Projected Population of Scotland (2016-based)

National population projections by sex and age, with UK comparisons

Published on 26 October 2017

A National Statistics publication for Scotland

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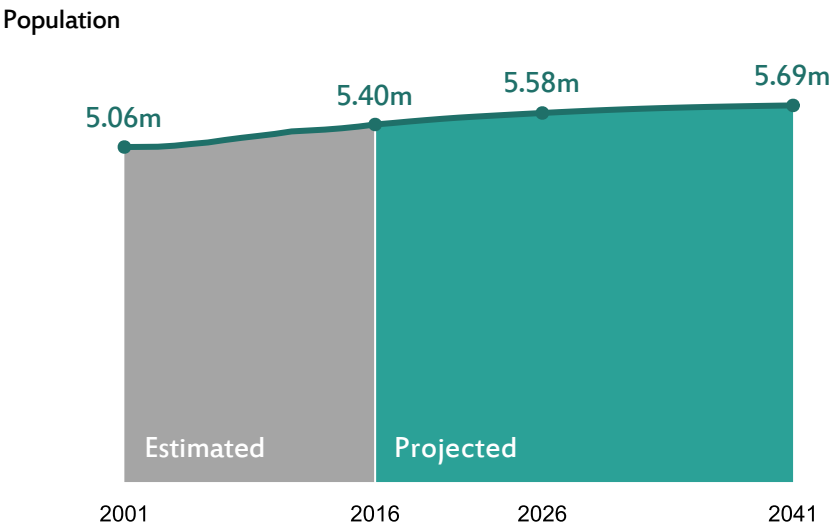
Scotland's population is projected to increase

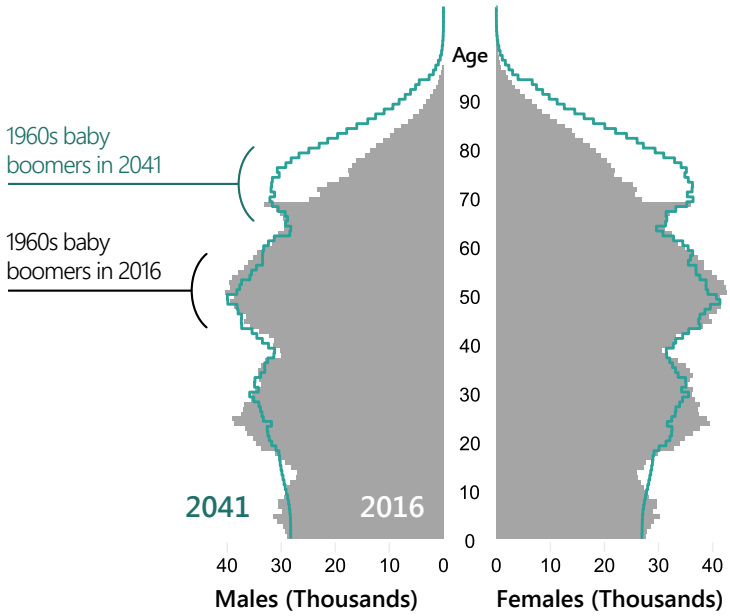
The population of Scotland is projected to rise from 5.40 million in 2016 to 5.58 million in 2026, and to continue to rise to 5.69 million in 2041 – an increase of 5% over the 25 year period.



Scotland's population is projected to age

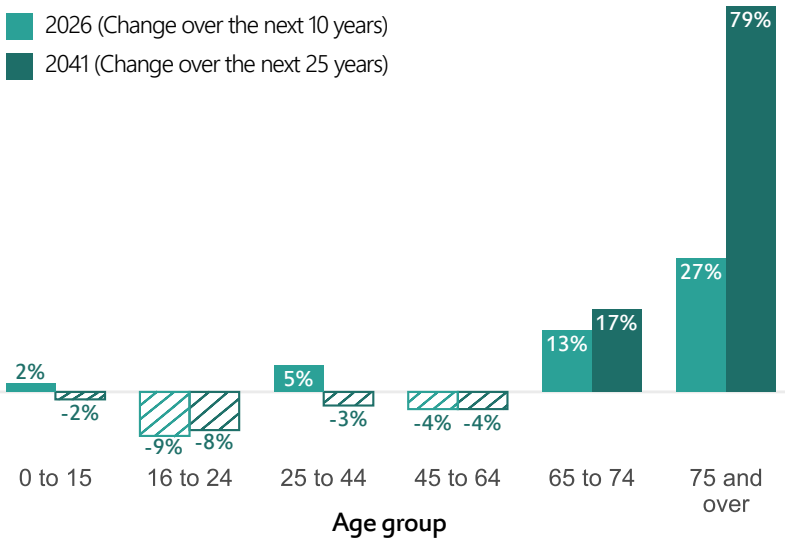
The population is projected to age as the large number of people around age 50 in 2016 become age 75 by 2041.

