Statistical bulletin

Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2017

National and subnational mid-year population estimates for the UK and its constituent countries by administrative area, age, sex and components of population change.

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Correction

2 July 2018 13:30

A correction has been made to the number of emigrants in the year to mid-2017 mentioned in section 5 of the release, this has been corrected from “342,00” to “342,000”. This was due to a small error when drafting the release. You can see the original content in the superseded version. We apologise for any inconvenience.

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1 . Main points

- The population of the UK at 30 June 2017 exceeded 66 million people (66,040,229), an increase of 392,000 people since mid-2016.
- This growth rate (0.6%) is the lowest since mid-2004.
- 41% of the population growth occurred from natural change (births minus deaths), 59% through net international migration and an increase of 2,700 people in the armed forces population based in the UK.
- Nearly 12 million UK residents were aged 65 years and over in mid-2017, or 18.2% of the population, with the large 1947-born cohort now being aged 70 years.
- A decrease in net international migration in mid-2017 has affected the rate of population growth in some places more than others, with England's growth rate decreasing more than the other countries of the UK (to 0.64%), and London's rate nearly halving to 0.63%.

2 . Statistician's comment

"This is the lowest annual population growth since 2004 due to a fall in net migration, fewer births and more deaths than previously seen. The effect is most pronounced in London and other areas that have seen high levels of immigration in recent years. Nevertheless, the population is still growing faster than at any time since the post war 'baby boom' and the expansion of the EU in 2004."

Neil Park, Head of Population Estimates Unit, Office for National Statistics

3 . Things you need to know about this release

This release combines the first release of national and subnational population estimates for England and Wales for mid-2017 with those of Scotland, and Northern Ireland to provide a picture of the UK. This statistical bulletin also covers the mid-2017 internal migration estimates for England and Wales, previously covered in a separate bulletin.

These are the official population estimates for the UK as at 30 June 2017 and therefore reflect the size of the usually resident UK population a year on from the EU referendum (23 June 2016). They are based on the census and are updated annually to account for population change during the period from 1 July to 30 June. The two main contributors to population change are natural change (births minus deaths) and net migration (the difference between long-term moves into and out of the UK or local areas). If you're looking for a different kind of population data, a guide to what else may be of interest is available in the Related statistics section.

Three main changes have occurred between this release and June 2017's mid-2016 release:

- internal migration methods have changed, to better distribute people leaving higher education across England and Wales; and to utilise a new dataset (the Personal Demographic Service) as a replacement for the National Health Service Central Register (NHSCR) which is no longer available

- improvements to the method for estimating local authority level international emigration and the movements of foreign armed forces dependents, first incorporated in the March 2018 release of the mid-2012 to mid-2016 back-series, were also used to produce mid-2017 data

- some of the administrative data used in estimating international immigration to local authority areas in England and Wales were not available at the time of production of the mid-2017 population estimates, requiring the use of averaged local authority distributions from the previous three years

Further information can be found in the Quality and Methodology Information (QMI) reports for population estimates and for internal migration estimates, and in the Methodology Guide.

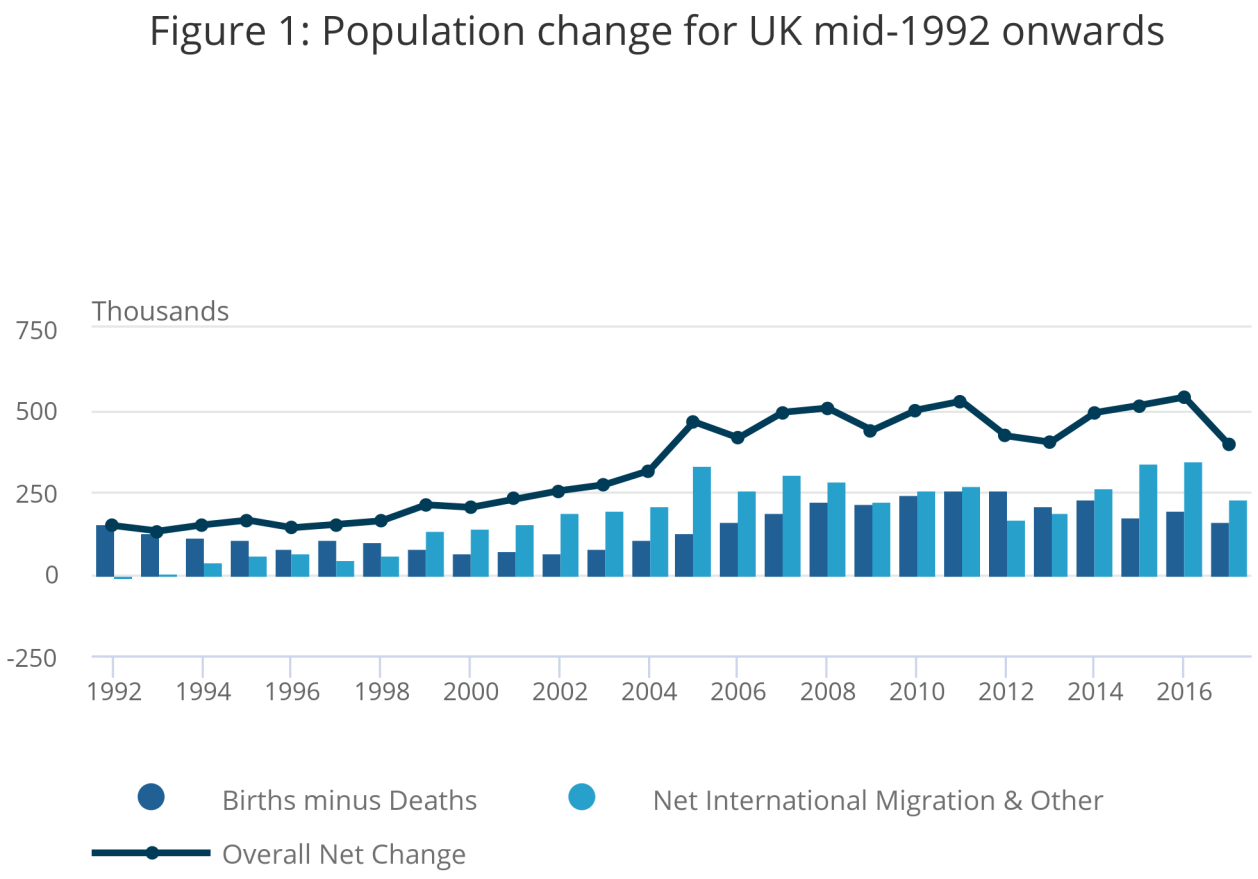
4 . UK population reaches 66 million

In mid-2017 the population of the UK was just over 66 million (66,040,229 with a confidence interval of +/- 0.2%). In the year to mid-2017 the population of the UK increased by 0.6%, or 392,000 people. The year to mid-2016 had the highest population growth, by number of people, since mid-1948 (538,000). While the rate of population growth in the year to mid-2017 was slower than in recent years it remains above that seen in the period before 2004.

