non-UK born people living in the UK from year-to-year should be close to the net flow of non-UK born people into the UK.

However, although both sources (IPS and APS) have value, they are not directly comparable in this way as they have fundamental coverage and sampling differences. They are designed to measure different things, in different ways, based on different types of data and neither has complete coverage. One important example of these differences is that the APS is a survey of residential addresses and does not include most communal establishments. Changes in APS figures between two points in time show the net effect of all population changes (for example, births of non-UK nationals) rather than a flow and are subject to relatively large levels of uncertainty.

Figure 1: Comparison of Long-Term International Migration net migration estimates and annual differences in Annual Population Survey estimates of the population, non-UK born population

2004 to 2015



Source: Office for National Statistics – International Passenger Survey and Annual Population Survey.

Notes:

1. This chart does not use revised net migration figures between 2001 and 2011, as those were only calculated for total net migration.

The report concludes that it is not appropriate to estimate a flow from the change in the level of stocks from the APS; in the same way it is not appropriate to estimate stock figures by adding together flows. Given the APS is derived from the Labour Force Survey (LFS) the conclusions around the APS apply equally to the LFS.

For further analysis about the differences between the IPS and the APS, please refer to the Note on the differences between Long-Term International Migration flows derived from the International Passenger Survey, and estimates of the population obtained from the Annual Population Survey.

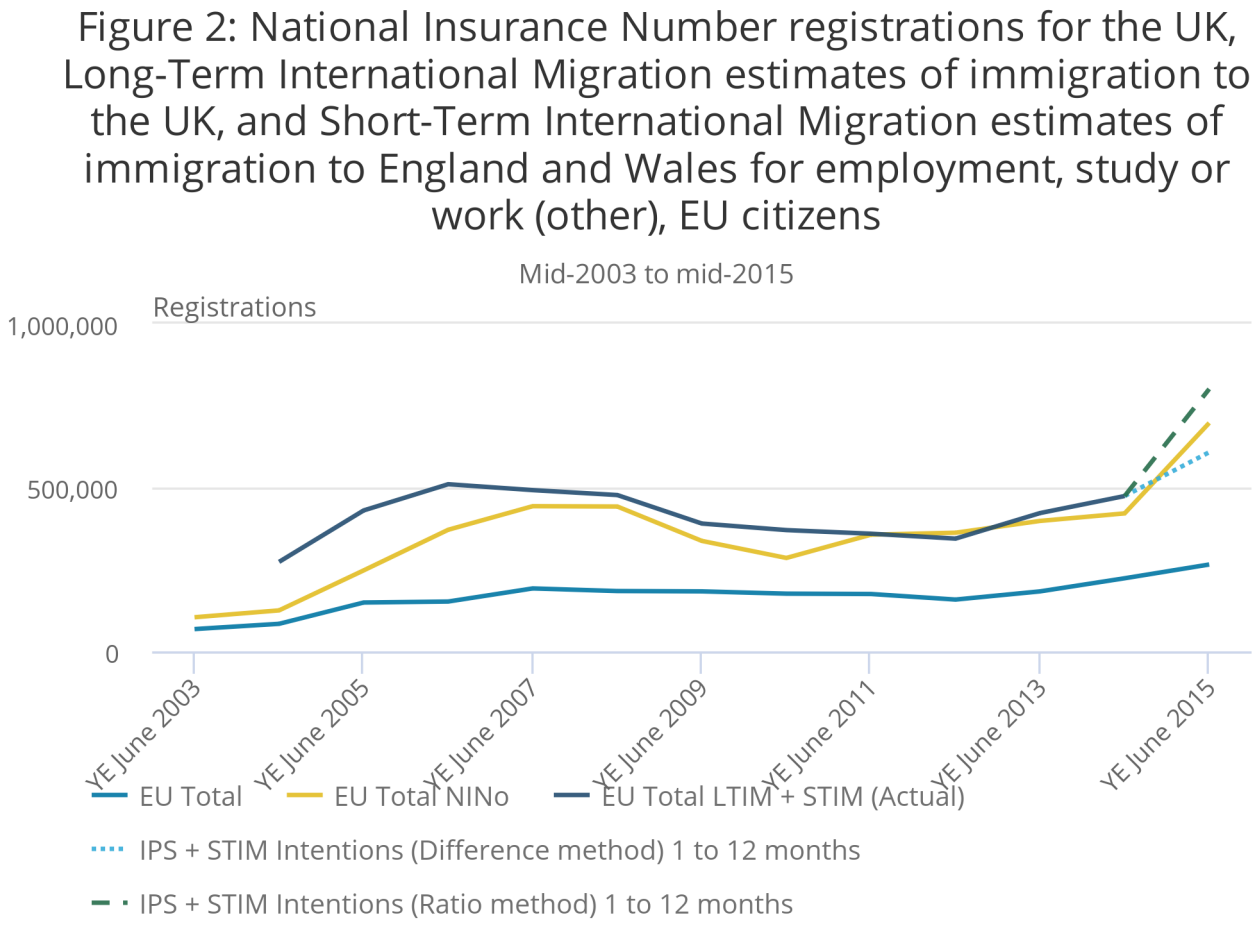
5 . National Insurance number registrations