This is the effect of baby boomers of the 1960s ageing over the next 25 years.

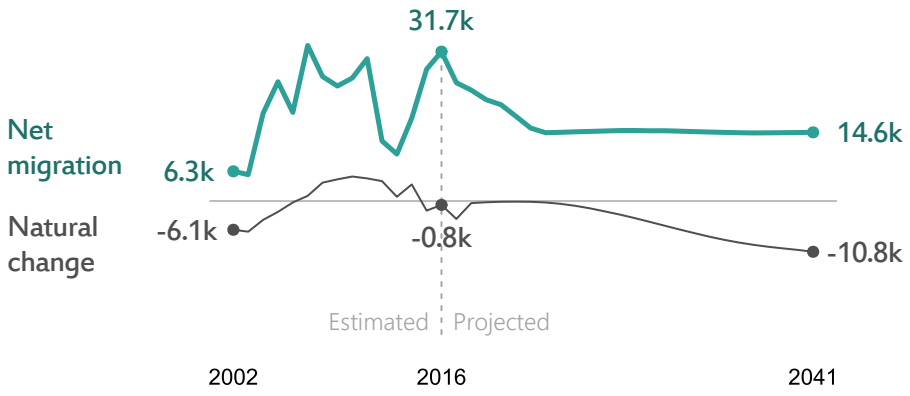


Scotland's elderly population is projected to increase

People aged 75 and over are projected to be the fastest growing age group in Scotland. The number of people aged 75 and over is projected to increase by 27% over the next ten years and by 79% over the next 25 years.



Number of persons

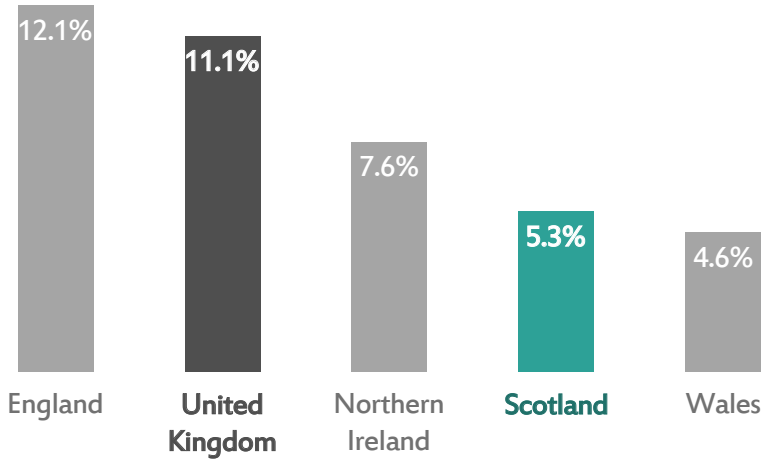


Why is Scotland's population projected to increase?

All of the projected increase in Scotland's population over the next 25 years is due to net in-migration to Scotland.

The number of deaths is projected to be higher than the number of births every year over this period.

Percentage change 2016 to 2041

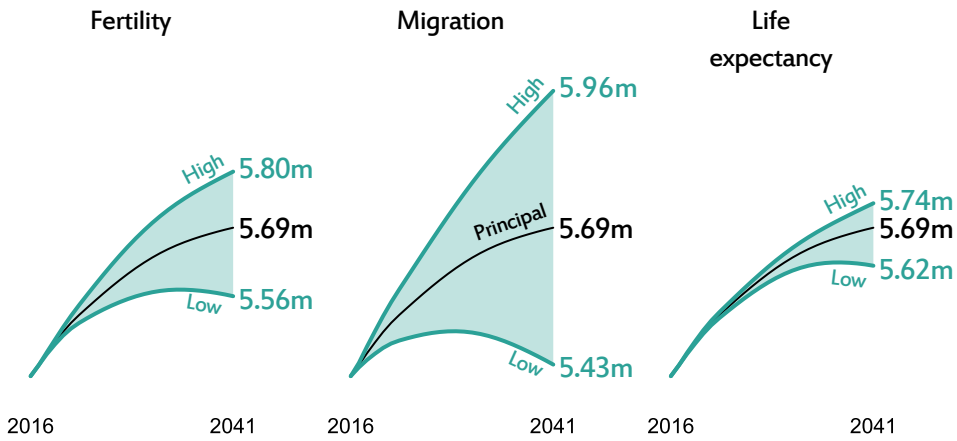


How does Scotland compare with the rest of the UK?

