

Article

# Population dynamics of UK city regions since mid-2011

A comparison of growth rates of city regions, as well as individual components of change – births, deaths, internal migration and international migration.



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# 1 . Introduction

Differing levels of population growth across different cities and regions are often a reflection of the economic strength of the location, with areas where the economy is performing strongest often experiencing most population growth.

As part of the policy of devolution, many local areas in the UK are being given more powers to determine policies that can impact their local economies. The forthcoming move towards local authorities retaining the business rates they raise locally is an example, as are the devolution agreements for some of England's city regions. Meanwhile the UK population is ageing, with the share of population aged 65 and over rising steadily. In addition the recent vote to leave the EU could lead to changes in the net flows of international migrants to the UK.

In these contexts understanding the dynamics of an area's current population can be very useful. It can provide detail on total population growth and the components of that growth, on the working age population in an area, or on the flows of younger workers in their 20s and 30s – all of which can influence the local economy.

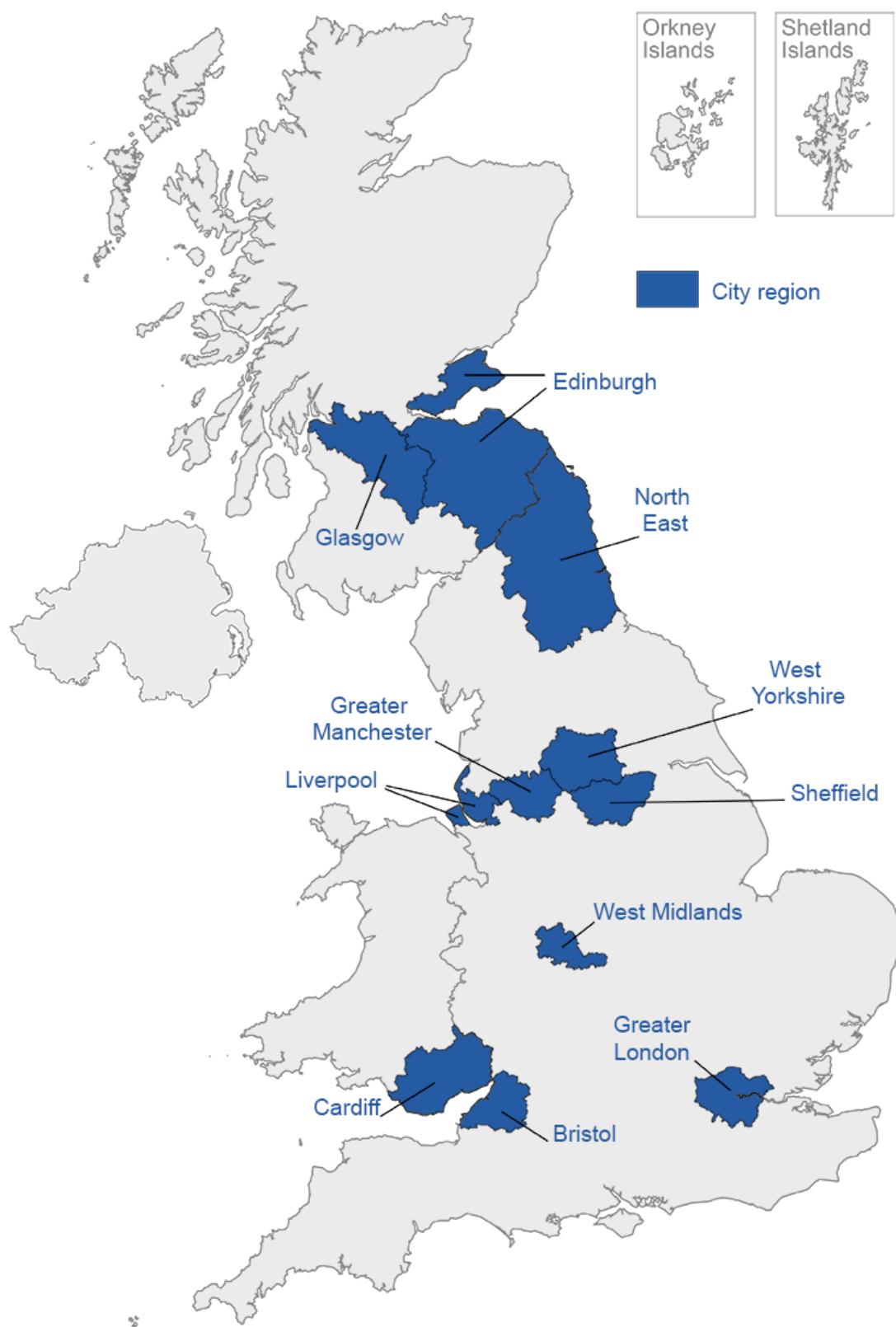
To facilitate understanding of these issues this article brings together a range of existing population data to compare the population dynamics of Greater London and the next 10 most populous city regions in the UK. It demonstrates a wide divergence between the city regions in terms of recent and projected population growth as well as the demographic factors influencing the growth. In the context of devolution, these differences are important. They provide one reason why local economic and social policies can be expected to differ across different city regions as devolution progresses, because policies suitable for one city region may differ from those suitable for another.

In more detail this article considers overall growth rates since 2011, as well as the contributory components of population change – births, deaths and migration. It also examines population age structure and population projections.

While there is no single definition of city regions, in essence they refer to metropolitan centres and their "functional areas" – meaning the [surrounding areas with strong economic and social ties](#). The city regions in this article are shown in Figure 1. The full constitutions are in the Appendix but the city regions chosen are variously based on metropolitan counties, existing or proposed combined authorities or city deal areas. We recognise, however, that the extent of some combined authority areas is still subject to negotiation.

The city regions vary greatly in size and settlement pattern. All comprise groupings of complete local authorities but while some are closely based on conurbations, others have a much wider extent. In some of these cases (such as North East) most of the population is part of or close to the dominant urban area; in others (such as Cardiff) the population is split across multiple built-up areas.

**Figure 1: The 11 most populous city regions in the UK, mid-2015**



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## 2 . Total population

Greater London is by far the most populous city region with 8.7 million residents. As shown in Table 1, this is over 3 times more than any other area. All the other city regions in this article have over 1 million residents, with Bristol being the smallest. In total these 11 city regions have over 27 million residents; this is over 40% of the total UK population of 65 million.

**Table 1: Estimated population of city regions, mid-2015**

City region	Population mid-2015
Greater London	8,674,000
West Midlands	2,834,000
Greater Manchester	2,756,000
West Yorkshire	2,282,000
North East	1,957,000
Glasgow	1,804,000
Liverpool	1,525,000
Cardiff	1,505,000
Sheffield	1,375,000
Edinburgh	1,350,000
Bristol	1,119,000

Source: ONS population estimates (incorporating NRS and NISRA estimates)

## 3 . Population change, mid-2011 to mid-2015

Table 2 shows the growth rates of city regions between mid-2011 (the first mid-year estimates after the most recent census) and mid-2015. The comparison includes the Rest of the UK, which covers everything from other large cities through to remote rural areas. As this article is focused on change, the table is ordered by growth rate. For consistency most of the other tables in this article are presented in the same order.