National Insurance numbers (NINos) are required in order to work or claim benefits in the UK; this means their coverage includes long-term migrants and short-term migrants. In May 2016, a report was published on the difference between NINo registrations and Long-Term International Migration (LTIM) estimates, which concluded that short-term migration to the UK largely accounts for differences between LTIM estimates and NINo registrations.

NINo registrations data are not a good measure of LTIM, but do provide a valuable source of information to highlight emerging changes in patterns of migration. The note confirmed that the International Passenger Survey (IPS) continues to be the best source of information for measuring LTIM. Figure 2 is taken from this note and illustrates the impact of these contrasting definitions.

Figure 2: National Insurance Number registrations for the UK, Long-Term International Migration estimates of immigration to the UK, and Short-Term International Migration estimates of immigration to England and Wales for employment, study or work (other), EU citizens

Mid-2003 to mid-2015



Source: Long-term International Migration (LTIM), Short-term International Migration (STIM) and International Passenger Survey (IPS) - Office for National Statistics. National Insurance Numbers (NINos) Registered to Adult Overseas Nationals - Department for Work and Pensions.

Notes:

1. Please note that the addition of LTIM and STIM do not provide a simple and accurate measure of all immigration to the UK within a specific time period. Please see Assumptions section in Annex 1 of the full paper for detail on the data used in this chart.