Scotland's projected population growth of 5.3% over the next 25 years compares with a figure of 11.1% for the UK as a whole.

Only Wales is projected to experience a lower level of population increase than Scotland.

Projected population under different variant assumptions



The level of projected population change varies under different assumptions

Variant projections give an idea of the uncertainty around projections, and show the effect on the projected population under different plausible assumptions about fertility, mortality and migration.

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1. Main Points

- The population of Scotland is projected to rise from 5.40 million in 2016 to 5.58 million in 2026, and to continue to rise to 5.69 million in 2041 – an increase of 5% over the 25 year period.

- All of the projected increase in Scotland's population over the next 10 years is due to net in-migration to Scotland. 58% of net in-migration is projected to come from overseas over this period, with 42% from the rest of the UK.

- Natural change (the number of births minus the number of deaths) is projected to be negative in each year of the projection. By 2041 it is projected that there will be over 10 thousand more deaths than births each year.

- The population of working age[1] is projected to increase from 3.43 million in 2016 to a peak of 3.59 million in 2028 (an increase of 5%). It is then projected to decline to 3.47 million by 2041. Overall there is a 1% projected increase over the 25 year period.

- The population is also projected to age, with people aged 75 and over projected to be the fastest growing age group in Scotland. The number of people aged 75 and over is projected to increase by 27% over the next ten years and increase by 79% over the next 25 years.

- Life expectancy for females is projected to increase to 84.5 years over the next 25 years from the most recent estimate of 81.2 (an increase of 3.4 years) around 2015. Males are projected to experience a larger increase in life expectancy of 4.6 years, from 77.1 years around 2015 to 81.7 years in 2041.

- Over the next 25 years, the number of people of pensionable age and over[1] per 1,000 working age population is projected to increase from 307 to 380. The number of children per 1,000 working age population is projected decrease from 267 to 260 over the same period.

- The populations of the other countries in the UK are also projected to increase. The UK as a whole is projected in increase in population by 11%, with England's population projected to increase by 12%, Northern Ireland's population by 8% and Wales's population by 5% between 2016 and 2041.

Footnote

1) The figures for working age and pensionable age and over take into account the changes in the state pension age as set out in the 2014 Pensions Act. Between 2016 and 2018, the state pension age will rise from 63 to 65 for women. Then between 2019 and 2020, it will rise from 65 years to 66 years for both men and women. A further rise in state pension age to 67 will take place between 2026 and 2028. At the time of publication, the state pension age is due to rise to 68 years between 2044 and 2046. However, a Pension Age Review published in March 2017 by the UK Government recommends bringing the rise to 68 forward to between 2037 and 2039. However, this recommendation has not yet been passed into legislation, so the figures presented here do not include this change. More information is available in the Pension Age Review final report on the UK Government website.

2. Introduction

2.1. Production

The Office for National Statistics (ONS), on behalf of the National Records of Scotland (NRS), prepares population projections for the United Kingdom and its constituent countries every two years. The projections are based on the most recently available mid-year population estimates and a set of underlying demographic assumptions regarding future fertility, mortality and migration. More information on these assumptions is available in section 8 of this publication.

The results in this paper concentrate on results over the next 10 years to 2026 and over the next 25 years to 2041, although ONS makes available projections up to 2116. However, the projection this far ahead becomes increasingly uncertain.

As well as producing the main principal projection, variant projections using alternative plausible assumptions are also produced. The nine variants included in this publication are: high fertility, low fertility, high life expectancy, low life expectancy, high migration, low migration, high population, low population and zero migration (natural change only). More information on the variant projections is available in Section 7.

2.2. Methodology and additional information

Details on the projections methodology is available in the National Population Projections Quality and Methodology Information section of the ONS website.

Some additional tables showing more detailed figures for Scotland can be found within the Projected Population for Scotland section of the NRS website, whilst full results of the (2016-based) projections can be found on the ONS website.

2.3. Uses of projections

Population projections are used for a variety of purposes including resource allocation and planning of services such as education and health. They are also used for informing local and national policy, teacher workforce models and looking at the implications of an ageing population.

2.4. National Statistics

The UK Statistics Authority (UKSA) has designated this publication as National Statistics, in line with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics. The UKSA reassessed NRS population estimates and projections in 2016 and published a letter of confirmation as National Statistics, available on their website. Further information can be found in the UK Statistics Authority-Assessments section on the NRS website.

