

INTERNATIONAL MIGRATION

Introduction

This guide provides an overview of the international migration data that is available in the Office for National Statistics (ONS) Longitudinal Study (LS). It:

- describes the sources of the international migration data for England and Wales.
- describes the sources of this data for the LS.
- compares how they differ from each other and the implications of these differences.
- describes the types of analysis that can be done and methods of dealing with international data in the LS.

The LS is a dynamic 1% sample of the whole population of England and Wales, including those living in non-private households. The initial sample was drawn from the 1971 Census on the basis of four birth dates, and study members' census records have been linked every 10 years up to the 2011 Census¹. New LS members enter the study through birth or immigration, and existing members leave through death or emigration, although their data are retained. Since births, deaths, immigrations and emigrations are linked to the LS every year, it reflects the structure of the England and Wales population at any point in time. Births and deaths have to be registered by law in the UK and therefore very few are missed by the current registration system from which the LS captures its sample, but this is not the case for immigrations and emigrations. International migrations are not captured through a formal registration system. Instead, several different sources (explained later) are used to estimate the numbers of immigrants entering/emigrants leaving the UK for its annual population figures. However the LS sample only uses data from the National Health Service Central Register (NHSCR) patient registrations to estimate migration into and out of England and Wales – the UK annual migration figures are NOT used for the LS.

This guide has been developed because the quality of international migration data in the LS is difficult to estimate. Because registration of international migration is not legally required, and the sources used as the basis for estimating annual international migration data for England and Wales are different to those used to provide these figures for the LS, there is a numerator denominator mismatch and normal quality measures such as sampling fractions are meaningless.

¹ 2021 Census records will be linked to sample members' records in the latter half of 2023.

What is an international migrant?

The UN definition of an international migrant that is used for national migration statistics and population estimates 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. From the perspective of the country of departure, the person will be a long-term emigrant and from that of the country of arrival, the person will be a long-term immigrant.”²

The UN defines the country of usual residence as:

“A place within a country where a person lives, that is to say, the place in which he or she has a place to live where he or she normally spends the daily period of rest.”²

In contrast, the NHS has different definitions for an immigrant and emigrant. An immigrant is a person who enters England and Wales from another country and registers with an NHS GP for the first time. An emigrant is a person who leaves England and Wales for over three months, a definition that originates in the Department for Work and Pensions (DWP), where it is used to update benefits and pensions payments information.

NB: for the purposes of NHSCR, England and Wales does not include the Isle of Man or the Channel Islands. Scotland and Northern Ireland have their own NHS registers and anyone leaving from or going to these countries is treated as an international migrant by NHSCR.

Immigration and emigration data for the LS is drawn from NHSCR patient registration notifications. These migration notifications are used to ensure that the relevant Primary Care Support Services (PCSS) use the correct GP patient lists in the administration of the payments that they make to GP practices.

Notifications of emigrations at the NHSCR comprise two categories:

- Notifications from the DWP of where pensions are to be paid abroad or HMRC if family allowances and other benefits need to be cancelled.
- The return of medical cards, diplomatic notifications, or notifications from the armed services.

Immigrations are notified to the NHSCR when a migrant first registers with a GP. This means that LS members will be picked up either when they first register with a GP and acquire an NHS number, or when they de-register from the NHS prior to leaving England and Wales. However, neither registration with the NHS nor deregistration from the NHS is compulsory. The information is linked to the LS on an annual basis with a two-year delay, see the sections on the IMMIG (Immigrations), EMBR (Embarkations), REEN (Re-entries) and ENLS (Enlistments) data files for more information.

² UN Department of Economic and Social Affairs (1998) *Recommendations on Statistics of International Migration, Revision 1. Statistical Papers Series M, No.58, Rev 1*, pp10, New York: United Nations.

An immigrant is eligible to register with the NHS from the time they arrive in England or Wales. If an immigrant registers with GP as a temporary resident³, NHSCR will not be notified. Only when an immigrant states that they are staying for more than three months will an application to join a GP's list be completed and passed onto NHSCR, and this is when they will be registered on the system, and so have the possibility of becoming an LS member.