6 . Visa data

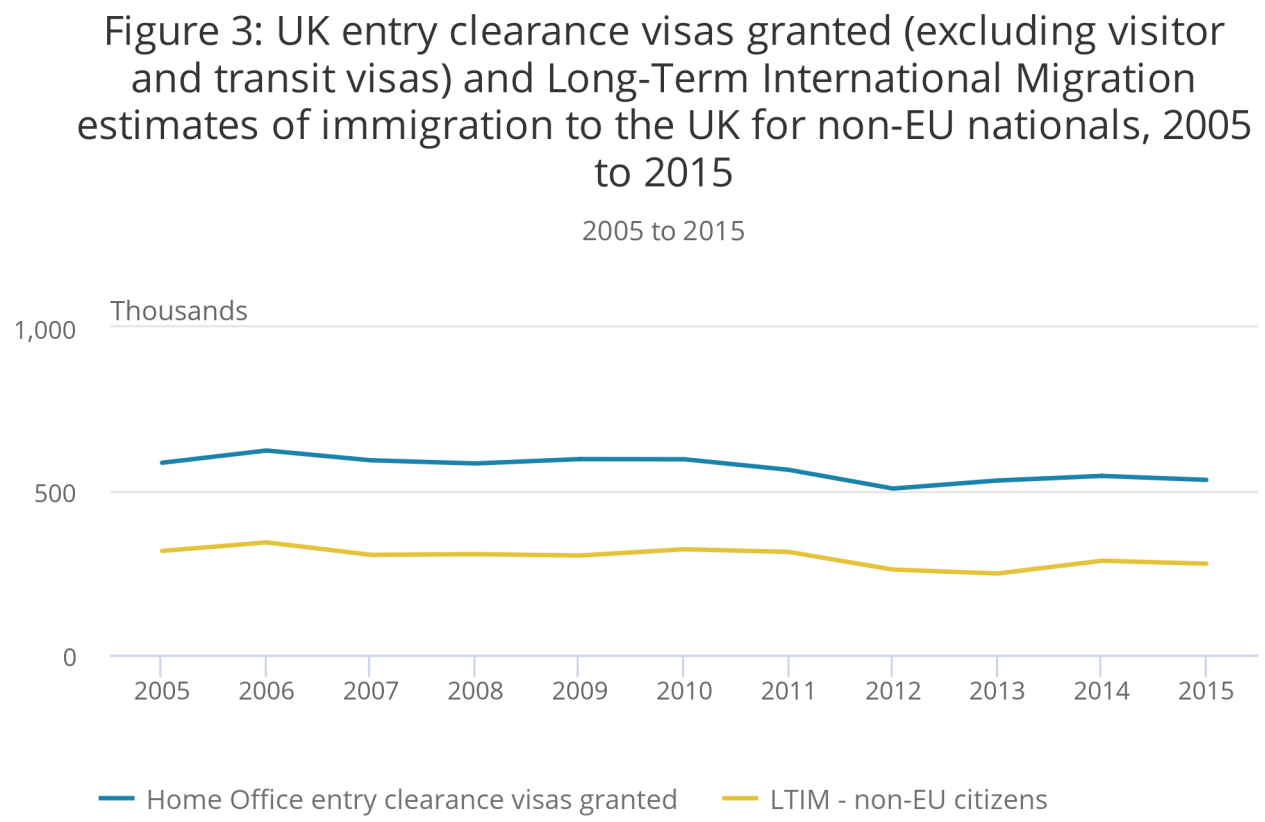
Nationality information on individuals, who are subject to immigration controls, coming from non-EU countries , is provided by visa data published by the Home Office. There are a range of potential reasons why the long-term immigration estimates from the International Passenger Survey (IPS) may differ from figures for visas granted, including:

- visa data may also include shorter visas (for less than 12 months)
- differences in coverage, for example, differences between stated intentions and length of stay
- IPS refers to an individual's self-reported main reason for migration, which may differ to visa type
- sampling variation in the IPS
- those issued a visa may not actually travel to the UK
- timing differences between when visas are granted and when an individual travels
- visa and admissions data can include dependants recorded in different subcategories from the IPS

Figure 3 compares LTIM estimates for non-EU citizens with the number of entry clearance visas granted (excluding visitor and transit visas). The gap between the two series is explained by the reasons in this section. However, they do show similar patterns reflecting that they are both measuring flows and similar concepts.

Figure 3: UK entry clearance visas granted (excluding visitor and transit visas) and Long-Term International Migration estimates of immigration to the UK for non-EU nationals, 2005 to 2015

2005 to 2015



Source: Long-term International Migration (LTIM) - Office for National Statistics. Entry clearance visas granted (excluding visitor and transit visas) - Home Office.

Notes:

1. LTIM figure shown for 2015 is provisional.

The Home Office publish visa data in the Immigration Statistics quarterly release. For more overall information about the variations between different sources of migration data, please refer to the Migration Statistics Quarterly Report (MSQR) User Information and the Home Office Immigration Statistics: user guide.

7 . Census data

While 2011 Census data can provide very detailed local information about migration, these data represent a snapshot of the population as at 27 March 2011. There are a number of census variables relating to international migration, some of which have definitional differences when compared with other international migration data sources. These variables include:

- country of birth
- passports held – the passport(s) held by the respondent, with UK passports taking priority over other nationalities; the International Passenger Survey (IPS) collects details of the passport being used to travel, while in the Annual Population Survey (APS) nationality is self-reported
- address 1 year ago – this will include return migration of UK nationals or UK-born people; it does not directly correspond to Long-Term International Migration (LTIM), as it may include people who were not intending to stay in the UK for a year or more
- non-UK born short-term residents – a “short-term resident” was defined in the 2011 Census as anyone living in England and Wales who was born outside the UK and who intended to stay in the UK for a period of between 3 and 12 months, for any reason; these data represent the stock of non-UK born short-term residents at a particular point in time (those present on 27 March 2011), and are not estimates of short-term migration moves, which are measured in IPS-based Short-Term International Migration (STIM) estimates