Figure 1 below shows that population growth in the period since 2005 varied between 400,000 and 540,000 per year. Figure 1 also splits population change into natural change (births minus deaths), net international migration (immigration minus emigration) and other change, which at the national level reflects changes due to armed forces personnel moving into or out of the UK. This shows that international migration remains the largest component of population change. Overall, natural change accounted for 41% of the population change, net international migration for 59%; other changes also account for around 1%.

In addition, Figure 1 shows that the reduction in the level of population growth is driven by lower levels of net international migration compared to recent years and the lowest level of natural change since mid-2006. The lower level of net international migration is driven by both more people leaving the UK (emigration up 9%) and fewer people arriving in the UK (immigration down 12%) while the reduction in natural change is due to both fewer births and more deaths.

Figure 1: Population change for UK mid-1992 onwards



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

Notes:

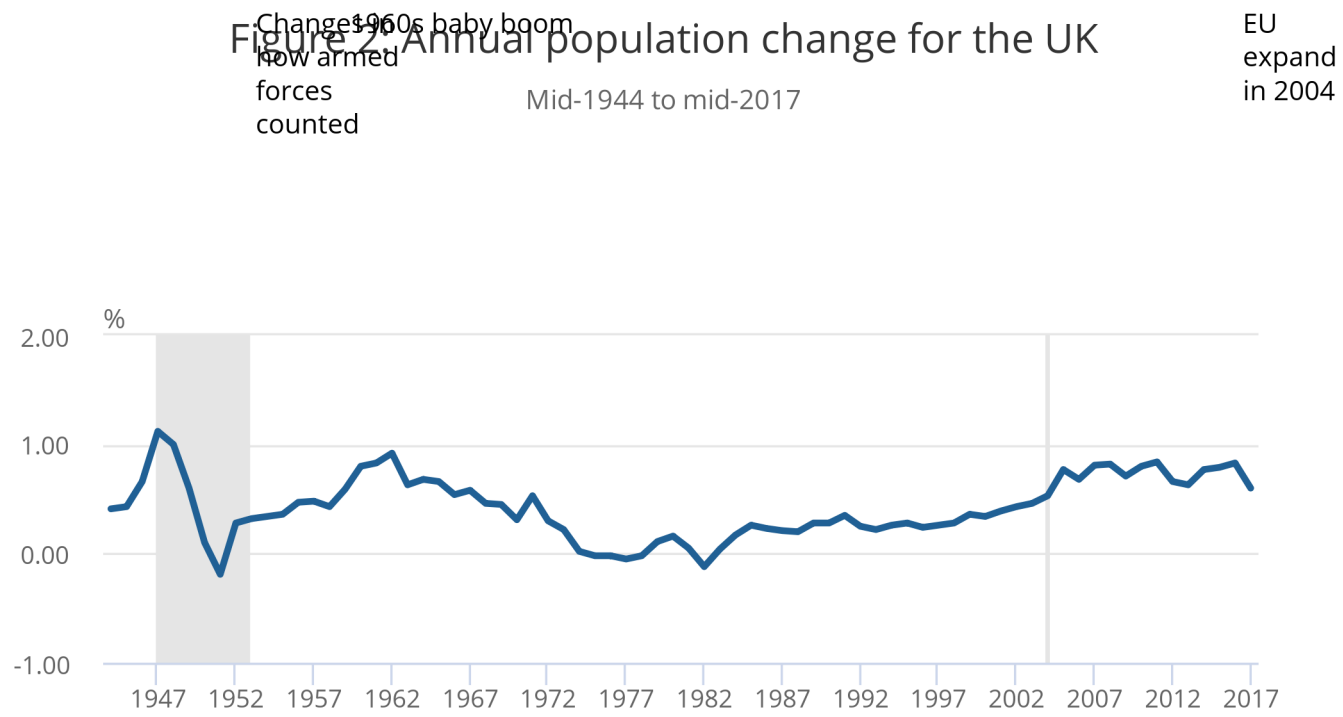
1. Figures may not add exactly due to rounding.

2. Other changes include changes to the size of armed forces stationed in the UK and other special population adjustments; and is combined with net international migration for the purposes of this graph.

Figure 2 shows how UK population growth has varied over the long-term.

Figure 2: Annual population change for the UK

Mid-1944 to mid-2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

Notes:

1. At mid-1947 and mid-1952 population estimates changed in the way home armed forces resident in the UK and UK armed forces posted abroad were included or excluded. Population estimates back to 1838 are available in the supporting information tables.

Figure 2 shows that the current level of growth is higher than that of 55 out of the past 77 years. While population growth in the year to mid-2017 was the lowest since mid-2004 it was still higher than in any year between mid-1965 and mid-2003. Growth was higher for some of the years after the Second World War, however there are differences between the methods and definitions used that affect the direct comparability of population estimates from these periods.

5 . International migration lower, but continues to be the main driver of UK population growth

In the year to mid-2017 international migration, natural change, and other changes have all decreased at the same time. Breaking this down further shows that in the year to mid-2017 there were:

- 572,000 international immigrants, 78,000 fewer than the previous year (a 12% decrease)
- 342,000 international emigrants, 28,000 more than the previous year (a 9% increase)
- 762,000 births, 19,000 fewer than the previous year (a 2% decrease)
- 602,000 deaths, 14,000 more than the previous year (a 2% increase)

The reduction in the number of immigrants is the largest single driver of the lower level of population growth in the year to mid-2017. However, it is worth noting that immigration in the year to mid-2017 was still 572,000, broadly in line with the average number of immigrants over the last five years (569,000).

The EU referendum is likely to be one of the key drivers of these changes. The Migration Statistics Quarterly Bulletin for this period noted that: “The number of people immigrating for a definite job has remained stable but there has been a 43% decrease in the number of people immigrating to look for work over the last year, especially for EU citizens. These changes suggest that Brexit is likely to be a factor in people's decision to move to or from the UK – but decisions to migrate are complex and other factors are also going to be influencing the figures.”

International migration

Analysis of the International Passenger Survey (IPS) data that form the basis of these estimates, in the Migration Statistics Quarterly Bulletin, showed that the change to immigration in the year to June 2017 was statistically significant, but emigration was not. Other potential points of interest from this analysis include:

- over the longer term, varying levels of net migration are not unusual and we have seen net migration rise and fall between 140,000 and 336,000 over the last 20 years
- over three-quarters of the decrease in net migration can be accounted for by EU citizens (down 82,000 to +107,000 – a statistically significant decrease)
- the largest inflow of immigrants to the UK was from Romania (50,000) followed by China, India, France and Poland
- the largest outflow of emigrants from the UK was to Australia (31,000) followed by the US, Spain, Poland and France

Office for National Statistics (ONS) has set out a cross-Government Statistical Service (GSS) programme, working with the Home Office (the lead policy department), the devolved administrations and other government departments to deliver improvements to international migration statistics to meet user needs.

ONS have also worked with the Home Office, Department for Work and Pensions (DWP) and others to improve the way we convey our regular international migration statistics through our quarterly report. Publication of the report on long-term migration for the year ending December 2017, scheduled for 24 May 2018, has been postponed until 16 July 2018.