3. Limitations of projections

When using a projection it is important to note some key limitations.

- A projection is a calculation showing what happens under certain assumptions about future fertility, mortality and migration. More information on the assumptions underlying the 2016-based projections is available in Section 8.

- The assumptions are based on past trends and do not take account of any future changes that may occur as a result of policy initiatives but may reflect the past impact of policy and economic changes. These projections are not, therefore, forecasts of what the government expects to happen based on policy.

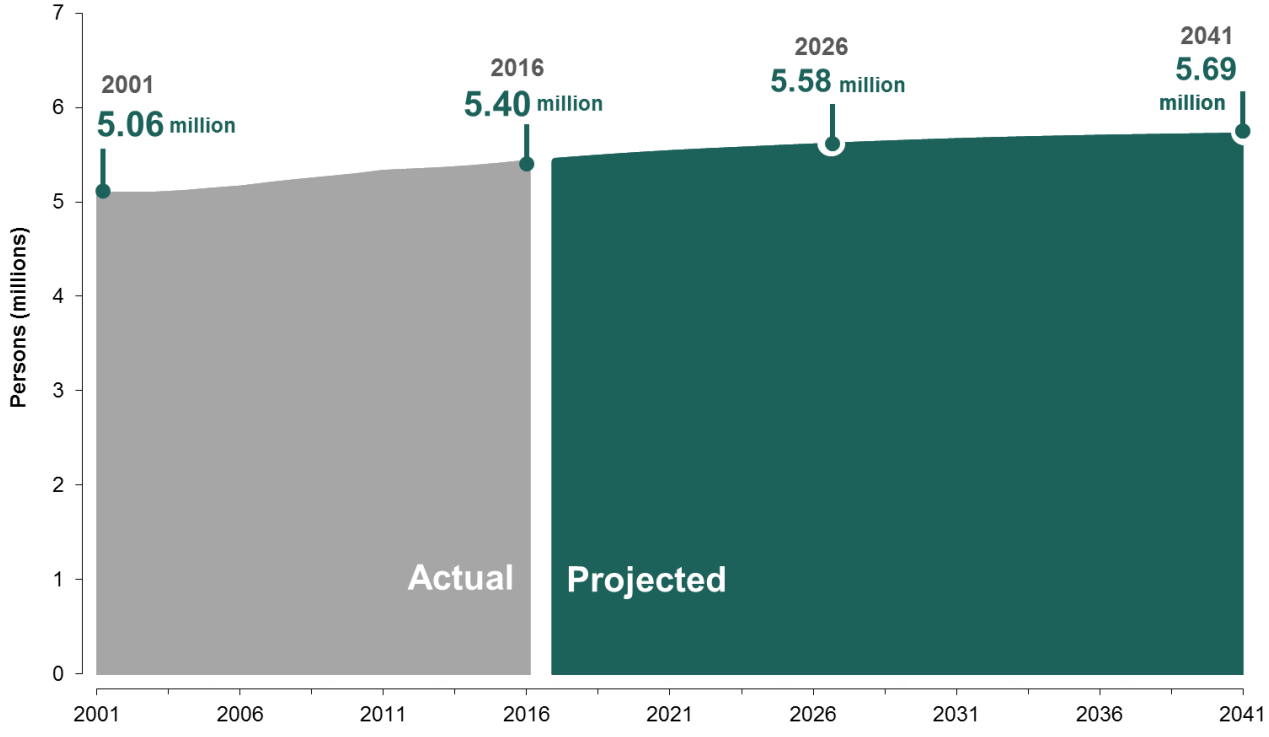
More information is available in the uses and limitations of projections section of the NRS website.

4. Results

4.1. The population of Scotland is projected to increase

Scotland's population has increased over the last 15 years, from 5.06 million in 2001 to the latest estimate of 5.40 million in 2016. Figure 1 shows that the population is projected to rise to 5.58 million over the next 10 years, an increase of 174,000 (3.2%). It is then projected to continue to increase to 5.69 million in 2041, an increase of 289,000 (5.3%) from 2016.

Figure 1: Estimated and projected[1] population of Scotland, 2001-2041



Footnote
1) 2016-based projections.