8 . Higher Education Statistics Agency data

Higher Education Statistics Agency (HESA) data collects information on the number of international students in Higher Education establishments in the UK. Data are supplied to HESA by institutions and include students enrolled on both undergraduate and post-graduate courses. There are a number of differences between student data available from HESA and student data available from the International Passenger Survey (IPS) and from visa data, including:

- HESA and Home Office data will include student migrants who are living in the UK for less than 1 year; HESA data refer to academic years, whereas the IPS and visa data use calendar quarters or years
- HESA data do not cover privately funded Higher Education providers, or Further Education providers; IPS estimates for study and visa data include those studying in Further Education, though both can be disaggregated between Higher and Further Education
- HESA records data by domicile, which is not the same as nationality (used in visa data and the IPS), country of birth or country of last residence (both of which are also used in the IPS)
- visa sponsorship data will include those who may not make the journey to the UK, whereas HESA and IPS data is collected upon arrival in the UK
- the IPS includes all EU and non-EU nationals who actually arrive in the UK and state that their main reason for migrating is to study this will include those who study with alternative providers and those who may have arrived on non-study visas

HESA data are particularly useful when estimating the distribution of student migrants by local authorities within the UK, since the IPS and visa data are not suitable for this purpose.

9 . Main reason for international migration

We have also carried out analysis using the various data sources in the previous sections looking specifically at the main reason for international migration. This includes reports on international student migration and family immigration.

Student international migration

Given the recent interest in international students we have published several student reports and we will continue to update users as our knowledge increases. The first report International student migration - what do the statistics tell us? was published in January 2016 and sets out:

- the trends in student migration figures
- why there are differences between the different sources
- the impact on net migration
- potential traps when interpreting the figures
- possible future developments of data sources

This report further looks at what students do at the end of their studies as the International Passenger Survey (IPS) shows a difference between the numbers of immigrants arriving to study and the numbers of emigrants who had previously immigrated to study. The report outlines possible reasons for the difference:

- students staying longer than initially expected and obtaining extensions of stay in the UK, whether as a student or in other categories such as skilled work
- students finishing their courses and overstaying their visas
- the IPS not completely recording student flows, either due to sampling or non-sampling errors (such as not responding to the survey or responding incorrectly); this is a question of recent increasing prominence
- when student migration is in a period of growth, as it generally has been in the UK since the 1990s, then student numbers will make a positive contribution to net migration during that period because the numbers arriving in any year will tend to be larger than the numbers leaving (reflecting the lower number of previous years' arrivals); if student immigration were to decline, the opposite will be true

To further understand the data sources measuring international student migration and their behaviour we have published several update articles as we have developed our understanding:

- November 2016 - update on international student migration statistics
- April 2017 - International student migration research update: what do international students do after their studies?
- August 2017 - What's happening with international student migration?

As we develop our understanding on international student migration we will provide further updates.

Family immigration

The Note on the different data sources that measure family immigration examines some of the available data sources for measuring different aspects of family-related international immigration. Home Office entry clearance visas (ECVs) and admissions; and the ONS International Passenger Survey (IPS) (restricted to non-EU nationals for comparison) are studied. Trends over time are generally similar, indicating that these are likely to reflect the true trends in family immigration. There are, however, large absolute differences in estimates of family immigration due to the differing coverage and methodologies of the sources. The note explores the definitional and coverage differences of each data source and provides users with advice on the most appropriate data source to meet their needs.