Once a person leaves the NHS the NHSCR entry is marked as cancelled. An embarkation flag is only entered on the record at NHSCR when confirmation of emigration has been received, and it is only then that exit from the LS is noted. The time between the NHSCR cancellation and embarkation notification takes a minimum of three months but there is no maximum time limit. Reasons for cancellation include a patient:

- informing their GP that they are leaving: exit from the LS will only occur if they do not then consult their GP within three months of informing them that they are leaving or register with another GP.
- not consulting their GP for at least three years if aged less than 75 and for at least 12 months if aged 75 and over: this should result in a letter being sent to the patient's last known address, and if the person is no longer there or does not reply they may be cancelled from the doctor's list after a six-month period.

³ they only expect to be staying in England or Wales for 24 hours to three months.

The current status of international migration data in the LS

International migration figures are currently available (in November 2021) for the LS up to and including March 2019. Ideally the LS should contain 1% of the England and Wales international migration figures but there is doubt as to whether they do. The current LS migration figures by gender are given in Tables 1 (immigration) and 2 (emigration) of the associated Excel file.

Owing to the delay in entering international migration details onto the NHSCR database, migration events for LS members are frequently captured long after those events have occurred. The date of migration is likely to be the correct date, especially for emigration, but the LS member's record may not be created and flagged (for immigrants) or updated (for emigrants) until many years after the event. The causes of these delays are detailed below.

Immigrants

Delays in capturing new LS members migrating into England and Wales are dependent on how soon after entry an immigrant registers with a GP and so joins the NHS. Registration with a GP may be immediate or at any time after entry. Although date of entry to the country is asked about in the GP registration form, it is not cross-checked against other possible sources of data. Therefore, the entry date may be inaccurate. Delays may also occur if the immigrant is healthy and does not register until they require the services of a doctor. Families with children and the elderly tend to register sooner.

Emigrants

Where LS members are emigrating from the country there are several different types of notification sent to the NHSCR. Some types arrive faster than others and in some cases there is no notification at all. Notification methods are as follows:

- Notifications from the DWP are received by NHSCR when people paying National Insurance or in receipt of benefits or pensions are known to be leaving the country for over three months⁴. These are the main source of embarkation data. They are entered on the NHSCR database but are not considered an embarkation until they have been confirmed (three months after notification) by the relevant Primary Care Support Services (PCSS)⁵.
- Medical card return – this has decreased over time because people are no longer issued with a physical medical card.
- Notifications from HMRC are received by NHSCR when individuals in receipt of child benefit report that they will be leaving the country for eight weeks or more. They are dealt with in the same way as notifications from the DWP.

⁴ People are legally obliged to tell the appropriate benefits agency (e.g. the Pension Service for pension payments, the Disability Service Centre if they are in receipt of Disability Living Allowance) if they are planning to go overseas for any length of time.

⁵ PCSS will confirm an embarkation if the individual has not consulted their GP within the three-month confirmation period.

- Notifications of diplomats leaving the country – these used to be received by NHSCR and updated immediately with the embarkation date, but since 2008 NHSCR has stopped recording these notifications.
- Moves to Scotland or Northern Ireland – when a person moves from England and Wales to Scotland or Northern Ireland and registers with a GP, the General Register Office of Scotland or the Northern Ireland Statistics Research Agency (NISRA) notifies the NHSCR. The individual is then flagged as going to Scotland or Northern Ireland.

Sources of international migration data used for England and Wales national estimates

This section outlines the sources of international migration data that are used to generate the official migration estimates that are published by the Office for National Statistics.

Up to March 2020 official international migration figures for England and Wales were based on several different sources, the main one being the International Passenger Survey (IPS)⁶. Other sources (though less important) are Home Office estimates of asylum seekers, visitor switches identified by the IPS⁷, the Northern Ireland migration flows from NISRA and NHSCR data on flows between England and Wales and Scotland and Northern Ireland.

International Passenger Survey (IPS)

The IPS is carried out by ONS. It is a questionnaire survey of a random sample of passengers at all major airports, seaports and the Channel Tunnel (Folkestone and St Pancras). It does not include passengers travelling across the land border between the Republic of Ireland and Northern Ireland or passengers travelling on international cruises, and smaller airports and seaports are not covered. International passengers do not include those travelling from or to the Republic of Ireland, the Channel Islands or the Isle of Man as the termini at which they arrive are considered domestic. Only small numbers of international passengers are migrants, of the approximately 800,000 IPS interviews carried out each year 3,000 - 4,000 interviewees are identified as long-term international migrants⁸. However, this is decreasing as the volume of international passengers passing through UK ports increases, making it less likely for long-term migrants to be sampled.

The IPS has a set of questions that are only asked of international migrants. Since the IPS is a sample survey, the figures are weighted to cover whether the migrants are arrivals or departures, whether they were interviewed on a weekday or weekend, and the airport, seaport or terminal where that interview occurred.