**Table 2: Population growth of city regions, mid-2011 to mid-2015**

City region	Population mid-2011	Population mid-2015	Growth	% growth
Greater London	8,204,000	8,674,000	469,000	5.7
Bristol	1,070,000	1,119,000	49,000	4.5
West Midlands	2,740,000	2,834,000	94,000	3.4
Greater Manchester	2,685,000	2,756,000	71,000	2.6
Edinburgh	1,316,000	1,350,000	34,000	2.6
West Yorkshire	2,227,000	2,282,000	54,000	2.4
Sheffield	1,344,000	1,375,000	31,000	2.3
Cardiff	1,482,000	1,505,000	24,000	1.6
North East	1,933,000	1,957,000	24,000	1.2
Liverpool	1,506,000	1,525,000	18,000	1.2
Glasgow	1,787,000	1,804,000	17,000	1.0
City regions	26,295,000	27,180,000	885,000	3.4
City regions not London	18,091,000	18,506,000	415,000	2.3
Rest of the UK	36,990,000	37,930,000	940,000	2.5
UK	63,285,000	65,110,000	1,825,000	2.9

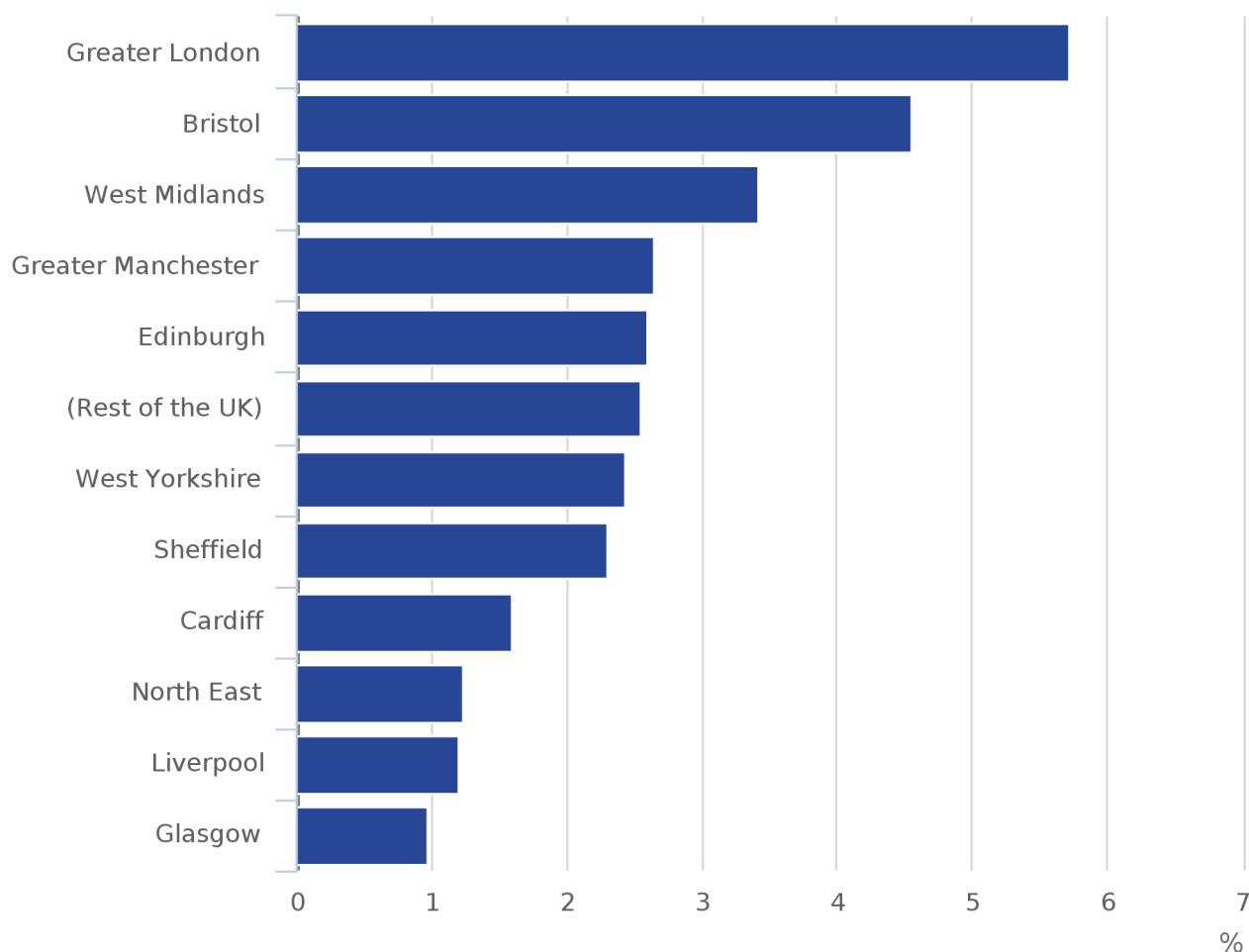
Source: ONS population estimates (incorporating NRS and NISRA estimates)

Notes:

1. Because of rounding, figures may not sum.

Figure 2 gives a visual representation of the percentage growth shown in Table 2.

**Figure 2: Population growth of the city regions and the Rest of the UK, percentage, mid-2011 to mid-2015**



**Source:** Population estimates from the Office for National Statistics (incorporating estimates from National Records of Scotland and the Northern Ireland Statistics and Research Agency)

All city regions had an increase in population over this period but the fastest-growing was Greater London, with an increase of 5.7%. This was nearly 6 times the growth of 1.0% in the Glasgow city region. Although there was substantial variation, as a whole the city regions excluding Greater London increased by 2.3%, slightly less than the 2.5% growth in those parts of the UK outside the city regions.

## 4 . Components of population change

Change in the population size of city regions is caused by a combination of births, deaths, internal (within-UK) migration and international migration. Table 3 shows how much change occurred as a result of each of these components between mid-2011 and mid-2015, as a percentage of the mid-2011 population estimate of each area.

**Table 3: Components of population change, mid-2011 to mid-2015, as a percentage of mid-2011 population estimate**

City region	Births	Deaths	Net internal migration	Net international migration	Total growth
Greater London	6.4	-2.3	-3.1	4.8	5.7
Bristol	5.1	-3.5	1.4	1.4	4.5
West Midlands	5.9	-3.5	-1.0	2.0	3.4
Greater Manchester	5.5	-3.5	-0.7	1.3	2.6
Edinburgh	4.5	-3.9	0.8	1.3	2.6
West Yorkshire	5.5	-3.5	-0.7	1.1	2.4
Sheffield	4.9	-3.8	-0.4	1.6	2.3
Cardiff	4.8	-3.9	0.1	0.6	1.6
North East	4.3	-4.2	0.1	0.9	1.2
Liverpool	4.7	-4.1	-0.2	0.8	1.2
Glasgow	4.5	-4.3	0.0	0.8	1.0
City regions	5.5	-3.3	-1.1	2.3	3.4
City regions not London	5.1	-3.8	-0.2	1.2	2.3
Rest of the UK	4.7	-3.8	0.8	0.9	2.5
UK	5.0	-3.6	n/a	1.5	2.9

Source: ONS population estimates (incorporating NRS and NISRA estimates)

Notes:

1. Total growth also includes a small amount of other change resulting from changes to the numbers of military personnel, plus other special population adjustments.

All city regions had more births than deaths, although in some cases the difference was small. In general the faster-growing city regions had comparatively more births and comparatively fewer deaths. Greater London had comparatively most births and fewest deaths. However, an important factor is the age structure of the population, considered in more detail in section 4.1.

Net change from internal migration can be in both directions. As a whole there was a net flow from city regions to the Rest of the UK, with Greater London in particular having a large net outflow. However, some city regions, especially Bristol and Edinburgh, had net inflow.

All areas saw a population gain from international migration, meaning there were more immigrants than emigrants. However, the proportional increase in Greater London was more than twice that in any other city region and 3 city regions (Cardiff, Liverpool and Glasgow) had a lower proportional increase than the Rest of the UK.

Sections 4.1 to 4.3 consider these components of change in more detail.

## 4.1 Births and deaths

A range of factors affect numbers of births and deaths. One of these is age structure. Table 4 shows the broad age structure in each city region as at mid-2015. It also reproduces the Table 3 values showing percentage population change from births and deaths between mid-2011 and mid-2015 – this provides a form of 4-year birth and death rate (rather than the more commonly used annual rates per 1,000 population).