In addition to the direct impact of migration on the size of the population, current and past international migration also has indirect effects on the size of the population as it changes the numbers of births and deaths in the UK. A fuller assessment of the indirect effect of migration on the size of the population would consider:

- births to, and deaths of, people who had migrated to the UK
- births to, and deaths of, people who emigrated from the UK (and who would have given birth, or died, in the UK had they not emigrated)
- how to account for births to, and deaths of, UK-born people who had emigrated and subsequently returned to the UK
- how to account for births to, and deaths of, UK-born people who had parents (or grandparents) who were themselves immigrants

Some additional information for England and Wales can be obtained in Parents' Country of Birth 2016, this showed that in the calendar year 2016 of all births in England and Wales 28.2% were to mothers born outside of the UK. Background information on the UK population, its size, characteristics and the causes of population change is available in the Overview of the UK Population: March 2017.

Births and deaths

Fertility analysis is largely based on calendar year data which only overlaps with half of the mid-year period. Further information on the births in England and Wales used in this bulletin will be available on the 18 July 2018 in Birth summary tables in England and Wales: 2017.

The increase in deaths is partly a result of the winter period 2016 to 2017 excess winter mortality increasing from 24,580 in 2015 to 34,300 in 2016, the second highest level of the past five years. Further analysis from ONS has suggested that this was likely due to the predominant strain of flu prevalent during the 2016 to 2017 winter, which had greater impact on the elderly than the young. The long-term trend, however, is for excess winter deaths to have fallen since the 1950s.

Decreases in mortality over recent years have resulted in increasing life expectancies in the UK, although increase in recent years have been very slight. The long-term trend has resulted in a narrowing of the gap in life expectancies between men and women. This reflects a fall in the proportions of males who smoke or hold a higher-risk occupation. This is one reason why the ratio of males to females in the UK population has continued to increase. There are now 98 men for every 100 women, compared with 95 men per 100 women in mid-2005.

The other main reason for the increase in this ratio is that net international migration results in more men residing in the UK as they tend to migrate to the UK more than women. However, this effect did not take place in the year to mid-2017. Although immigration was higher than emigration, a much higher ratio of male emigrants to female emigrants resulted in a net loss of males through international migration. The IPS shows fluctuations in the gender of international migrants, so it is too early to suggest whether this is a new trend or simply volatility in the data.

Other changes

Other changes, comprising changes to the size of the armed forces stationed in the UK and other special population adjustments, tend to have small effects on the national population but can have a larger impact at a local level. In the year to mid-2017, the UK population increased by 2,700 because of these changes, a lower number than the increase in the year to mid-2016, of 9,500. These changes reflect trends such as the return of British Armed Forces based in Germany and US air force personnel and their dependents entering England and Wales at different rates in different years.

What does this mean at the local authority level?

It is possible to illustrate how the components fit together by averaging local authority area data such as those presented in table MYEB3. This shows that were there to be a typical local authority in the UK in the year to mid-2017 its population of 168,900 people would have:

- gained 590 people through net international migration, a decrease from 860 in the year to mid-2016
- gained 410 people through natural change, a decrease from 490 in the year to mid-2016
- gained and lost 8,990 people through internal migration (which on average will always net to no change), compared with 8,000 people in the year to mid-2016 (internal migration methods changed in mid-2017, the new method estimates higher numbers of moves than the previous one)

The other changes equate to 10 people per local authority – however this is not distributed evenly around the UK. Maidstone in Kent is perhaps the closest to this profile, with 167,700 people in the year to mid-2017, gaining 580 people through net international migration and 490 through natural change. However, net internal migration was higher still, at 920 people, highlighting that no area is truly typical in this sense.

6 . Growth varies less across the UK; London no longer growing fastest

Table 1 shows that, of the four countries of the UK, England's population grew the fastest to mid-2017, over both a one-year period and a 10-year period.

Table 1: Population growth for UK countries, mid-2017

	Population 2017	Share of UK population	Increase on 2016	Percentage change since 2016	Percentage change since 2007
England	55,619,400	84.2%	351,400	0.64%	8.2%
Wales	3,125,200	4.7%	12,100	0.39%	4.0%
Scotland	5,424,800	8.2%	20,100	0.37%	4.9%
Northern Ireland	1,870,800	2.8%	8,700	0.47%	6.2%
UK	66,040,200	100.0%	392,200	0.60%	7.7%

Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

Notes:

1. Figures may not add exactly due to rounding.

Population growth decreased, but remained positive in all four countries of the UK. Although England's rate remained the highest, it had the largest year-on-year decline of the four countries, reflecting the fact that England has a larger proportion of international migrants than might be expected from its share of the overall population. Age structures also affect growth rates – Northern Ireland has the lowest median age of the four countries and is therefore more likely to grow through natural change than the other countries.

The datasets accompanying this release, for example MYE3, provides data on each component of population change down to the local authority level. It also covers other geographical levels, for example:

- the East Midlands had the fastest population growth of the nine regions of England, at 0.98%; the North East had the slowest, at 0.31%

- London, the fastest growing English region in the year to mid-2016 (1.19%) had the biggest change in growth rate, roughly halving to 0.63% in mid-2017

- at the English County level growth varied from 1.43% in Leicestershire to a 0.08% decrease in Cumbria

Changes in local populations can be driven by a variety of components – including international migration, internal migration, births and deaths. The interactive maps in Figure 3 show the overall change in population, and change due to different components of change between mid-2016 and mid-2017 for each local authority in the UK.

To use this interactive tool select a local authority to view the population change and the components of change in the mid-2017 population estimates. Other changes (for example, in special populations such as prisoners) are included in the datasets that accompany this bulletin, but are not presented in Figure 3.

Figure 3: Map of population change mid-2016 to mid-2017 and main components of change, local authorities in UK

A more conventional map of local authority boundaries is available from the ONS geoportal site. Internal migration changes are commented on further in Section 8, where maps separating in-and-out migration are available. The following demonstrate examples of patterns that can be observed in the remaining components.

Subnational population growth

While many authorities with decreasing populations in mid-2017 are on the north and west coasts of Scotland or the coast of Cumbria, many other apparently unconnected local authorities also had decreasing populations. There is, however a group of local authority areas with relatively high growth in Leicestershire and Northamptonshire. The other maps suggest that no single component of change is driving growth for that cluster. In total:

- the population grew in 346 local authorities in the year to mid-2017, compared with 366 to mid-2016

- two thirds of local authorities (259) had slower growth in the year to mid-2017 than the previous year

- the 45 local authorities showing population decreases to mid-2016 were spread throughout England, Wales and Scotland, and were a mix of areas with an older population, areas with decreasing international migration, and areas with decreasing special populations

Population growth in mid-2017, when viewed next to maps showing the components of population change, appears to have been driven to a large extent by internal migration changes. Over a longer period, this has not always been the case. For example, from the mid-2011 estimates (derived from the 2011 Census) to the mid-2017 estimates Tower Hamlets had notably higher growth than any other area at 20% over the six-year period, growing from 256,000 to 308,000 people. This area combined high natural change with net international migration.

Subnational international migration

A number of Inner London Boroughs had the highest levels of net international migration in the year to mid-2017. There are a number of urban centres with large student populations, such as Canterbury, Reading and Sheffield that also have high levels of net international migration. However, the notable pattern from the map above is that large swathes of the UK have relatively similar levels of net international migration. International migration rates have effectively become more similar across the UK, compared with the pattern in mid-2016.