10 . Characteristics of migrants

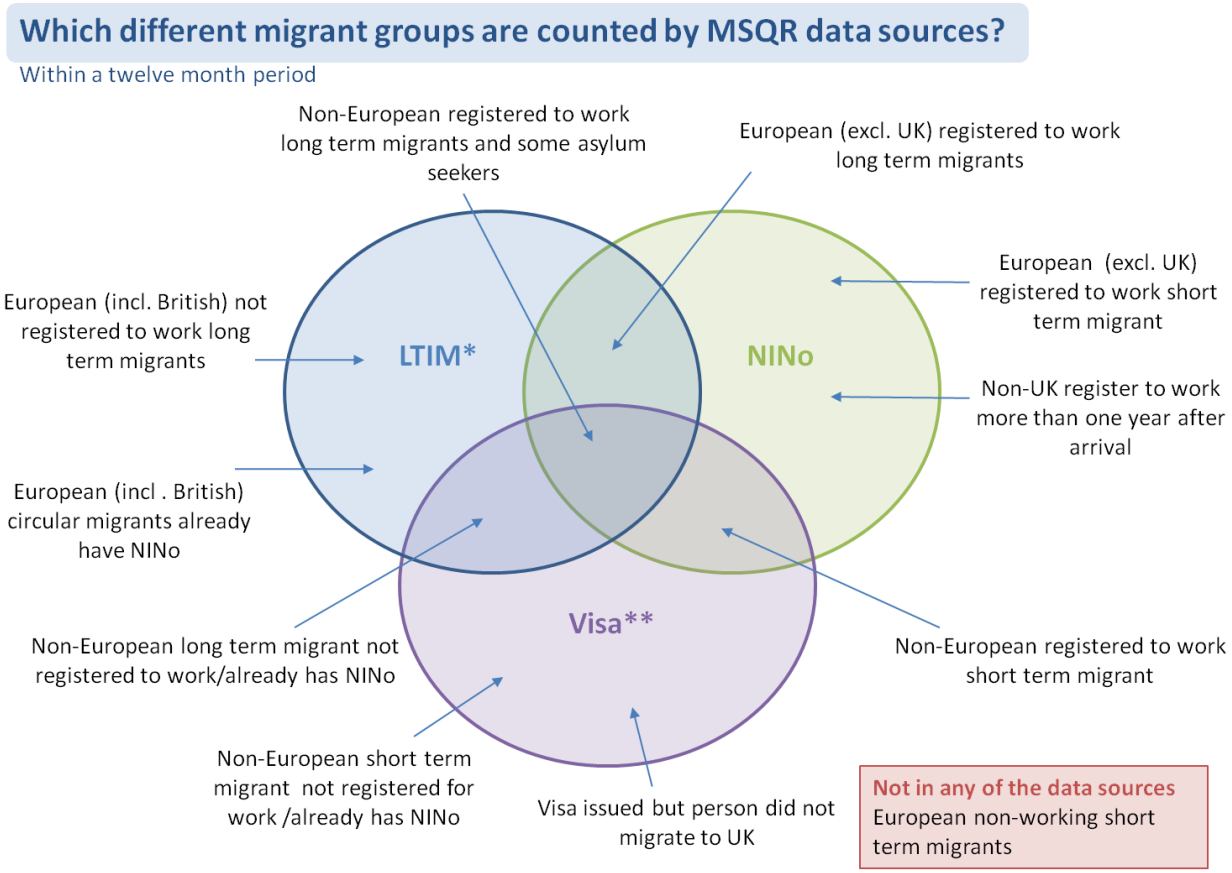
There is now much more interest in the characteristics of migrants who reside in the UK and the impact they have on the economy and society. There are sources of data that shed some light on this but these only go so far in meeting the needs of the public, media and policymakers. We are collaborating and data sharing across government to improve the information that is currently available to understand migration as described in our future work programme – International migration data and analysis: improving the evidence.

Two articles have now been published studying different characteristics of migrants using the currently available data:

- International migration and the changing nature of housing in England – what does the available evidence show? (25 May 2017)
- International immigration and the labour market, UK: 2016 (12 April 2017)

11 . Appendix: Data sources used in the Migration Statistics Quarterly Report

Figure 4: Comparison of coverage of MSQR data sources



Source: Office for National Statistics

Notes:

1. “European” includes migrants from European Economic Area (EEA) countries and Switzerland.
2. * LTIM records main reason for migrating but not all reasons, for example someone arriving as a student could go on to apply for a NINo in order to do some part-time work. In this example, LTIM would record a student and the student would also be counted in NINo registrations.
3. ** Visas excluding visas for visit or transit.