**Table 4: Percentage of population in each age group, mid-2015; also percentage change to mid-2011 population resulting from births and deaths between mid-2011 and mid-2015**

City region	Percentage in age group, mid-2015				Total % change mid-2011 to mid-2015 from	
	0-15	16-44	45-64	65+	births	deaths
Greater London	20	46	22	12	6.4	-2.3
Bristol	18	41	24	17	5.1	-3.5
West Midlands	21	40	23	16	5.9	-3.5
Greater Manchester	20	40	24	16	5.5	-3.5
Edinburgh	17	39	27	18	4.5	-3.9
West Yorkshire	20	39	24	16	5.5	-3.5
Sheffield	19	38	25	18	4.9	-3.8
Cardiff	19	38	26	18	4.8	-3.9
North East	17	37	27	19	4.3	-4.2
Liverpool	18	37	26	18	4.7	-4.1
Glasgow	17	39	27	17	4.5	-4.3
City regions	19	41	24	15	5.5	-3.3
City regions not London	19	39	25	17	5.1	-3.8
Rest of the UK	18	35	27	20	4.7	-3.8
UK	19	38	26	18	5.0	-3.6

Source: ONS population estimates (incorporating NRS and NISRA estimates)

Notes:

- Because of rounding, figures may not sum.

Greater London stands out with a much higher proportion in the 16 to 44 age group than any other area and a much lower proportion of people aged 65 and over. These attributes are important factors in explaining why it has the highest birth rate and lowest death rate.

There is less difference between the other city regions in terms of broad age distribution, although all have a higher proportion of 16- to 44-year-olds and a lower proportion of over 65s than the Rest of the UK. However, areas with similar proportions aged 16 to 44 can have substantially different birth rates – for example, Edinburgh and West Yorkshire both have 39% of residents in this age group, but West Yorkshire had a much higher birth rate.

This can be explained by considering general fertility rates (GFRs), reflecting the proportion of women of child-bearing age who have given birth in a specified time period. Statistics at local authority level from the [Office for National Statistics \(ONS\)](#) and [National Records of Scotland \(NRS\)](#) show that between 2011 and 2015, there were comparatively low GFRs in the Edinburgh, Glasgow and North East city regions, while those in West Midlands, West Yorkshire and Greater Manchester were comparatively high.

These differences in GFRs between city regions are likely to be influenced by socioeconomic and sociocultural differences, including differences in occupation, income, proportion of students, educational attainment and ethnic background. In addition there is likely to be some influence of differing age distributions within those broad age groups (although in practice Edinburgh and West Yorkshire also have a similar share of residents, 23%, in the narrower 23- to 39-year-old age group, which excludes most undergraduates).

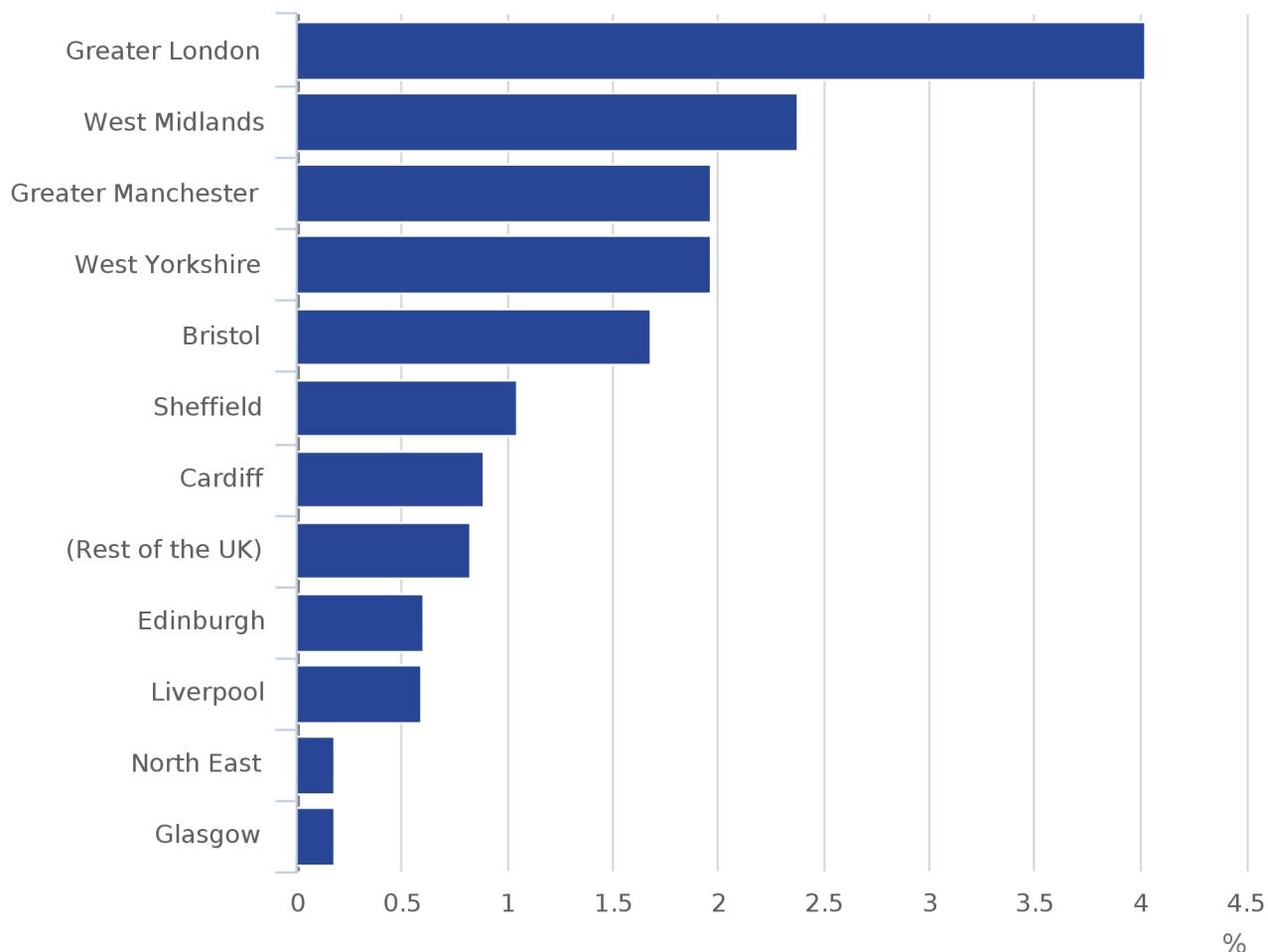
There is also variation in death rates. A clear example is that Glasgow's death rate was over 20% higher than Bristol's between mid-2011 and mid-2015, although both city regions have very similar proportions of people aged 65 and over.

Part of this variation may be caused by differences in the age structure of the 65 and over category. However, the proportion of that category aged 80 and over in mid-2015 is similar in each area, only varying from 25% to 28%, similar to the figure of 27% for the Rest of the UK. More fundamental is the rate of deaths once the age structure of each area has been taken into account, and this varies substantially.

[ONS](#) and [NRS](#) statistics, available at local authority level, indicate that Greater London and Bristol had the lowest age-standardised death rates of all city regions during the period between 2011 and 2015, while Glasgow had the highest. As with the variation in birth rates, socioeconomic and sociocultural factors will play a large role, with some groups having higher mortality than others.

This range of factors affecting birth and death rates combines to produce an overall "birth-death balance", shown in Figure 3.