The Labour Force Survey

The LFS provides data on the geographical distribution of long-term immigrants, and this is used for the calibration of IPS inflow data and allocation of the IPS figures to the different nations of the UK.

Home Office immigration statistics

Home Office immigration statistics provide data on asylum seekers and their dependents. It also supplies ONS with estimates of the number of asylum seekers and other visitor switches. These will not be picked up by the IPS because they do not initially state that they intend to remain in the UK for

⁶ In March 2020, the IPS was suspended because of the impact of COVID-19 pandemic on survey operations. It was resumed in January 2021.

⁷ A person who intends to enter (or leave) the UK for a period of less than 12 months, but actually stays (or stays away) for longer than 12 months.

⁸ ONS (2018) International Passenger Survey: quality information in relation to migration flows. ONS: Newport

12 months or more. Only after entering the country do they apply to the Home Office for an extension of stay for a year or more. If an extension is granted, they will be included in the visitor switches figures, which are then used by ONS to adjust the international immigration figures. Since January 2013, the Home Office has provided ONS with information on enforced removals of migrants who have never claimed asylum.

Irish adjustments

Migration to and from the Republic of Ireland is estimated using the Irish Labour Force Survey, data from NHSCR, and the Republic of Ireland Census and Country of Residence Survey. The figures are agreed between the Irish Central Statistics Office and ONS before being used in the calculation of UK international migration estimates. It also provides estimates of migration of all citizenships between the UK and the Irish Republic from 1991 – 2007.

Adjustments for migration flows from Scotland and Northern Ireland

To calculate migration into England and Wales further adjustments to migration flows are made by using NHSCR figures and notifications of people moving to or from Scotland and Northern Ireland and registering with a GP.

The Future of international migration estimates

ONS is currently researching new sources and methods for producing the international migration estimates. This research was accelerated when the IPS was suspended in May 2020 due to the coronavirus pandemic. Research has identified a range of administrative data that could be used, and two sources have shown the greatest potential for measuring long-term immigration and emigration in the future:

- Department for Work and Pensions (DWP) Registration and Population Interaction Database (RAPID)
- Border data from the Home Office exit checks dataset

RAPID⁹

This dataset is used by the DWP to provide a single dataset to view all the interactions that individuals may have across the systems in DWP, HMRC and local authorities. The interactions include benefits (e.g. housing, child), disability living allowances, employment, self-employment and in-work benefit. RAPID holds a record of everyone who has National Insurance number. Although RAPID was not set up to measure international migration, non-UK nationals can be identified using the Migrant Worker Scan dataset. This dataset records information on overseas nationals registering for a National Insurance number from 1975 onwards. It also collects information on their self-reported date of first

⁹ For more information on using RAPID to measure international migration see: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/methodologies/methodsformeasuringinternationalmigrationusingrapidadministrativedata>.

arrival, their National Insurance number registration date, their nationality at the time of their application and their previous country of residence.

Adjustments need to be made for inflow and outflow of students who may not work alongside their studies (and so will not be picked up in RAPID). The inflow adjustment is made using Higher Education Statistics Agency (HESA) data on the number of students enrolling in first year courses, and outflow adjustment is based on the method that is used as part of the IPS adjustment.

Home Office border data and international migration¹⁰

Data collected at the UK border by the Home Office could provide a direct measure of the movement of people in to and out of the UK. Parts of these border data make up part of a Home Office administrative dataset. However, border data currently only includes nationals from non-European Economic Area (non-EEA) countries and have only been collected from April 2015. Therefore, they can only be used for migration adjustments from April 2017. Furthermore, the data may not give a complete picture of border crossings because some people will enter or leave the UK through Ireland, which is not captured in the border data.

Summary

This section has outlined the sources of international migration data that are currently used to generate the official migration estimates that are published by the Office for National Statistics. It has also provided information on the likely future sources of these data. Both these current sources and future sources are very different to the sources used to identify which LS members enter and leave the ONS LS sample (see pages 4-5). It is for this reason that there may be discrepancies between the official data on migration to and from England and Wales and the number of immigrants and emigrants in the LS sample.

¹⁰ For more information on using Home Office border data to estimate international migration see <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/internationalmigrationdevelopingourapproachforproducingadminbasedmigrationestimates/2021-04-16>.

How representative are international migration data in the LS?