Table 1: Summary of datasets used in Migration Statistics Quarterly Report

Dataset	Provisional Long-Term International Migration (LTIM)

Data category	Flows
Producer	ONS
Release frequency	Provisional rolling annual estimates are released quarterly – they were first published in August 2010 and include overall immigration, emigration and net migration only. In February 2012, this was expanded to include citizenship and main reason for migration. Rolling annual data are used to ensure that estimates are sufficiently robust and to smooth the seasonality of the data.
Description	Estimates of total long-term international migration to and from the UK. International Passenger Survey (IPS) estimates are the prime source of data but they are supplemented with data on asylum seekers and people whose length of stay has changed from their original intentions. In addition they use a different data source for figures on the number of international migrants entering and leaving Northern Ireland. Figures for previous years were revised in November 2009. In addition the methodology for estimating flows from 2008 onwards is different to that used for earlier years. For further details please see Improving estimates of international migration in Northern Ireland, and between the UK and Republic of Ireland.
Geographic coverage	UK
Lowest geographic level	Local Authority
Underlying data sources	International Passenger Survey (IPS), Labour Force Survey (LFS), asylum seeker data from the Home Office, migration data from the Northern Ireland Statistics and Research Agency (NISRA).
Relevant definitions	Citizenship is defined according to the passport that IPS survey respondents state that they hold. It does not refer to any other passport (s) that migrants of multiple nationalities may hold.
Notes on quality	As they are based on a sample survey, IPS estimates of migration are subject to sampling error. To help the interpretation of the estimates we test the statistical significance (at the 5% significance level) of changes in the IPS migration estimates. LTIM figures are derived from a range of sources – survey and administrative – and exact sampling errors are not available. However, as the IPS estimates are the predominant component of LTIM then for the MSQR we consider a change in an LTIM estimate to be significant if the change for the underlying IPS estimate is significant. This affects the way the estimates are described in the text: • in cases where an LTIM estimate is not considered statistically significantly different from a year earlier, we indicate this • in cases where an LTIM estimate is considered statistically significantly different from a year earlier, we describe the change Note that these comparisons are only made where an equivalent LTIM value from a year earlier exists.

	We also produce final LTIM estimates. There may be small differences between the provisional and final LTIM estimates – these are explained in the International Migration – terms, definitions and frequently asked questions, published alongside the data.
Link to product and more information	LTIM summaries and publications and LTIM data tables (final) and LTIM latest provisional estimates .

Dataset	Provisional International Passenger Survey (IPS) estimates of long-term international migration
Data category	Flows
Producer	ONS
Release frequency	Quarterly
Description	This is the IPS component of international migration, so not the total picture – see notes on quality. Provisional rolling annual IPS estimates of international migration inflows, outflows and net flows are released quarterly, and are broken down by citizenship (covered in the MSQR) and reason for migration. ONS also produces final IPS estimates, which are used in the final Long-Term International Migration data. There may be small differences between the provisional and final IPS estimates – these are explained in the LTIM Frequently Asked Questions and Background Notes, published alongside the data. Final IPS tables on citizenship, country of birth and country of last or next residence were produced for the first time on the new country groupings in November 2014.
Geographic coverage	UK
Lowest geographic level	Country or region
Underlying data sources	IPS
Relevant definitions	Citizenship is defined according to the passport survey respondents state that they hold. It does not refer to any other passport(s) that migrants of multiple nationalities may hold. The IPS estimates are based on people moving into or out of the UK for a period of at least 12 months, based on their stated intentions when they are surveyed.
Notes on quality	IPS estimates are not a complete measure as they do not include asylum seekers and people whose intended length of stay has changed from their original intentions. Compared with the LTIM data they also use a different data source for figures on the number of international migrants entering and leaving Northern Ireland. As they are based on a sample survey, IPS estimates of migration are subject to sampling error. To help the interpretation of the estimates we test the statistical significance (at the 5% significance level) of changes in the IPS migration estimates. This affects the way the estimates are described in the MSQR: • in cases where an IPS estimate is not statistically significantly different from a year earlier, we usually indicate this; however, in cases where the difference between the two estimated values is very small we may alternatively describe them as “similar” • in cases where an IPS estimate is statistically significantly different from a year earlier, we describe the change
Link to product and more information	The latest IPS data tables can be found alongside the LTIM tables.