**Figure 3: Population growth resulting from birth-death balance, city regions and the Rest of the UK, mid-2011 to mid-2015, as a percentage of mid-2011 population**



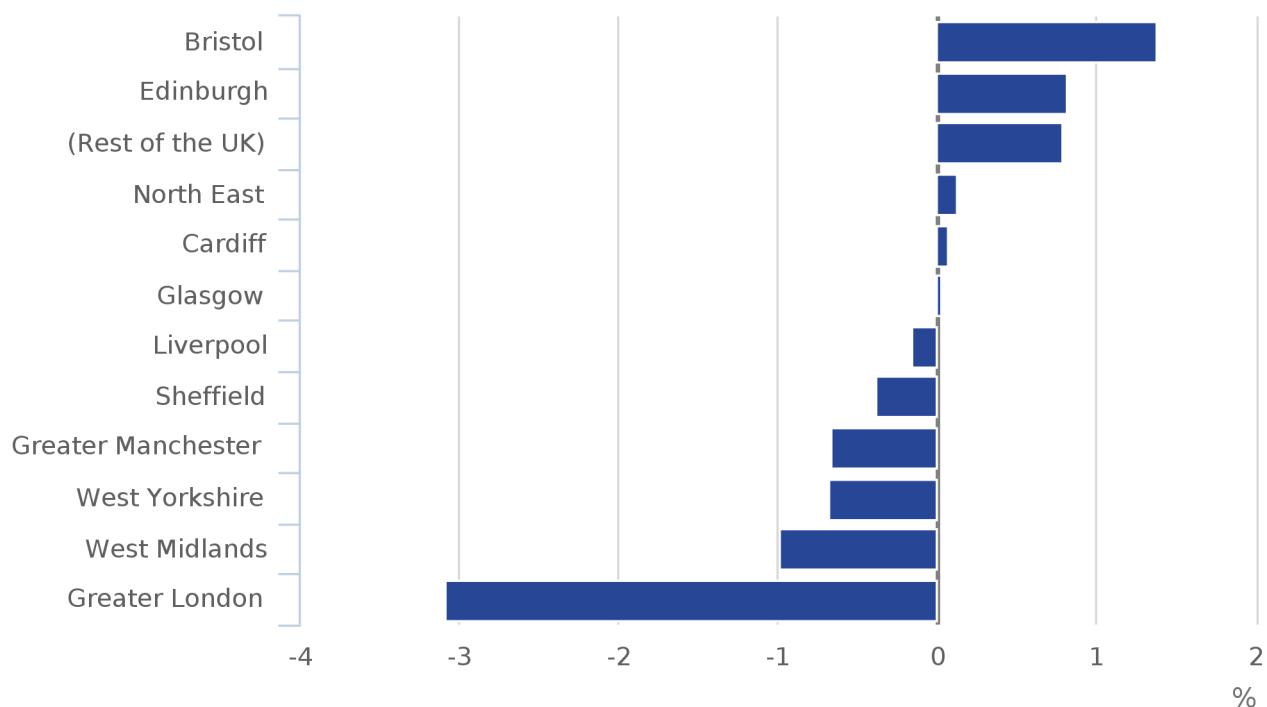
**Source:** Population estimates from the Office for National Statistics (incorporating estimates from National Records of Scotland and the Northern Statistics and Research Agency)

This emphasises the strong percentage growth in Greater London, where the birth-death balance increased the population by 4.0% between mid-2011 and mid-2015. This rate of increase was almost 70% higher than in second-placed West Midlands, where the equivalent figure was 2.4%. At the other end of the scale the birth-death balance in both North East and Glasgow increased the population by just 0.2%, indicating that there were nearly as many deaths as births.

## 4.2 Internal migration

On internal migration estimates too Greater London is distinctive, as demonstrated in Figure 4. Its net internal migration outflow between mid-2011 and mid-2015 was equivalent to 3.1% of its mid-2011 population; this was more than 3 times greater than for West Midlands, the city region with the next highest net outflow rate. Bristol had the highest net inflow rate over this period, at 1.4% of its mid-2011 population.

**Figure 4: Population change resulting from internal migration, city regions, mid-2011 to mid-2015, as a percentage of mid-2011 population**

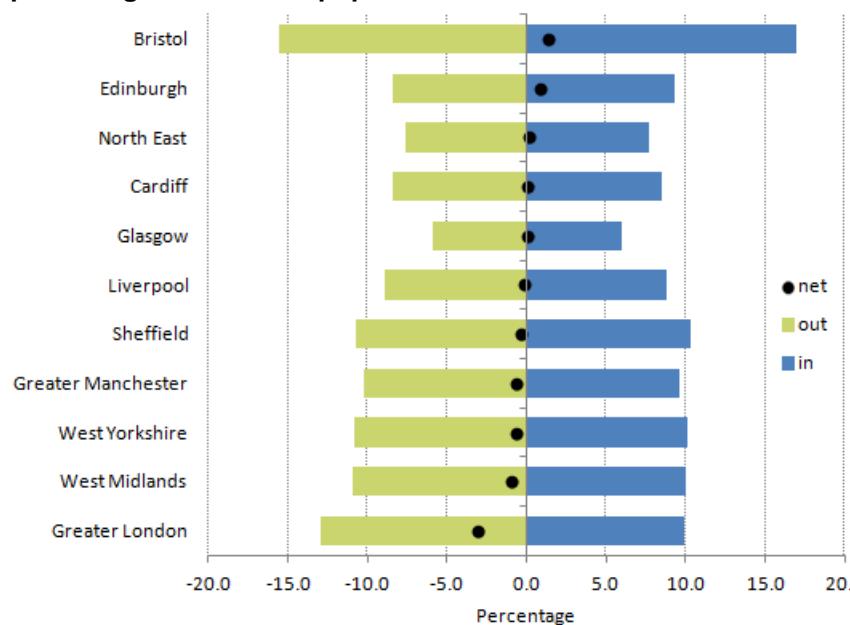


Source: Population estimates from the Office for National Statistics (incorporating estimates from National Records of Scotland and the Northern Statistics and Research Agency)

There is no clear directional relationship between the overall rate of population growth and the amount of change from internal migration. However, it is noticeable that those areas with least growth overall also had comparatively little net change from internal migration.

Figure 5 breaks the net internal migration shown in Chart 4 into inflows and outflows (the available data do not permit calculation of these values for the Rest of the UK). Note that a proportion of the in and out moves for each area will be the same individuals – for example, people who have moved to an area to study and then left after graduation.

**Figure 5: City regions – impact of internal in-, out- and net migration, mid-2011 to mid-2015, as a percentage of mid-2011 population**



The city region with the highest inflows and outflows as a percentage of mid-2011 population was Bristol, and that with the lowest was Glasgow. On both measures the values for Bristol were more than twice those for both Glasgow and North East.

In general the inflow values for each area are comparable with the outflow values so, although the net flows vary, they are comparatively small. Also, unlike many other measures in this report, Greater London's value for inflows is similar to that of several other city regions.

An important contributor to the variation in rates of inflows and outflows will be a range of socioeconomic factors, including the attraction of an area for students or workers, and the propensity of different groups of people to move.

#### **4.2.1 Internal migration by age**

There are many reasons why people may migrate into or out of a city region, and these vary by age. Table 5a shows average annual net internal migration estimates by broad age group over the period mid-2011 to mid-2015, while Table 5b shows this as a percentage of the population in each age group as at mid-2011.

**Table 5a: Average annual net internal migration by broad age group, mid-2011 to mid-2015**

City region	Age (years)						
	0-18	19-21	22-29	30-44	45-59	60+	All ages
Greater London	-31,700	-4,200	34,900	-33,600	-14,300	-14,400	-63,200
Bristol	400	4,700	-500	-100	-600	-200	3,700
West Midlands	100	2,800	-3,100	-2,400	-1,700	-2,400	-6,700
Greater Manchester	-1,000	1,300	200	-1,800	-1,600	-1,500	-4,500
Edinburgh	500	1,900	-900	400	400	400	2,700
West Yorkshire	0	4,500	-5,100	-1,600	-700	-800	-3,700
Sheffield	500	3,200	-3,800	-500	-300	-300	-1,300
Cardiff	400	2,000	-2,100	-300	100	100	200
North East	1,200	3,800	-4,800	-400	400	400	600
Liverpool	400	1,500	-2,300	-300	200	-100	-600
Glasgow	-100	1,100	-100	-500	-100	-200	100
Rest of England and Wales	29,700	-19,700	-13,400	41,000	18,600	19,300	75,500

Sources: ONS internal migration estimates, NRS internal migration estimates (customised data extract provided by NRS)

Notes:

- Because of rounding, figures may not sum.
- Internal migration estimates are based on age at the mid-year (30 June) following the date of the move, rather than age at date of actual move. This allows them to feed directly into mid-year population estimates. The most notable consequence is that most 18-year-olds moving to attend university will be classed as age 19 in the estimates.