As noted in Section 4, the Migration Statistics Quarterly Bulletin covering the year to mid-2017 noted that immigration had decreased while emigration had increased, an effect partly but not exclusively attributable to the EU referendum in June 2016. Considering how these two types of migration changed at the local authority level shows:

- just six local authorities, (out of 391), had increasing immigration and decreasing emigration, all of which were rural local authorities such as South Hams and Torridge in Devon with relatively low levels of international migration

- 30 local authorities, 8% of the total, had increasing immigration and increasing emigration

- 134 local authorities (a third or 34%), had both decreasing immigration and decreasing emigration

- 220 local authorities (56%), had decreasing immigration and increasing emigration

It is also useful to compare the ratio of immigration to emigration in mid-2017, as well as looking at the change. Although the ratio of immigration to emigration has fallen on average, in the majority of areas (93%) immigration is higher than emigration.

Subnational natural change (births minus deaths)

The younger age-structures of places like London and, Northern Ireland tend to lead to higher numbers of births than deaths, resulting in relatively high levels of positive natural change. This can be seen in the map above. However, the most notable pattern in the year to mid-2017 is that natural changes was negative in many areas with older age structures, which tend to be coastal or rural areas.

Around two-fifths of local authority areas showed negative natural change, reflecting older age structures. Negative natural change can be seen in clusters all around the coastlines of England, Wales and Scotland. These areas are typically part of the “Rural coastal and amenity” sub-group in the 2011 local authority classification and as shown by Table MYE6 many have high median ages. Further analysis of differences behind healthy life expectancy by area can be found in the article What affects an area’s healthy life expectancy?; while data on how births vary by area can be found in Births by mothers' usual area of residence in the UK.

Putting components of change together

The Internal migration map shows that a complex pattern of changes has taken place in the year to mid-2017, many of which are reflected in the population growth map. The most notable trend, consistent with recent years, is net out-migration from London local authority areas and high net in-migration to areas in the South West. Patterns in internal migration data and changes to the methods in the latest data are discussed in detail in Section 8.

Unlike recent years the list of the fastest growing local authorities is not dominated by London Boroughs; this partly reflects the lower level of net international migration in mid-2017 compared with the previous two years. In the year to mid-2017 this means that natural change and internal migration had a relatively greater impact on population change at the local level than in the year to mid-2016. Of the 10 local authorities with the highest rate of population growth in the year to mid-2017:

- three were predominantly growing due to net international migration (City of London, Tower Hamlets and Coventry), in the year to mid-2016 9 of the 10 fastest growing areas were primarily driven by net international migration

- six were predominantly growing due to net internal migration (Dartford, Tewkesbury, Vale of White Horse, South Derbyshire, East Northamptonshire, Daventry)

- one, Forest Heath, was primarily growing due to special populations reflecting administrative data showing increases in the number of US air forces personnel and their dependents

7 . Nearly 12 million UK residents aged 65 years and over

The composition of the UK population is determined by the pattern of births, deaths and migration that have taken place in previous years. The pyramid in Figure 3a shows some important trends in the age structure of the UK, comparing the population at mid-2017 and 10 years previously.

The proportion of the population aged 65 years and over reached 18.2% in mid-2017, compared with 18.0% in mid-2016. In mid-2017 there were just under 12 million people aged 65 years and over, 2.2 million more than 10 years before. The proportion of the population aged 65 years and over has increased by at least 0.1% every year since mid-2008, with faster increases between mid-2012 and mid-2014 when the large birth cohort born around 1947 reached age 65 and there was a period of lower net international migration.

It is worth noting that state pension ages are changing. While men's retirement age in mid-2017 had not yet moved from 65 to 66, the state pension age for women was in the process of moving from 60 to 65.

Figure 4a shows the population pyramid for the UK, with the 1947 birth cohort as a distinct cohort, aged 70 years.

Figure 4a: Population pyramid for the UK, mid-2017, single year of age 0 to 89



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

With the 70th anniversary of the NHS taking place on 5 July 2018 it is potentially helpful to consider the differences in the structure and dynamics of the population between mid-1948 and the latest data:

- the proportion of people aged 65 years and over was 10.6% for Great Britain (compared with 18.2% 69 years later in mid-2017)
- the number of births was 905,200 in the year 1948 compared with 762,200 in mid-2017
- the number of deaths was 546,000 in the year 1948 compared with 602,500 in mid-2017

In effect, the large cohort born around mid-1947 created a large demand for birth services; the same cohort has now reached age 70 and is expected to be creating demand for health services relating to older age.

The effects of international immigration to the UK since mid-2007 are visible in the pyramid. For most ages, the peaks and troughs present in the pyramid in mid-2007 are visible in the mid-2017 data, shifted by 10 years. However, the profile of the mid-2017 pyramid is wider and flatter, especially for those aged 21 to 38 years in mid-2017 (who were 11 to 28 in mid-2007). Such a change can only be generated by new population being added through net international migration.

The peaks and troughs in younger populations result in a mid-2017 population of 0- to 10-year-olds that is 13% higher than this age group in mid-2007 (1.0 million more people). However, there are 6% fewer 11- to 18-year-olds in the mid-2017 population (350,000 fewer people).

The population pyramid in Figure 4b is interactive, allowing you to compare the population structures of different areas and over time. An interactive pyramid that can be customised further is available as part of the Analysis of Population Estimates (APE) tool.

Figure 4b: Interactive population pyramids

These pyramids show that areas located near one another can have very different population structures. For example, Ceredigion's population pyramid has a very different shape from neighbouring Powys, with a peak of people around their early 20s, reflecting the presence of a large student population in Ceredigion. Some urban areas such as Manchester and the London Boroughs show a different pattern again, with high proportions of people in their 20s and 30s. While changing patterns of immigration and emigration will affect these age groups in particular, it is likely to take a number of years until such changes are visible in population pyramids such as these.

These differences can be seen in the interactive maps in Figure 5 below. For example, the first map shows the proportion of people in each area aged 0 to 15 years in mid-2017, highlighting, for example, the lower proportions of children in local authority areas in Scotland compared with Northern Ireland.

To use this interactive tool select a local authority to view the proportion of people in each of the three broad age groups, and the median age of people in that area.

Figure 5: Maps of population age structure by local authority area

These maps, alongside table MYE6, show that within the UK there are clear local differences in age structures. There are high proportions of working age people in student areas, such as Nottingham, Oxford and Southampton, and employment centres, such as London. London has a high proportion of people of working age, and a low proportion of those aged 65 years and over (11.8%; Tower Hamlets has the lowest proportion at 6.2%) and a median age of 35.1. London's young age structure reflects:

- relatively high net international migration of predominantly working age people
- net internal migration inwards of young working age adults
- net outwards internal migration of those aged 30 years and over

Many coastal areas show the opposite pattern, with high proportions of people aged 65 years and over, and high median ages. Notable the South West has 21.8% of its population aged 65 years and over (33.7% in West Somerset), and a median age of 43.8.