Dataset	Population by country of birth and nationality from the Annual Population Survey (APS)
Data category	Stocks
Producer	ONS
Release frequency	Annually (August)
Description	Estimates of population by country of birth and nationality, based on responses to the APS. The APS is made up of Wave 1 and 5 of the Labour Force Survey (LFS) plus annual sample boosts which are included primarily to enhance the geographical coverage.
Geographic coverage	UK
Lowest geographic level	Local Authority
Underlying data sources	APS
Relevant definitions	Country of birth and nationality are as stated by the respondents to the APS.
Notes on quality	APS does not sample communal establishments. As they are based on a sample survey, APS estimates are subject to sampling error. To help the interpretation of the estimates ONS publishes confidence intervals alongside the estimates.
Links to product and more information	Population by country of birth and nationality Data for Scottish council areas, published by NRS: National Records of Scotland population by country of birth and nationality Further information on interpretation and comparison of international migration flows and stocks data sources is available in the following article: Note on the differences between Long-Term International Migration flows derived from the International Passenger Survey, and estimates of the population obtained from the Annual Population Survey.

Dataset	National Insurance numbers (NINos) allocated to adult overseas nationals entering the UK
Data category	Inflows and Registrations
Producer	Department for Work and Pensions (DWP)
Release frequency	Quarterly
Description	A measure of NINos registered to adult non-UK nationals entering the UK.
Geographic coverage	UK
Lowest geographic level	Local authority
Underlying data sources	National Insurance Registration System (NIRS)
Relevant definitions	NINos are required by non-UK nationals for employment (including self-employment), benefit and tax credit purposes in the UK.
Notes on quality	Comprehensive measure of adult overseas nationals entering the UK and registering for a NINo irrespective of length of stay. The series includes short-term migrants but excludes migrants who do not register for a NINo (such as those studying, or dependants).On 19 January 2017, the Office for Statistics Regulation (OSR) published an Assessment Report covering DWP statistics on NINos allocated to adult overseas nationals and nationality at point of NINo registration of DWP working age benefit recipients (NINo benefit claimants), for compliance against the Code of Practice for Official Statistics. OSR judgement is that the statistics published should have their National Statistics status temporarily suspended until work to improve their limited supporting guidance and overall public value is undertaken. The full assessment can be found on the UK Statistics Authority website: report on the reassessment of the NINo statistics. The statistics refer to date of NINo registration, not date of arrival in the UK.
Link to product and more information	National Insurance number allocations to adult overseas nationals entering the UK

Dataset	Labour Force Survey (LFS)
Data category	Stocks
Producer	ONS
Release frequency	Monthly (rolling three-month average time period)
Description	Provides estimates for those aged 16 and over on various aspects of the UK's labour market activity. For example, employment, unemployment, economic inactivity and redundancies.
Geographic coverage	UK
Lowest geographic level	For employment, unemployment and economic inactivity, estimates are available for countries of the UK. Further breakdown to regions and local authorities are available for England and Wales, and council areas for Scotland.
Underlying data sources	Labour Force Survey
Relevant definitions	Economically inactive people are those without a job who have not actively sought work in the last four weeks, and/or are not available to start work in the next two weeks. Those who are unemployed have actively sought work in the last four weeks and are available or waiting to start a job in the next two weeks.
Notes on quality	ONS does not recommend making single month comparisons. The estimates are designed to compare non-overlapping three-month average time periods.
Link to product and more information	Labour market statistics Further information on interpretation and comparison of international migration flows and stocks data sources is available in the following article: Note on the differences between Long-Term International Migration flows derived from the International Passenger Survey, and estimates of the population obtained from the Annual Population Survey.

12 . Further links

- International Passenger Survey Quality and Methodology Information Report
- International Passenger Survey Methodology
- Long-Term International Migration Methodology Documents
- Migration Statistics Quarterly Report
- Long-Term International Migration Data Tables
- International Migration table of contents