**Table 5b: Average annual net internal migration by broad age group, mid-2011 to mid-2015, as a percentage of mid-2011 population in each group**

City region	Age (years) at mid-year following move						
	0-18	19-21	22-29	30-44	45-59	60+	All ages
Greater London	-1.7	-1.3	2.8	-1.6	-1.0	-1.1	-0.8
Bristol	0.2	8.7	-0.4	0.0	-0.3	-0.1	0.3
West Midlands	0.0	2.2	-1.0	-0.4	-0.4	-0.4	-0.2
Greater Manchester	-0.2	1.1	0.1	-0.3	-0.3	-0.3	-0.2
Edinburgh	0.2	3.2	-0.6	0.1	0.1	0.1	0.2
West Yorkshire	0.0	4.4	-2.0	-0.4	-0.2	-0.2	-0.2
Sheffield	0.2	4.6	-2.6	-0.2	-0.1	-0.1	-0.1
Cardiff	0.1	3.0	-1.3	-0.1	0.1	0.0	0.0
North East	0.3	4.2	-2.4	-0.1	0.1	0.1	0.0
Liverpool	0.1	2.1	-1.4	-0.1	0.1	0.0	0.0
Glasgow	0.0	1.4	-0.1	-0.1	0.0	-0.1	0.0
Rest of England and Wales	0.4	-1.6	-0.4	0.6	0.3	0.2	0.2

Source: ONS internal migration estimates, NRS internal migration estimates (customised data extract provided by NRS), ONS population estimates (incorporating NRS and NISRA estimates)

Notes:

1. Because of rounding, figures may not sum.
2. Internal migration estimates are based on age at the mid-year (30 June) following the date of the move, rather than age at date of actual move. This allows them to feed directly into mid-year population estimates. The most notable consequence is that most 18-year-olds moving to attend university will be classed as age 19 in the estimates.

Greater London has most net change from internal migration in both absolute and percentage terms for all age groups apart from 19 to 21. However, its total net outflow only partially offsets the other factors contributing to its comparatively large population increase: a high birth rate, a low death rate and high net international migration.

One Greater London phenomenon is the high number of 0- to 18-year-olds moving out. A likely factor is that the parents of these children are leaving the city to find more affordable accommodation for their growing family. Other city regions have less net movement of 0- to 18-year-olds, with most areas having a small net inflow.

Most moves in the 19 to 21 age group are for study. Higher education institutions tend to be located in cities so city regions usually have a net inflow at this age, with Bristol's being substantially the highest in relation to population size. However, Greater London is the exception in that although it has many universities, it has a net outflow of people in this age group. Contributory factors may include the comparatively large number of young people in London and their higher likelihood of going to [university](#). In addition some people may be deterred from studying in London because of factors such as higher living costs.

Higher education courses in Scotland are typically 4 years long rather than 3, and a larger proportion of students start in the academic year they turn 18, a year earlier than is normal in England and Wales. This will have some impact on the figures for Edinburgh and Glasgow, potentially increasing the number of moves into the 0 to 18 age group and decreasing them in the 19 to 21 group. However, it will not change the broad pattern.

Greater London also stands out in the 22 to 29 age group. While this age group includes people returning home after study, London is particularly attractive to graduates and others because of its employment opportunities. Indeed, London has a higher proportion of graduates in its population than anywhere else in the [EU](#).

Over the same period Greater Manchester had a small net inflow in the 22 to 29 age group, and Bristol, Edinburgh and Glasgow had net outflows much smaller than their net inflows between ages 19 and 21. This suggests that these city regions also attracted or retained a higher number of recent graduates than the number who moved out. The remaining city regions had larger net outflows between 22 and 29.

Between ages 30 and 44, Edinburgh was the only city region with a small net internal migration inflow. Unlike some city regions it has a large and varied physical extent, including extensive rural areas. This means it may appeal to both metropolitan and non-metropolitan lifestyles. The City of Edinburgh is also commonly one of the best-rated places to live in the UK (according to a range of surveys) and this may also mean people are comparatively more likely to move to or remain in the area.

For all other city regions there was a net internal migration outflow between ages 30 and 44, although for several areas this was slight. Once again the most marked flow was for Greater London, with the total number of people leaving being similar to the number arriving between ages 22 and 29. As discussed, the cost of property in London is likely to be important as people in this age group may be looking to buy for the first time, and/or may have children and are looking for suitable accommodation for their family. In addition some people who moved to London after graduation may now have preferred to move elsewhere.

The net outflow from Greater London continues in the age groups 45 to 59 and over 60. Some of this is also likely to relate to people seeking more affordable property and/or raising a family. However, people may also be moving away from London for purely lifestyle reasons, including moves after retirement.

Some of the other city regions experienced net outflow at these ages, but Edinburgh, Cardiff and North East had small net inflows at both 45 to 59 and over 60. Factors that may attract people to Edinburgh have already been discussed, and the geography of the Cardiff and North East city regions, also including extensive rural areas and coastlines, may also be attractive to people seeking a non-metropolitan lifestyle.

For age groups 0 to 18 and those above 30, which have comparatively little net change in the other city regions, the Rest of England and Wales had a consistent inflow, the opposite pattern to Greater London. However, between ages 19 and 29 it had a net outflow, largely reflecting moves into city regions to study or following study. As with all areas there will also be moves in both directions not involving students; these could be purely for work, or for other reasons.

Internal migration estimates are mainly based on data from registrations with NHS doctors. Most people are assumed to re-register quickly following a move but for some groups, especially males in their 20s, re-registration may be much slower or may not occur at all. This and other limitations will inevitably have some impact on the accuracy of the estimates, and this may [vary by area](#).

More analysis of internal migration affecting Greater London was published by ONS in the 2014 article “[Focus on London moves](#)”. NRS has published an [interactive map for Scotland](#) allowing users to investigate where people moved to and from in Scotland in the 12 months up to mid-2015. ONS has a similar [interactive map for England and Wales](#) – this covers the 4 years up to mid-2014.

## 4.3 International migration

Table 6 shows estimated average annual long-term international immigration, emigration and net migration in the 4 years between mid-2011 and mid-2015. The figures use the United Nations definition of a long-term international migrant as somebody who changes their usual place of residence for a period of at least a year. They include all long-term international migrants including, for example, UK-born people who have lived abroad for a period and have now returned to the UK.

**Table 6: Long-term international migration: average annual inflows, outflows and net flows, mid-2011 to mid-2015**

City region	Immigration	Emigration	Net migration
Greater London	192,000	95,000	97,000
Bristol	11,000	7,000	4,000
West Midlands	27,000	13,000	14,000
Greater Manchester	23,000	15,000	9,000
Edinburgh	12,000	8,000	4,000
West Yorkshire	16,000	10,000	6,000
Sheffield	10,000	5,000	5,000
Cardiff	8,000	6,000	2,000
North East	11,000	7,000	4,000
Liverpool	9,000	6,000	3,000
Glasgow	10,000	7,000	3,000
City regions	329,000	177,000	153,000
City regions, not London	137,000	82,000	55,000
Rest of the UK	231,000	147,000	83,000
UK	560,000	324,000	236,000

Source: ONS population estimates (incorporating NRS and NISRA estimates)

Notes:

1. Because of rounding, figures may not sum.

Greater London is the most dynamic city region for international migration. It had 34% of all immigration to the UK and 29% of all emigration from the UK. This compares with its 13% share of the UK population.