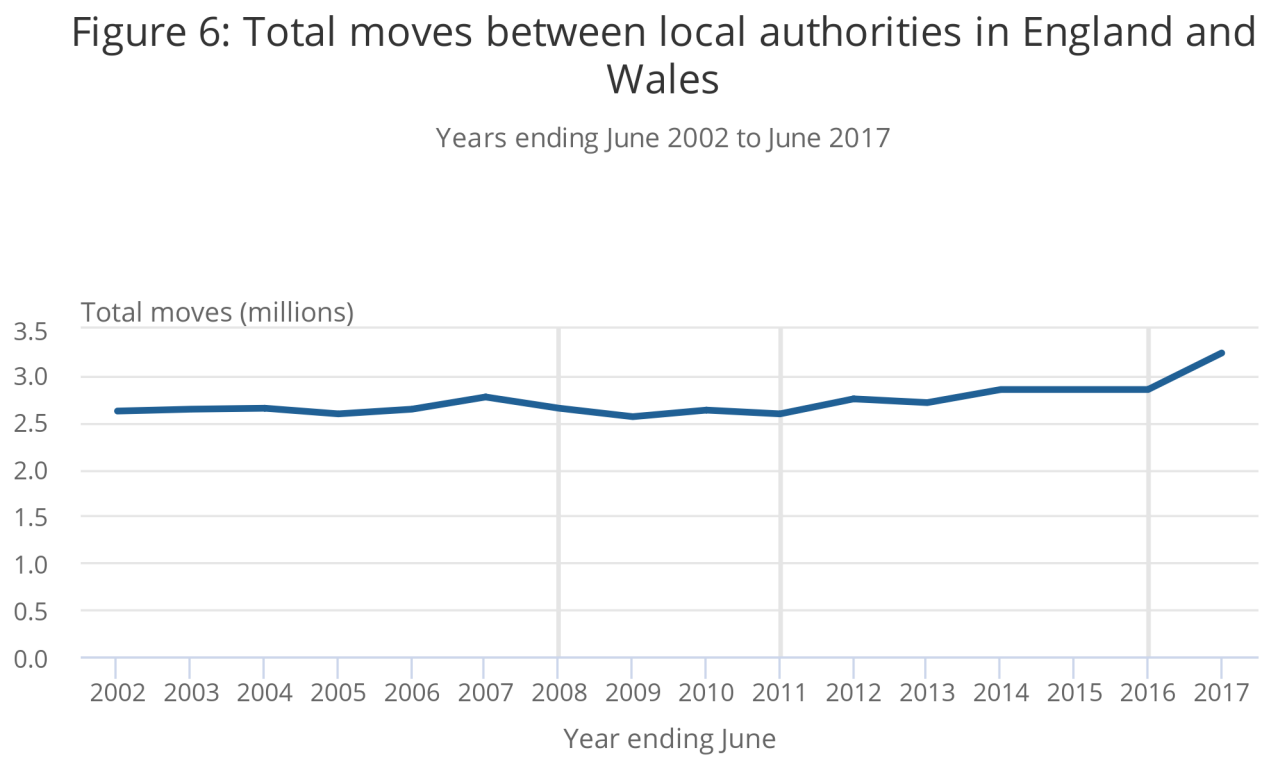
8 . Internal migration: pattern of moves between local authorities in England and Wales similar to last year

Internal migration is a component used in the production of the mid-2017 population estimates for England and Wales. Estimates of internal migration moves for areas within Northern Ireland are produced by the Northern Ireland Statistics and Research Agency (NISRA); estimates of internal migration moves for areas within Scotland are produced by National Records of Scotland (NRS). A comparison of ONS's, NISRA's and NRS's methods is available.

In the 12-month period to June 2017, an estimated 3.24 million people moved between local authorities in England and Wales, an increase of 14% on the previous year (2.85 million to mid-2016) (Figure 6). The increase in the number of moves is largely explained by a change in methods for mid-2017. Further details on these can be found in the methodology guide.

Figure 6: Total moves between local authorities in England and Wales

Years ending June 2002 to June 2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

Notes:

1. The grey lines indicate method changes.

The following comparisons consider internal migration at regional and local authority level. As mentioned in Section 6, there are several other factors that will influence total population change in an area, including births, deaths and international migration. This means that total population change will not necessarily be in the same direction as net internal migration.

The two regions with the highest numbers of moves in and moves out were London and the South East although they also have the largest populations. To take account of the effect of population size we look at the number of moves per 1,000 population.

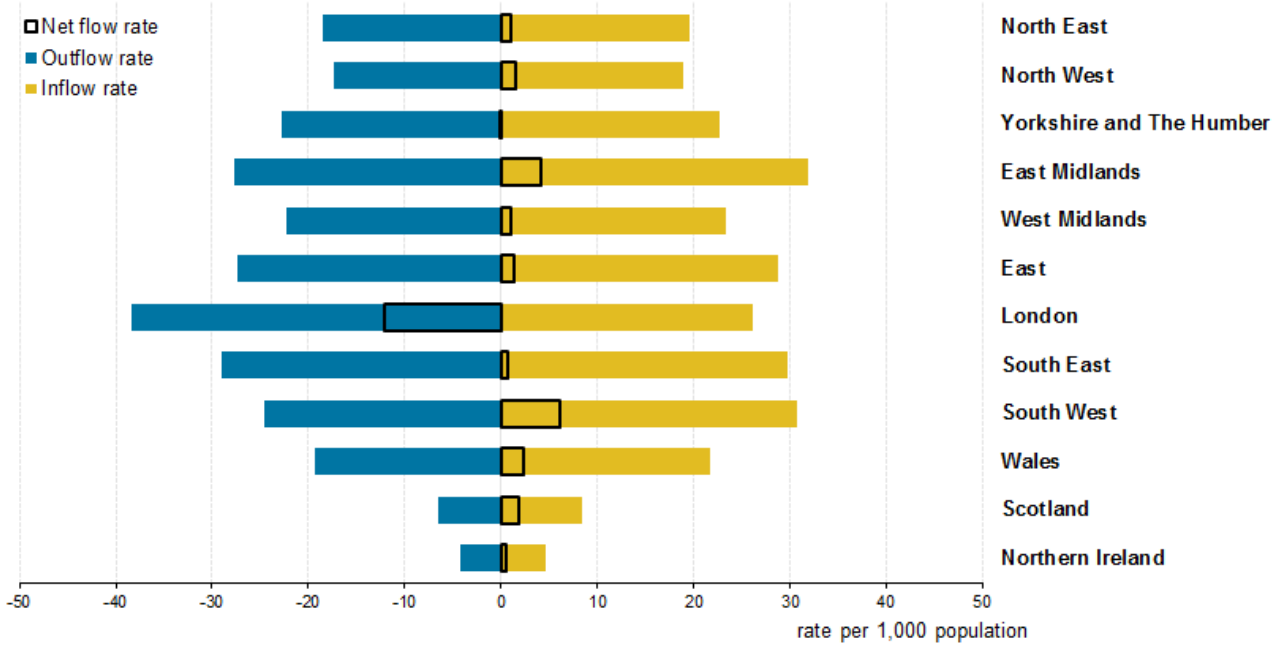
The East Midlands had the highest rate of inflows (31.9 moves per 1,000 population (mid-2016)) and London had the highest rate of outflows (38.3 moves per 1,000 population (mid-2016)) (Figure 7).