The LS migration data is taken from the NHSCR records. This means that there are problems with defining whether the LS is a representative sample of international migration, and also the population that it represents. Each set of migration data has its own shortcomings, with some events being captured more successfully by NHSCR than by the national statistics, and vice versa. NHSCR may be a slightly better source of immigrant data, but there is a significant undercount of young men, who the IPS shows are the main migratory group. However, NHSCR is a worse source of emigrant data compared to national statistics.

The national migration figures and the NHSCR migration figures differ with respect to the types of persons who will be counted. For example, NHSCR data from which the LS sample is taken is likely to miss immigrants found in the national data who are:

- Long-term visitors, especially those from the USA working in the UK who have private health insurance.
- Immigrants from the Republic of Ireland who expect to return to the Republic and do not bother to register with a GP while in the UK.
- European workers who are travelling in and out of the UK and whose countries of origin have reciprocal arrangements with the UK National Health Service¹¹.
- Immigrants who emigrate out of England and Wales after at least one year who have not registered with a GP during their stay in the country.
- Young, healthy people who do not register with a GP.

However, NHSCR is likely to pick up the following types of immigrant who will be missed in the national figures:

- Visitors who are here for over three months but for less than one year and who register with a GP.
- Illegal immigrants who register with a doctor – no proof of entry must be produced, although some of these will be accounted for by Home Office notified “visitor switches”.
- Duplicate registrations – these can be people registering with a GP who were previously resident in the UK and have emigrated and then returned but do not declare that they have a previous NHS registration. Or they can be immigrants who register twice with a GP using different names.

Currently it is not possible to measure the representativeness of the LS by comparing it with a reliable migration source, and it is not possible to weight the data because there is no “gold standard” to provide a basis for calculating weights.

¹¹ This discrepancy should have decreased since 31st December 2020. Since then, EU citizens who were not living lawfully in the UK on or prior to that date needed to register with a GP.

International migration in the LS

Information on international migration is held in several different tables in the LS. Each contains information for that event. Data from the different tables can be linked by the CORENO, the unique identifier of an LS member. In two of the tables an LS member may have more than one record - for example, a sample member may have left (embarkation) and re-entered England and Wales, and hence the LS, several times, in which case they will have more than one record in the Embarkations and Re-entries tables.

The table below lists the four tables that hold the majority of the international migration data in the LS (EMBR, IMMG, REEN, ENLS). The variables contained in these tables can be seen in the Data Dictionary. The LS member files (ME71, ME81, ME91, ME01 and ME11) also contain variables that can supplement the information in these four tables, for example country of birth, year of arrival in the UK (1971 and 2011 only), month of arrival in the UK (2011 only), and months since arrival in England and Wales (2011 only).

Table name	Table description
ME71, ME81, ME91, ME01, ME11	LS Member files (one for each census year)
EMBR	Embarkations (deregistration with NHS)
IMMG	Immigrations (registration with NHS)
REEN	Re-entries (re-registration with NHS)
ENLS	Enlistment (deregistration with the NHS)

The following sections give information on the period that the data are available for, whether there are multiple records, what the unique identifier is, how the data are linked, and a brief description of the data, including important variables.

Immigration (IMMG)

Years for which data are available: Census Day 1971 to March 2019.

Can the LS member have more than one record: No

Key identifier variables: CORENO

Means of linkage: Annual date of birth search of the immigration flags at NHSCR

Source: GP registration (NHSCR)

Basic description:

Immigration is an entry event to the LS if the individual was born on one of the four LS birthdays. If a migrant's date of birth in their GP registration is an LS birthday they are flagged at NHSCR and returned to ONS Titchfield, given an LS identification number and added to the LS. Some migrants may already have an LS record because they have an LS birthday and were enumerated in a census prior to registering with a GP. In these cases, their record will already be flagged at NHSCR. NHSCR will add their LS identification to the registration which will be sent to the LS Development Team (Titchfield) to be added to their entry in the LS database. A proportion of these 'matches' will not be successful because the date of birth on the GP registration form differs from that on the census form.

For individuals who are successfully matched to the LS (i.e. they returned a census before registering with a GP), a new record is created in IMMG in the LS database. In cases where the individual has not been matched to a census, a new record is created for them in the CORE1 and IMMG tables.