London's attraction to immigrants no doubt reflects its status as a major employment centre and international hub. With its high ethnic minority population it may prove especially attractive to people wishing to join family or others from that cultural background. In addition, for people heading to the UK, London is somewhere they are more likely to have some pre-existing awareness of than other parts of the country – perhaps because of previous visits, but also simply because it has a higher profile as the UK capital.

The comparatively high immigration to Greater London affects all its other population dynamics. Most immigrants are young adults and at some point they may have children, contributing to the number of births. Some of them may subsequently decide to move elsewhere in the UK, contributing to Greater London's net outflow for internal migration. In addition, the presence of many comparatively young immigrants contributes to Greater London's relatively youthful age profile and consequent low number of deaths.

Greater London's high share of UK immigration is an explanatory factor in its high share of UK emigration as many emigrants (around 60%) are [former immigrants to the UK](#). However, emigration also covers UK-born people moving abroad.

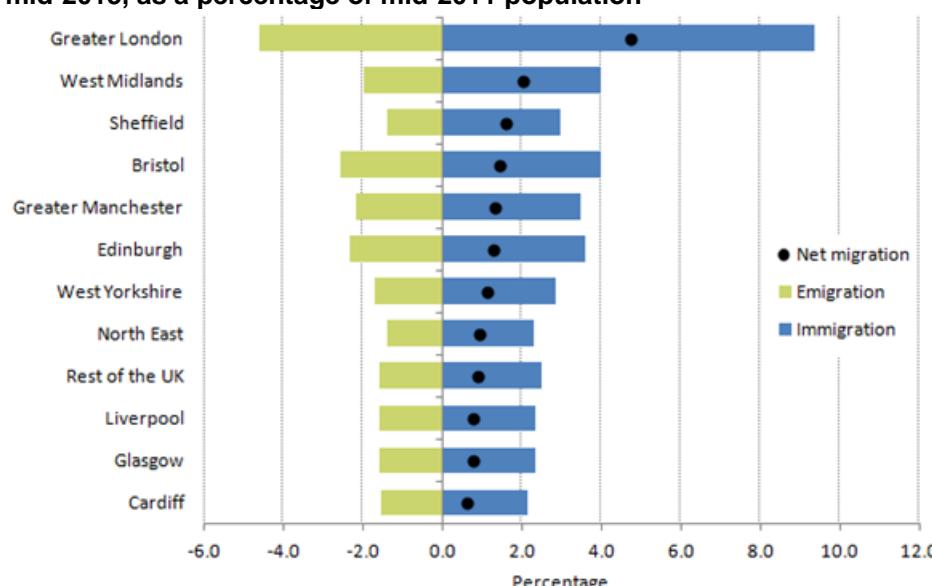
Table 7 reproduces the figures from Table 3 on percentage change resulting from net international migration between mid-2011 and mid-2015, and is sorted on net migration rate. It includes equivalent figures for immigration and emigration and also the “I:E” ratio between number of immigrants and number of emigrants. Figure 6 shows the percentage changes graphically.

**Table 7: Impact of international immigration, emigration and net migration, mid-2011 to mid-2015, as a percentage of mid-2011 population, with ratio between numbers of immigrants and emigrants**

City region	Immigration	Emigration	Net migration	I-E ratio
Greater London	9.4	-4.6	4.8	2.0
West Midlands	4.0	-2.0	2.0	2.0
Sheffield	3.0	-1.4	1.6	2.1
Bristol	4.0	-2.6	1.4	1.6
Greater Manchester	3.5	-2.2	1.3	1.6
Edinburgh	3.6	-2.3	1.3	1.6
West Yorkshire	2.8	-1.7	1.1	1.7
North East	2.3	-1.4	0.9	1.7
Liverpool	2.4	-1.6	0.8	1.5
Glasgow	2.3	-1.6	0.8	1.5
Cardiff	2.2	-1.5	0.6	1.4
City regions	5.0	-2.7	2.3	1.9
City regions, not London	3.0	-1.8	1.2	1.7
Rest of the UK	2.5	-1.6	0.9	1.6
UK	3.5	-2.0	1.5	1.7

Source: ONS population estimates (incorporating NRS and NISRA estimates)

**Figure 6: City regions – impact of international immigration, emigration and net migration, mid-2011 to mid-2015, as a percentage of mid-2011 population**



Greater London's high rates of immigration and emigration stand out, while Bristol had the next highest rate on both measures. Cardiff had the lowest immigration rate and North East had the lowest emigration rate.

In terms of net migration Greater London's percentage population increase from international migration was more than twice that in the city region with the next highest rate, West Midlands. The lowest rate was in Cardiff, followed by Glasgow and Liverpool; these 3 were all below the rate for the Rest of the UK.

As explained there is a link between immigration and emigration levels. However, this is not direct: while Greater London, West Midlands and Sheffield all had around twice as much immigration as emigration, for Cardiff the I:E ratio was only 1.4. The ratios of 1.5 for Liverpool and Glasgow were also lower than the Rest of UK ratio of 1.6. This ratio necessarily affects net migration.

The variation of the I:E ratio is likely to be explained by a range of socioeconomic and sociocultural factors. The likelihood of former immigrants subsequently leaving the UK will be affected by, for example, whether they are a student, the type of work they are doing and their country of origin. Similarly, the likelihood of UK-born people emigrating will be affected by factors such as occupation, socioeconomic class and cultural background.

### **4.3.1 International immigration by age**

Table 8 shows estimated long-term international immigration by broad age group for the 4 years between mid-2011 and mid-2015. Although all city regions are shown, Edinburgh and Glasgow are presented separately at the foot of the table because figures for areas in Scotland are created using a different method.

**Table 8: Long-term international immigrants, percentage in each broad age group, mid-2011 to mid-2015**

City region	0-18	19-21	22-29	30-44	45-59	60+
Greater London	19	9	34	24	9	5
Bristol	16	18	38	18	6	4
West Midlands	17	17	37	19	6	3
Greater Manchester	19	14	35	21	7	4
West Yorkshire	18	14	36	21	7	4
Sheffield	17	17	37	19	6	3
Cardiff	17	15	36	20	7	4
North East	17	18	38	18	6	4
Liverpool	17	16	36	21	6	4
English city regions	19	12	35	22	8	5
English city regions not London	17	16	37	20	6	4
Rest of England and Wales	20	11	32	22	9	6
Edinburgh	15	17	43	20	4	2
Glasgow	17	15	41	20	4	2
Rest of Scotland	19	13	35	23	7	3

Source: ONS population estimates, NRS international migration estimates (customised data extract provided by NRS)

Notes:

- Because of rounding, figures may not sum.

This shows that for all areas the peak age group for immigration was 22 to 29, with only a small proportion occurring at ages 45 and over.

The proportion of immigrants aged 0 to 18 was broadly similar across England and Wales. However, the proportion of immigrants aged 19 to 21 was lowest in Greater London. This is because the figure is reduced by Greater London's comparatively high proportion in some of the older age groups. In addition study is the most important reason for [migration for the youngest adults](#), to whom the spread of educational opportunities across the other city regions makes them comparatively more attractive. It is important to note, however, that its high overall level of immigration (shown in Figure 6) means that Greater London still received 30% of all immigrants to England and Wales in that age group.

The Rest of England and Wales had the lowest proportion of immigrants aged 22 to 29. However, of the city regions Greater London had the lowest proportion (albeit still receiving 38% of the England and Wales total), while for age group 30 to 44 it had the highest. By this period of life [migration for work is dominant](#), so Greater London has obvious attraction.

Greater London also had a comparatively high proportion of immigrants aged 45 and over, but the highest proportion in these age groups occurred in the Rest of England and Wales. For ages 45 to 59, work is still the main reason for immigration, but returning to the UK after living abroad is [more important for older immigrants](#). As work is less of a factor by this stage in life, the city regions are less of a draw.