Apart from London with a net outflow of 12.2 per 1,000 population (mid-2016) and Yorkshire and The Humber with a small net outflow, all other regions, Wales, Northern Ireland and Scotland had net inflows, with the highest rate in the South West (6.2 per 1,000 population (mid-2016)).

Previous years' internal migration estimates show that this general pattern of a large net outflow from London and a large net inflow to other parts of southern and eastern England has existed for a number of years.

Figure 7: Internal migration moves per 1,000 population (mid-2016), including cross-border moves

Year ending June 2017, UK constituent countries and English regions



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

Interactive internal migration maps are available in Figure 8 for viewing inflow, outflow and net flow for local authorities in England and Wales for mid-2017.

Figure 8: Maps inflow, outflow and net flow per 100 population (mid-2016), for local authorities in England and Wales, year ending June 2017

There were 121 local authorities with more people moving out than in, of which 24 had a net outflow of more than 10 per 1,000 population (mid-2016). London had a particular concentration of local authorities with high net outflows, reflecting the high net outflow for the London region overall. An important explanation for this is that many parents with young children move out of London. London is also the most common region of first residence for international migrants to the UK and some of these may later move to other regions, potentially also with children. Similar factors may also contribute to the high net outflows from many provincial cities.

There were 227 local authorities with more people moving in than out, of which 46 had a net inflow of more than 10 per 1,000 population (mid-2016). Many of those were in regions that also had a higher net inflow: London, South West, South East and East Midlands. However, there were still local authorities within these regions that had a net outflow, demonstrating there is considerable within-region variation.

Figure 9: Interactive map showing flows between local authorities in England and Wales, year ending June 2017

By selecting a local authority of interest and hovering or clicking on the map to select another local authority, the interactive internal migration map in Figure 9 will show the flows to and from the pair of local authorities. As an example, for Bristol this shows that the three largest internal migration flows are with the local authorities that immediately surround it (South Gloucestershire, North Somerset and Bath and North East Somerset). In addition, Figure 9 shows that many of the large migration flows between Bristol and local authorities in other regions of England and Wales are with areas with large higher education institutions (for example Leeds, Manchester, Oxford, Reading).

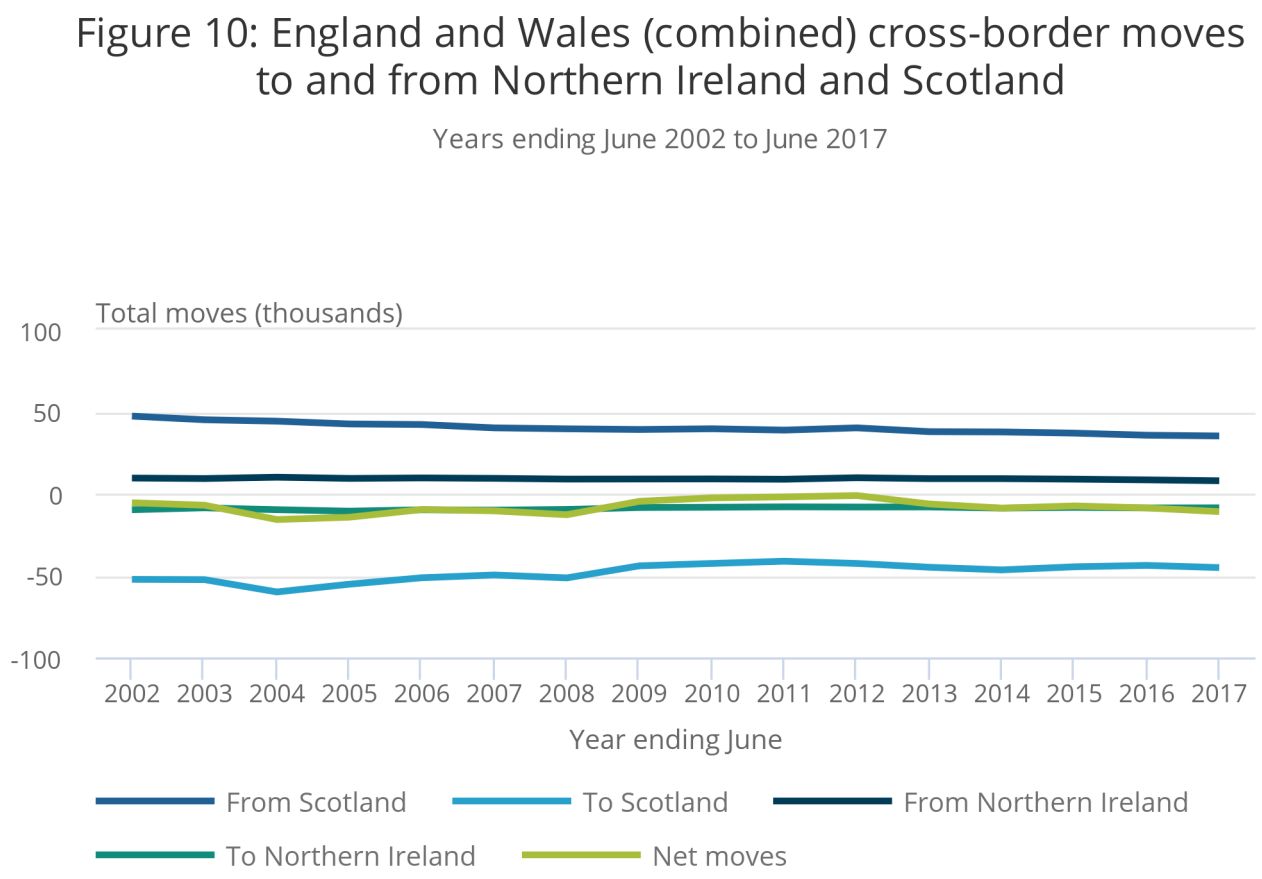
Impact of cross-border migration on the population of England and Wales

Cross-border moves are where people move, in either direction, between England and Wales (combined) and Northern Ireland and Scotland.

As with the previous year, more people moved out of England and Wales than into England and Wales (a net outflow of 11,037). Flow levels were largest for people aged 19 to 29 years. Net flows to Scotland (from England and Wales) were highest for people aged 18 to 20 and net flows from Scotland (to England and Wales) were highest for people aged 22 to 25 years. Conversely, net flows from Northern Ireland (to England and Wales) were highest for people aged 18 to 20 years (Figure 10).

Figure 10: England and Wales (combined) cross-border moves to and from Northern Ireland and Scotland

Years ending June 2002 to June 2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

Characteristics of movers in England and Wales by age, sex and area

Most moves occur in early adulthood with the peak age for movers being 19, the main age at which people leave home for study. There is another smaller peak at age 22; in many cases this will reflect graduates leaving university, moving for employment, further study or returning to their home address.