Important variables in the Immigrations table

Variable	Label + comments
CORENO	LS Member unique identifier
EDATEIR	Event date
EVDYBIR	Day of entry
EVMTBIR	Month of entry
EVYRBIR	Year of entry

Other variables available in IMMG include geographic classifications for usual address. Although the IMMG data file does not contain information on the country that the LS member came from, if they have subsequently completed a Census form, then researchers will have access to information on the LS member's country of birth.¹²

Data quality

Migrants to England and Wales may not register with a GP until they need to see a doctor. Although the GP registration does capture the date of entry to the country, it is not cross-checked against other possible data sources, and therefore the date of entry in the LS may be inaccurate. A further data quality issue is related to duplicate registrations. These can occur if an individual registering with a GP

¹² POB7 from ME71, COB8 from ME81, COB9 from ME91, COBP0 from ME01, COBP11 from ME11.

was previously resident in the UK and emigrated and did not declare that they had a previous NHS registration when they returned to the UK. Alternatively, an immigrant may register twice with a GP under different names. ONS works hard to identify duplicate records.

Number of events

Table 3: Number of immigrations to the LS (1971-2019) [see spreadsheet- Table 3]

Re-entries (REEN)

Years for which data are available: Census Day 1971 to March 2018.

Can the LS member have more than one record: Yes

Key identifier variables: CORENO + EVENTORD

Means of linkage: Annual date of birth search of the re-entry flags at NHSCR

Source: NHSCR

Basic description:

If an individual is already registered at NHSCR, any subsequent GP registrations are called 're-entries'. Therefore, re-entries are not LS entry events. LS sample members are flagged (i.e. marked as LS members) at the NHSCR, and when a new registration with a GP in England or Wales is recorded at NHSCR, the re-entry is sent to the LS Development Team and an entry in the REEN table is added to the LS member's record. Re-entry events are also made for LS members who are members of the Armed Forces, when they are discharged and move back into the NHS.

Important variables in the Re-entries (REEN) table

Variable	Label + comments
CORENO	LS Member unique identifier
EVENTORD	Event order
EDATERS	Event date
EVDYFRS	Event day (occurrence)
EVMTFRS	Event month (occurrence)
EVYRFRS	Event year (occurrence)

Analysis issues

Individuals can have more than one re-entry event and therefore it is important to ensure that entries for an individual are sorted by the event order variable eventord.

Data quality

Similarly to immigrations, individuals returning to live in England and Wales may not register with a GP until they need to see a doctor, and although the GP registration does capture the date of entry to the country, it is not cross-checked against other possible data sources. This means that the date of entry in the LS may be inaccurate.

Number of events

Table 4: Number of re-entries to the LS (1971-2018) [see spreadsheet- Table 4]

Embarkations (EMBR)

Years for which data are available: Census Day 1971 to March 2019.

Can the LS member have more than one record: Yes

Key identifier variables: CORENO + EVENTORD

Means of linkage: Annual date of birth search of the embarkation flags at NHSCR

Source: NHSCR

Basic description:

Embarkations are an LS exit event. There are three types of embarkation notification at NHSCR:

- i. Notifications from DWP where pensions are to be paid abroad, or HMRC if family allowances and other benefits need to be cancelled.
- ii. Return of medical cards, diplomatic notifications, notifications from the armed services.
- iii. Notifications from General Register Office Scotland or NISRA that an individual has registered with a GP in Scotland or Northern Ireland respectively.

The first type of notification is not confirmed as an embarkation event until NHSCR receives confirmation of an embarkation from the relevant PCSS. The second type is added as an embarkation event as soon as it is received at NHSCR. The third type is added as an embarkation event when notification is received from the Scottish General Register Office or NISRA.

Once an embarkation event has been confirmed at NHSCR, if the individual is flagged as a LS member, their LS identification is added to the record and sent to the LS Development Team at ONS Titchfield. For individuals who are successfully matched to the LS, a new record is created in EMBR in the LS database.

Important variables in the Embarkations table

Variable	Label + comments
CORENO	LS Member unique identifier
EVENTORD	Event order
EDATEEM	Event date
EVDYEEM	Event day (occurrence)
EVMTEEM	Event month (occurrence)
EVYREEM	Event year (occurrence)

Analysis issues

Individuals can have more than one embarkation event and therefore it is important to ensure that embarkation events for an individual are sorted by the event order variable eventord.

Data quality

The number of emigrations is likely to be underestimated because it is no statutory obligation to declare an embarkation or for an individual to inform their GP that they will be leaving the country. It is estimated that only 50% embarkations are notified to the NHSCR. Also, because notifications

received from DWP or HMRC need to be confirmed by deregistration from the NHS (by informing the GP or returning a medical card), the date of emigration may not be updated until many years after the event. This means that alternative methods may need to be used to proxy an embarkation (see “Methods of dealing with international migration data in the LS” below).