Compared with all the city regions in England and Wales, Edinburgh and Glasgow have higher proportions of immigrants aged 22 to 29, and lower proportions aged 45 and over. The Rest of Scotland also has a higher proportion aged 22 to 29 than the Rest of England and Wales. However, it is not known how much the different methods affect this.

Specifically, within Scotland the immigration age breakdown is based on the respective year's registration data from the [Scottish NHS Central Register \(NHSCR\) and Community Health Index \(CHI\)](#). For areas in England and Wales it is modelled based on [2011 Census characteristics for each area](#).

### 4.3.2 International emigration by age

Table 9 shows estimated long-term international emigration by broad age group for the 4 years between mid-2011 and mid-2015. As with immigration, Edinburgh and Glasgow are presented separately at the foot of the table because figures for areas in Scotland are created using a different method.

**Table 9: Long-term international emigrants, percentage in each broad age group, mid-2011 to mid-2015**

City region	0-18	19-21	22-29	30-44	45-59	60+
Greater London	7	9	42	31	8	3
Bristol	7	9	41	31	8	4
West Midlands	7	9	40	31	9	4
Greater Manchester	8	9	39	31	9	4
West Yorkshire	8	9	37	32	10	5
Sheffield	8	9	40	31	8	4
Cardiff	8	9	39	32	9	4
North East	7	9	39	32	9	4
Liverpool	7	9	40	31	9	4
English city regions	7	9	41	31	8	4
English city regions, not London	7	9	39	31	9	4
Rest of England and Wales	8	9	38	32	9	4
Edinburgh	13	9	43	25	7	4
Glasgow	15	6	40	26	8	4
Rest of Scotland	17	7	32	25	11	8

Source: ONS population estimates, NRS international migration estimates (customised data extract provided by NRS)

Notes:

- Because of rounding, figures may not sum.

Within England and Wales the age breakdown of international emigration is also modelled, in this case using data from the [International Passenger Survey and the 2011 Census](#). Within Scotland the breakdown is, as with immigration, derived from [Scottish NHSCR and CHI data](#).

Within England and Wales, emigration varies much less between areas than immigration. In addition the proportion of moves for both children and the 19 to 21 age group is much lower than with immigration, while the proportion is higher for the main working adult age groups. One explanation is that, unlike with immigration, there is comparatively little emigration for study – work is the [dominant reason](#).

The profile of the Scottish areas is very different, with a much higher proportion of emigrants aged 0 to 18, but fewer emigrants aged 30 to 44. Edinburgh had a higher proportion of young adult emigrants than Glasgow, which in turn had more than the Rest of Scotland. This is likely to be a reflection of their respective proportions of young adult immigrants, many of whom will have left after a limited period of study or work. As with immigration it is not known how much the different methods from those used for England and Wales affect the comparison.

## 5 . Population change by age group

Within each city region, the numbers in each age group may change at different rates, affecting the overall age structure of the population. Table 10 shows, for each city region, the percentage change in each age group between mid-2011 and mid-2015. This uses the broad age groups presented in Table 4, rather than the more detailed age groups used to indicate specific migration patterns.

**Table 10: Percentage change in population, mid-2011 to mid-2015, by broad age group**

City region	0-15	16-44	45-64	65+	All ages
Greater London	8.3	2.2	9.0	10.0	5.7
Bristol	4.3	4.1	1.8	10.0	4.5
West Midlands	4.2	1.9	3.9	5.8	3.4
Greater Manchester	4.1	-0.6	2.5	9.9	2.6
Edinburgh	1.7	-0.4	2.3	11.3	2.6
West Yorkshire	3.5	-0.9	2.3	10.4	2.4
Sheffield	2.0	-0.4	2.5	8.7	2.3
Cardiff	0.4	-1.3	1.3	10.2	1.6
North East	0.5	-1.7	-0.2	10.4	1.2
Liverpool	1.4	-1.6	0.3	8.7	1.2
Glasgow	-0.5	-2.1	2.9	7.0	1.0
City regions	4.3	0.6	4.0	9.3	3.4
City regions, not London	2.4	-0.3	2.1	9.1	2.3
Rest of UK	2.3	-1.6	2.1	12.0	2.5
UK	3.2	-0.6	2.8	11.0	2.9

Source: ONS population estimates (incorporating NRS and NISRA estimates)

While the changing age distribution of each area is influenced by the components of change discussed in this article, a major factor is the size of each age cohort as they move through the human lifespan.

Specifically, there are more people at some ages than others. This is influenced by both recent and historic levels of births, migration and deaths. Across the UK as a whole the years since mid-2011 have seen more births than there were in the [late 1990s](#), contributing substantially to the increase in size of the 0 to 15 age group. And despite high net international migration, the 16 to 44 age group has reduced in size as those born at the tail end of the 1960s baby boom have moved up to the 45 to 64 group.

The most notable change, however, is the large increase in the number of people aged 65 and over. This has been caused by the large cohorts of people born in the late 1940s – the baby boom after the end of World War II – moving up into this age group.

Although these are broad national trends, differing age distributions between city regions are also important. Greater London's large increase in the 45 to 64 age group is mainly caused by its particularly large entering cohorts (those reaching 45 during this period) in relation to the size of its exiting cohorts (those reaching 65). And the difference in size between the post-WWII baby boom cohorts and the preceding cohorts is smallest in the West Midlands, contributing to its relatively smaller increase for those aged 65 and over<sup>1</sup>.

The births, deaths, internal migration and international migration affecting each area between mid-2011 and mid-2015 will also have had an effect, although they themselves are also affected by age structure. For example, Greater London's 2.2% increase for the 16 to 44 age group is mainly a consequence of net international migration. However, the predominant component in Bristol's 4.0% growth in that age group is internal migration – the high net inflow at student age and comparatively small net outflow thereafter.

## Notes for population change by age group

1.This was calculated from mid-2015 estimates by age, available in the publications of ONS and NRS.

## 6 . Population projections

Population projections indicate potential future change in the population of the area. Table 11 shows the latest official mid-2015 and mid-2025 population projections for each of the city regions and the UK as a whole. The projections are based on a mid-2014 start point for England, Wales and the UK as a whole, and mid-2012 for Scotland (2014-based projections for areas in Scotland will be published by NRS on 27 October 2016). Use of the published projected values rather than the mid-year estimates for 2015 follows recommended practice and ensures methodological consistency.

The projections are based on recent trends for each area, as well as likely future national-level changes to levels of births, deaths and migration determined by analysis of trends over time and expert advice. There are some methodological differences between the constituent countries of the UK, meaning the figures [cannot be compared exactly](#).

**Table 11: Projected population change (principal projections), mid-2015 to mid-2025**

City region	Mid-2015 projection	Mid-2025 projection	% growth 2015-25
Greater London	8,697,000	9,802,000	12.7
Bristol	1,116,000	1,215,000	8.9
West Midlands	2,834,000	3,045,000	7.5
Greater Manchester	2,752,000	2,915,000	5.9
Edinburgh	1,349,000	1,447,000	7.3
West Yorkshire	2,279,000	2,405,000	5.5
Sheffield	1,373,000	1,439,000	4.8
Cardiff	1,504,000	1,558,000	3.6
North East	1,960,000	2,024,000	3.3
Liverpool	1,521,000	1,564,000	2.8
Glasgow	1,797,000	1,837,000	2.2
City regions	27,184,000	29,252,000	7.6
City regions, not London	18,486,000	19,450,000	5.2
Rest of the UK	37,913,000	40,192,000	6.0
UK	65,097,000	69,444,000	6.7

Sources: ONS: National population projections, 2014-based, ONS: Subnational population projections for England, 2014-based, Welsh Government: Local authority population projections for Wales, 2014-based, NRS: Population projections for Scottish areas, 2012-based

Notes:

1. Because of rounding, figures may not sum.
2. The Rest of the UK projections are derived by subtracting the city region projections from the UK projections. Building upwards from the subnational projections would yield marginally different results because of the differing base years and methodologies.