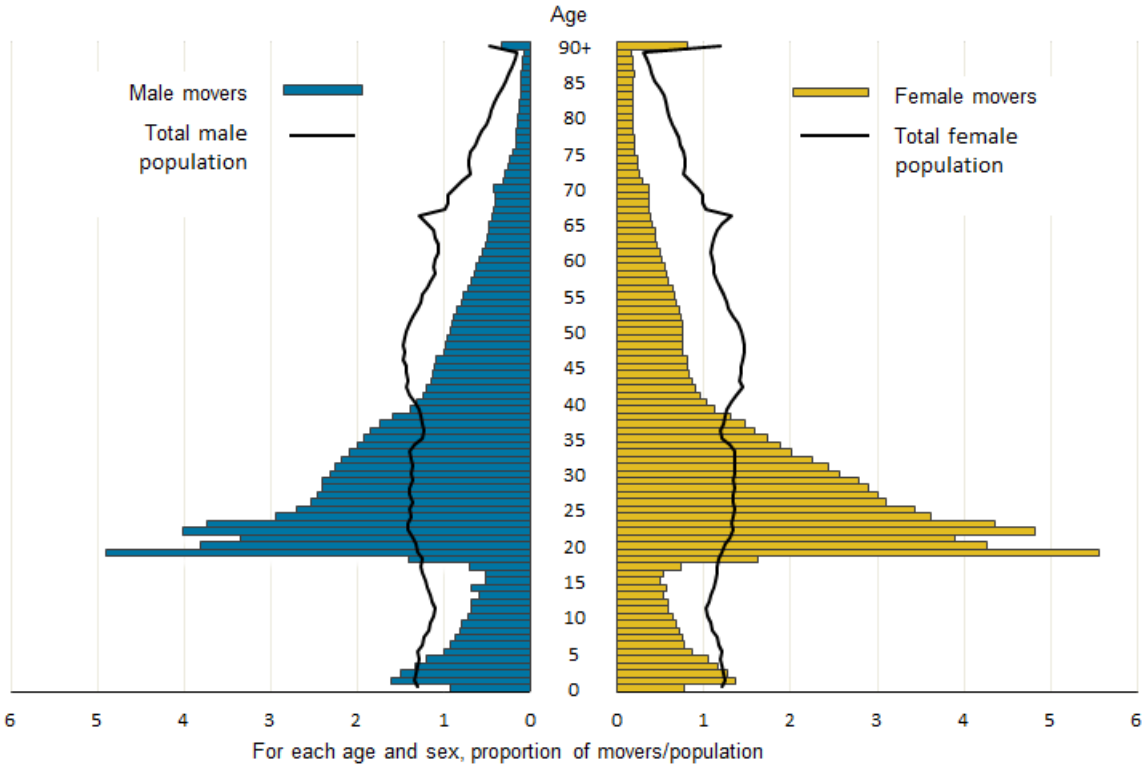
Levels of moves remain comparatively high for those aged in their 20s and 30s but gradually decline with age. This may reflect people becoming more settled in their employment, in an area or in relationships, or because they have school-age children.

In the London region, outflows were 9,300 higher than inflows for people aged 19 years, a peak in net outflows despite large numbers moving into London. This is likely to be driven by young adults moving in and out of London for higher education. The number of people moving into London outnumbered the number of people moving out of London for people in their early to late 20s. The peak occurred at age 23 and is likely to be driven by young adults seeking work in London, potentially after they graduated from university. Otherwise, there is a net outflow for all other ages from London, which is highest – after aged 19 years – for people in their 30s and early 40s along with young children.

A way of considering the age and sex profile of movers is to consider how it compares with the age and sex profile of the general population. For the total number of internal migration moves the sex ratio is fairly neutral; in the year to June 2017 around 1.6 million (48%) of moves were by males and 1.7 million (52%) were by females.

Figure 11: Population pyramids showing moves into local authorities in England and Wales (including moves from Northern Ireland and Scotland)

Year ending June 2017, and the total population on England and Wales, mid-2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

Notes:

1. Data represent proportion of each sex that have that age.

2. "Age" is age at mid-2017.

In Figure 11 where the solid pyramid (moves) is wider than the outline pyramid (population), people at that age have a higher propensity to move. This applies to very young children and adults aged between 19 years and the late 30s. For all other ages the outline pyramid is wider than the solid pyramid indicating people who have a lower propensity to move.

9 . UK has third highest population in the European Union

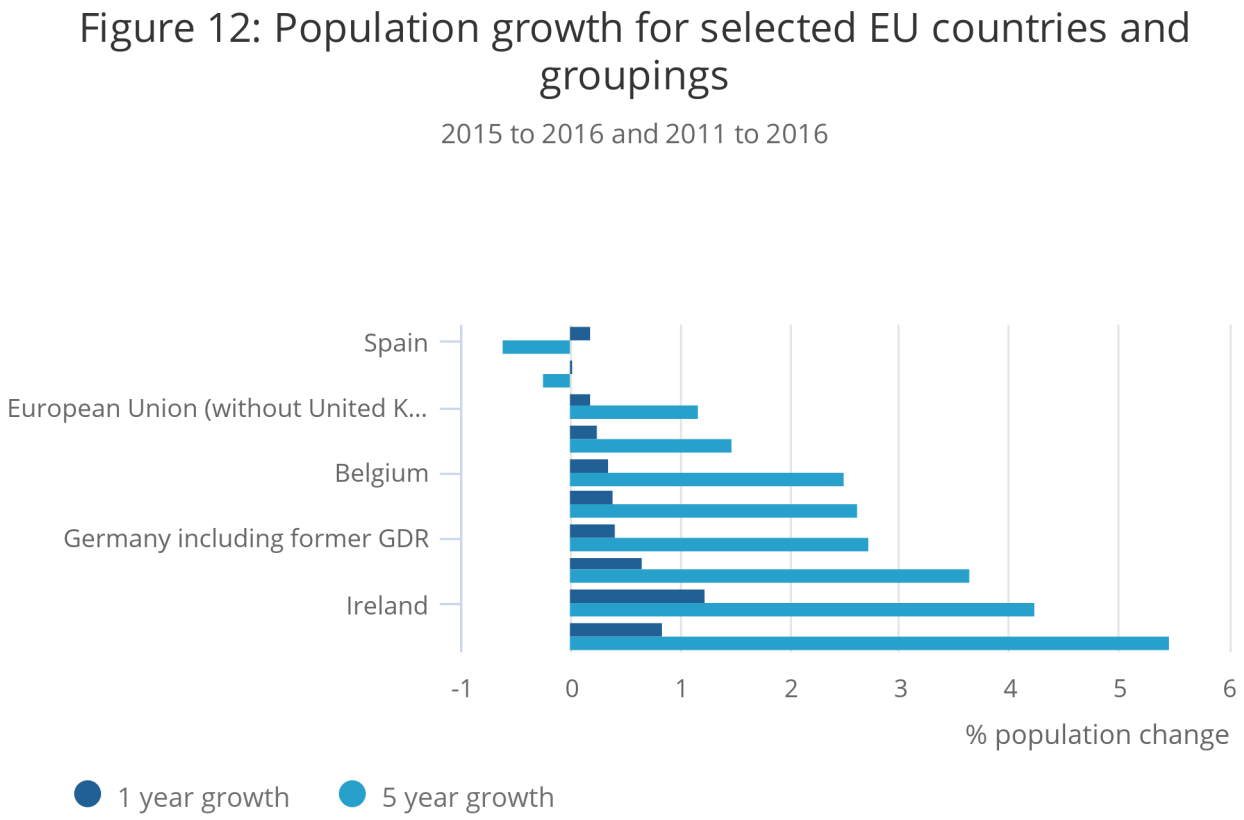
An alternative series of population estimates, using a slightly modified cohort component method, is supplied to and published each July by Eurostat (the European Statistics Agency). The difference in method, while small, allows estimates at 1 January to be made, to higher single-years of age. Eurostat's analysis of these data show that:

- while the population of the EU-28 grew in the calendar year 2016, natural change was negative for the second year running, and therefore net migration into the EU was driving growth
- the rate of population growth since 2005 was slow relative to previous decades, the reverse of the trend in the UK
- Germany, France, the United Kingdom and Italy together comprised more than half (54.0 %) of the total EU-28 population on 1 January 2017

Figure 12 below shows how the populations of selected EU countries have changed over the past five years and one year.