Number of events

Table 5: Number of embarkations to the LS (1971-2019) [see spreadsheet- Table 5]

Enlistments into the Armed Forces (ENLS)

Years for which data are available: Census Day 1971 to March 2012.

Can the LS member have more than one record: Yes

Key identifier variables: CORENO + EVENTORD

Means of linkage: Annual date of birth search of the enlistment flags at NHSCR

Source: NHSCR

Basic description:

Enlistments are an LS exit event. When an individual joins the Armed Forces, notification is sent to the NHSCR. If the individual is flagged as a LS member, their LS identification is added to the record and sent to the LS Development Team at ONS Titchfield. For individuals who are successfully matched to the LS, a new record is created in ENLS in the LS database. On leaving the Armed Forces, if an individual is matched to an LS record, a record is created for them in Re-entries (REEN) table (see page 12).

Important variables in the Embarkations table

Variable	Label + comments
CORENO	LS Member unique identifier
EVENTORD	Event order
EDATEEL	Event date
EVDYDEL	Event day (occurrence)
EVMTDEL	Event month (occurrence)
EVYRDEL	Event year (occurrence)

Analysis issues

Individuals can have more than one enlistment event and therefore it is important to ensure that enlistments for an individual are sorted by the event order variable eventord.

Data quality

Data quality for enlistments is high, however, they have only been updated to 2012.

Number of events

Table 6: Number of enlistments to the LS (1971-2012) [see spreadsheet- Table 6]

Methods of dealing with international migration data and the LS

The method used to deal with migration data when using the LS will depend on the type of analysis being carried out. For some types of study, LS migrant data can be excluded, but for others its inclusion is essential.

The proportion of the LS sample made up of immigrants and emigrants has changed over time. Between the first two LS censuses (1971-81), 3.30% of the LS members who returned the 1971 Census left through emigration, and 7.0% entered through immigration. In contrast, between the final two LS censuses (2001-11) 2.5% left through emigration and 14.9% entered through immigration¹³ (see Table 7 in the associated Excel spreadsheet).

Longitudinal cohort studies

For cohort studies, particularly where a person years at risk approach is used, immigrants are not a problem because the population is defined at a single-entry point in the study. However, emigrants do comprise a problem because they may leave and then re-enter the country, or they may be present as unconfirmed cancellations at NHSCR and so not confirmed as emigrants. In these studies, the person years will be calculated upto the end point (e.g. death) or the end of the study if still alive. If an LS member emigrates and then re-enters the LS, the person-years at risk are calculated from the entry into the study until their embarkation and then from their re-entry to death, another embarkation or the end of the study.

If the study includes more than one census point and there is no direct evidence of emigration, but the LS member is not present at the next census and has not contributed any events, they are considered "lost to follow-up". In many cases, members will be exited from the study just prior to the census where they were found to be missing, but this may be varied for different purposes. By doing this, the LS member only contributes person-years at risk to the denominator while they are known to be alive and probably still in the country.

Studies examining change, census to census

If a study is examining LS data where the effects of change from census to census are the focus, e.g. internal migration, housing or employment change, then the sample of LS members used must represent all the censuses involved. This means that LS members cannot be immigrants or emigrants. These types of entries and exits can be excluded using the HISCEN variables and TRACE, which denote the LS member's presence at a census and their tracing history.

¹³ This increase in immigrations in the 2001-11 period is likely associated with the expansion of the EU to include Malta, Cyprus, Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Slovenia and Hungary (May 2004); Bulgaria and Romania (January 2007).

Studies using a dynamic population sample

For studies using a dynamic population sample, immigrations and emigrations must be used when rolling the population forward. In these cases all immigrations are used, but researchers usually restrict exits to the first one only and do not allow re-entries. The reason for this is that delays in reporting embarkations mean that re-entry markers are found for LS members where no previous embarkation is shown. There are also cases of more than one emigration, but without a re-entry inbetween. Restricting the emigration to one emigration and no re-entries is the only solution.

Conclusion

International migration data in the LS is unreliable. Compared to the England and Wales migration figures, the LS over-samples immigrants and under-samples emigrants. However, because of the numerator/ denominator mismatch caused by the LS sampling from NHSCR rather than from national figures, it is not possible to quantify the unreliability.