Table 11, like most tables in this report, is ordered by percentage growth between mid-2011 and mid-2015. This demonstrates that the areas that grew fastest during that period also tend to be projected to grow fastest over the next decade, with the most substantial growth projected in Greater London and the least in Glasgow. Excluding Greater London, however, the city regions as a whole are projected to grow more slowly than the Rest of the UK.

As Table 12 shows, there is also considerable variation in projected change in each broad age group.

**Table 12: Percentage change in population (principal projections), mid-2015 to mid-2025, by broad age group**

City region	Age (years) at mid-year				
	0-15	16-44	45-64	65+	All ages
Greater London	13.5	6.4	18.8	24.9	12.7
Bristol	12.8	6.1	3.8	18.4	8.9
West Midlands	9.4	5.5	5.0	13.5	7.5
Greater Manchester	6.8	2.4	3.5	17.6	5.9
Edinburgh	9.6	3.4	0.8	23.1	7.3
West Yorkshire	5.7	1.5	2.8	19.1	5.5
Sheffield	4.8	2.6	-0.4	17.0	4.8
Cardiff	4.0	-0.1	-1.8	18.5	3.6
North East	3.8	0.4	-5.0	19.9	3.3
Liverpool	6.2	-0.8	-4.9	17.9	2.8
Glasgow	3.9	-2.1	-4.0	20.4	2.2
City regions	9.0	3.6	5.6	19.9	7.6
City regions, not London	6.7	2.0	0.2	18.3	5.2
Rest of the UK	6.1	0.5	2.0	21.2	6.0
UK	7.3	1.9	3.4	20.7	6.7

Sources: ONS: National population projections, 2014-based, ONS: Subnational population projections for England, 2014-based, Welsh Government: Local authority population projections for Wales, 2014-based, NRS: Population projections for Scottish areas, 2012-based

Notes:

1. The Rest of the UK projections are derived by subtracting the city region projections from the UK projections. Building upwards from the subnational projections would yield marginally different results because of the differing base years and methodologies.

For all areas the biggest projected increase is in the 65 and over age group – this is again a reflection of more comparatively large cohorts reaching that age group, as well as increasing life expectancy. In this case it is Greater London where the effect is largest. However, it is in the 45 to 64 age group where Greater London continues to distinguish itself most markedly.

The projected increases for the 0 to 15 age group are partly caused by the comparatively small cohorts from the early 2000s moving out of the group. However, they will also be influenced by changes in the number of young adults – potential parents – in each area.

In general the traditional working age groups (16 to 44 and 45 to 64) are projected to grow more slowly than the 0 to 15 and 65 and over age groups. And for Cardiff, North East, Liverpool and Glasgow the traditional working age population is projected to decline.

Projections are useful for planning purposes and give a good idea of “the way things are going”, but they are not predictions – this explains why there was already some difference by the time of the mid-2015 estimates. Both locally and at national level there will inevitably be variation from the projected rates of births, deaths and migration. Changing levels of economic success, both locally and nationally, are likely to be an important factor. And, dependent both on the economic effects and potential changes to migration law, the UK’s June 2016 vote to leave the European Union is likely to have an impact.

## 7 . Conclusions

All city regions have grown in population since 2011 and are projected to continue to grow. Greater London has had, and is projected to have, the most rapid growth. On average the other city regions have grown slightly more slowly than the Rest of the UK (those areas outside the city regions) but there is considerable variation, with the fastest growth in Bristol and the slowest in Glasgow.

The variation in growth rates results from a number of factors. In simple terms population change is a product of births, deaths and migration. However, the existing age structure of the population is influential, in addition to the impact of local fertility and mortality factors. The size of different age cohorts in the population is especially important in explaining changes to the numbers in each age group, most notably the rapid growth in the population aged 65 and over.

Patterns of internal and international migration are very different. While some city regions, notably Bristol and Edinburgh, have had population increase from internal migration, on average there has been a net outflow to the Rest of the UK. On the other hand all areas have seen growth from international migration, with a concentration of immigrants in the 22- to 29-year-old age group.

On most measures shown in this report, Greater London stands out. It is by far the UK’s largest city region but is also the fastest growing. Its comparatively young population age structure means it has a higher birth rate and a lower death rate than other areas. In addition its attraction as the UK capital, a major employment centre and international hub lead to much higher growth from international migration than any other area.

For internal migration, however, Greater London has a high net outflow. Uniquely among the city regions it has a high net internal inflow of people aged 22 to 29, reflecting its attraction for graduates in particular. But in other age groups larger numbers of people move out, with potential reasons including the high cost of property for people forming a family, plus lifestyle choices.

For all the components of population change presented in this report, there are city regions falling either side of the average for the rest of the UK, with the difference between city regions and the UK average varying less than the difference between city regions. This suggests that although they may differ in physical characteristics from other areas of the country, city regions are not inherently distinctive in terms of population dynamics. Instead they vary considerably, but with Greater London markedly different from the rest.

## 8 . Appendix

The city regions in this article are defined as follows:

Greater London – the area covered by the Greater London Authority, including all 33 local authority areas in the London region.

West Midlands – the area of the West Midlands Combined Authority, which covers the area of the West Midlands metropolitan county. This includes the local authority areas of Birmingham, Coventry, Dudley, Sandwell, Solihull, Walsall, and Wolverhampton.

Greater Manchester – the area of the Greater Manchester Combined Authority, which covers the area of the Greater Manchester metropolitan county. This includes the local authority areas of Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford, and Wigan.

West Yorkshire – the area of the West Yorkshire metropolitan county, including the local authority areas of Bradford, Calderdale, Kirklees, Leeds, and Wakefield.

North East – the area of the North East Combined Authority, including the local authority areas of County Durham, Gateshead, Newcastle upon Tyne, North Tyneside, Northumberland, South Tyneside, and Sunderland.

Glasgow – the area of the Glasgow City Region City Deal, including the local authority areas of East Dunbartonshire, East Renfrewshire, Glasgow City, Inverclyde, North Lanarkshire, Renfrewshire, South Lanarkshire, and West Dunbartonshire.

Liverpool – the area of the Liverpool City Region Combined Authority, including the local authority areas of Halton, Knowsley, Liverpool, St. Helens, Sefton, and Wirral.

Cardiff – the area of the Cardiff Capital Region City Deal, including the local authority areas of Blaenau Gwent, Bridgend, Caerphilly, Cardiff, Merthyr Tydfil, Monmouthshire, Newport, Rhondda Cynon Taf, Torfaen, and The Vale of Glamorgan.

Sheffield – the area of the South Yorkshire metropolitan county, including the local authority areas of Barnsley, Doncaster, Rotherham, and Sheffield.

Edinburgh – the area of the proposed Edinburgh and South East Scotland City Region Deal, including the local authority areas of City of Edinburgh, East Lothian, Fife, Midlothian, Scottish Borders, and West Lothian.

Bristol – the area of the West of England Combined Authority, including the local authority areas of Bath and North East Somerset, City of Bristol, North Somerset, and South Gloucestershire.

## 9 . Data sources

We used the following data sources to create the tables and figures in this article:

[Population estimates](#) from the Office for National Statistics (incorporating estimates from National Records of Scotland and the Northern Ireland Statistics and Research Agency)

[Internal migration estimates \(England and Wales\)](#) from the Office for National Statistics

[Internal migration estimates \(Scotland\)](#) from National Records of Scotland (NRS provided ONS with a customised breakdown of internal migration by age)

[International migration estimates \(Scotland\)](#) from National Records of Scotland (NRS provided ONS with a customised breakdown of international migration by age)

[2014-based national population projections](#) from the Office for National Statistics

[2014-based subnational population projections for England](#), from the Office for National Statistics

[2014-based local authority population projections for Wales](#), from the Welsh Government

[2012-based population projections for Scottish areas](#), from National Records of Scotland