Figure 12: Population growth for selected EU countries and groupings

2015 to 2016 and 2011 to 2016



Source: Eurostat

Figure 12 demonstrates that UK growth over five years, at 3.6%, was more than double that of the whole EU (1.5%). The UK is such a large member of the EU that without it included, the EU would have grown by 1.2%. The UK in 2016 formed an eighth of the whole population of the EU (12.7%). Further comparisons using the 2015 data are available from Overview of the UK Population: March 2017.

The size of the UK population living in EU countries has been analysed in Living abroad: British residents living in the EU: April 2018. This found that 785,000 UK citizens lived in the EU, excluding the UK and Ireland, on 1 January 2017. Over two-thirds, 69%, lived in Spain, France or Germany.

10 . Links to related statistics and how to find data

There are a number of ways to obtain population estimates data:

- For a simple population estimate – see the latest datasets accompanying this release
- To extract population totals by specific ages, places and years – you may wish to use NOMIS or ONS's customise your data
- To explore component of change – the Analysis of Population Estimates tool provides tables and graphs back to mid-2011
- To quantify the quality of the estimates – please see the quality tools and uncertainty measures

The mid-year population estimates are essential building blocks for a wide range of National Statistics. Table 2 illustrates the wide variety of related products and a number of tables and online sources for obtaining population estimates data.

It is possible to aggregate local authorities up to other geographies at which population estimates can be used to allocate funding, including:

- Combined Authorities for example Liverpool City Region
- Police Force Areas (which typically correspond to counties or pairs of counties)
- NUTS areas, used for European research and funding
- Local Enterprise Partnerships

However, it is not possible to produce estimates for national parks or a complete set of clinical commissioning groups (CCGs) until small area population estimates become available in the autumn.

Table 2: Where to find data on…

UK mid-year pop estimates – in more detail	Local authority single-year of age estimates	Interactive population pyramids, or tables MYE2 and MYEB2
	Time series data	Table MYEB2 or NOMIS
	Previous mid-year estimates series	ONS archive website
	Components of population change for local authorities	Tables MYE3 and MYEB2
	Other local authority-based geographies	Regions and counties are available in MYE2,3,5 and 63; others can be obtained via the open geography portal
	Small areas and geographies built from them - Clinical Commissioning Groups, Parliamentary Constituencies, national parks	Small area population estimates or NOMIS
Similar data – but not UK mid-year population estimates	Median ages	Table MYE 6
	Population density	Table MYE 5
	Census estimates	2011 Census - UK LA statistics
	Forward in time - population projections	England and Wales: National population projections table of contents; subnational population projections
	Going beyond age 90 - estimates of the very old	ONS ageing statistics
	Calendar year population estimates	Eurostat
	Population registered to vote	Electoral statistics for the UK: 2017
	Families	Families and households in the UK: 2017
Specific countries or themes	Wales's population estimates	Welsh Government
	Scotland's population estimates	National Records of Scotland
	Northern Ireland's population estimates	Northern Ireland Statistics and Research Agency
	Births	Published separately for England and Wales, Scotland and Northern Ireland
	Deaths	Published separately for England and Wales, Scotland and Northern Ireland
	Internal migration	Internal migration tables
	International migration	Migration Statistics Quarterly Report, Local Area Migration Indicators, UK

	Characteristics of the population	Population of the UK by Country of Birth and Nationality: 2017 Sexual identity, UK: 2016 Population estimates by marital status and living arrangements, England and Wales

Corresponding estimates for small areas (super output areas, wards, parliamentary constituencies, health areas and national parks) will be released later in 2018. Estimates of the very old (including centenarians) will be released in September 2018.

You should be aware that the mid-year population estimates will continue to remain the official population estimates for England and Wales, carrying the National Statistics accreditation. Benefits delivered from ongoing administrative data research will be used to better understand the current population estimates process and drive potential improvements wherever possible.

11 . What has changed in this publication?

An important recent change is that these bulletins combine commentary formerly published separately as Internal migration, England and Wales and Population Estimates for UK, England and Wales, Scotland and Northern Ireland. This reflects the importance of internal migration as a component of the population estimates and the benefits of using the two publications together.

Further changes compared with last year's releases include:

- the methodology guide helps users understand the impact made by the two changes to internal migration methodology that have been made in this year's estimates
- the replacement of the Population Estimates Analysis Tool with a tool containing more information on components of change over time, the Analysis of Population Estimates (APE) tool
- dataset titles and descriptions have been shortened and made more consistent

Methods changes for this year are described in the Methodology Guide for mid-2017 UK Population Estimates (England and Wales). We welcome your comments on the usefulness and presentation of the population estimates in this release. Please contact the population estimates team using the email address pop.info@ons.gov.uk

12 . Upcoming changes to this bulletin

A change to the data source used to measure internal moves will be required in future, when the patient register (PR) is no longer available, but the Patient Data Service (PDS) has been confirmed as a suitable source to be used for the same purpose. More details can be found in the Methodology Guide for mid-2017 UK Population Estimates (England and Wales).

13 . Quality and methodology

The Population estimates Quality and Methodology Information report and Internal migration Quality and Methodology Information report contain important information on:

- the strengths and limitations of the data and how it compares with related data
- uses and users of the data
- how the output was created
- the quality of the output including the accuracy of the data

Mid-year population estimates relate to the usually resident population. They account for long-term international migrants but not for short-term. This approach is consistent with the standard UN definition for population estimates, which is based upon the concept of usual residence and includes people who reside, or intend to reside, in the country for at least 12 months, whatever their nationality.

Mid-year population estimates are compiled to provide information about the size of the population and how it changes over time. This information is used for planning services, managing the economy and in the calculation of rates where a population denominator is required, such as social and economic indicators.

Net international migration estimates quoted in this report include net flows of asylum seekers and refugees where applicable. Other changes include moves of armed forces personnel at home and overseas.

Measures of statistical uncertainty are available for the year's mid-2012 to mid-2016 (note these reflect the international emigration methods used prior to the March 2018 revised series of population estimates).

Methods guides, which detail the data sources and methodology used to produce the mid-year population estimates are available for the UK countries:

- England and Wales Methodology Guide for mid-2017 UK Population Estimates (England and Wales)
- Northern Ireland Methodology Report
- Scotland Mid-Year Population Estimates for Scotland: Methodology Guide 2017

Further information and research is published on the population statistics research page.

Revisions policies for population statistics include the mid-year estimates. It explains how revisions to statistics are categorised and implemented by ONS, including revisions following a census.