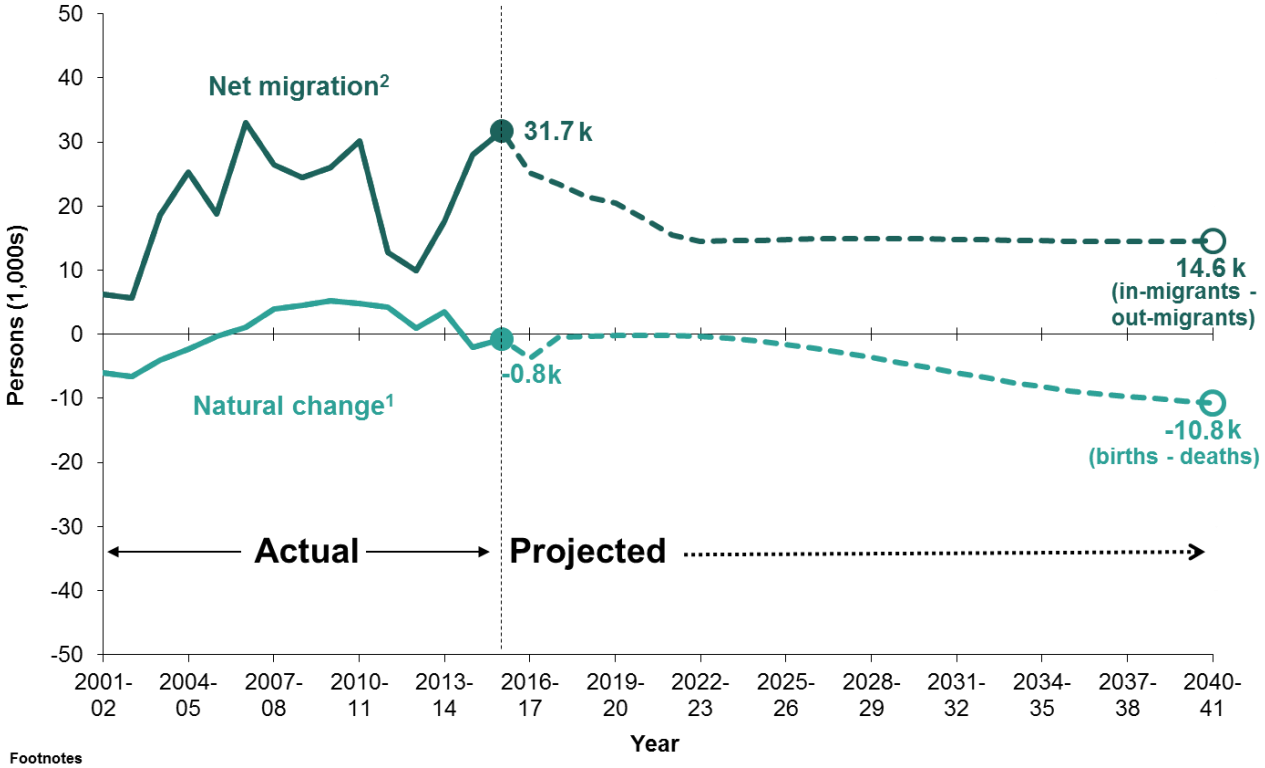
4.2. Why is the population projected to increase?

All of the projected increase in Scotland's population is due to net inward migration to Scotland. This is because net migration is projected to remain positive in each year of the projection, whereas natural change (the number of births minus the number of deaths) is projected to be negative each year.

Figure 2 shows that in recent years, net migration has been a more significant factor in Scotland's population increase than natural change. In 2015-16, net in-migration to Scotland was positive at 31,700, while there were 800 more deaths than births (negative natural change).

Net migration is projected to remain positive in each year of the projection. Although it is projected to decrease from the level observed in 2015-16, with around 14,600 more people arriving in Scotland than leaving in 2040-41. Natural change is projected to be negative in each year of the projection. In the year 2040-41 there are projected to be around 10,800 more deaths than births.

Figure 2: Natural change[1] and net migration[2], 2001-02 to 2040-41



Footnotes
1) Births minus deaths.
2) Inward minus outward migration.

4.3. **Where are migrants projected to come from?**

Figure 3 illustrates recent trends and the projections for net migration between Scotland and the rest of the UK and between Scotland and overseas. Over the last decade, net in-migration to Scotland from overseas has been larger than net in-migration to Scotland from the rest of the UK. Around 72% of net migration to Scotland from mid-2006 to mid-2016 was from overseas, with 28% from the rest of the UK.

Net migration from overseas is projected to initially remain higher than net migration from the rest of the UK. From the year 2022-23 onwards, however, net migration from the rest of the UK is projected to be higher than net migration from overseas. Overall, over the next 10 years 58% of net inward migration is projected to come from overseas, with 42% from the rest of the UK.

Net migration from overseas is projected to decrease from the latest estimate of 22,900 in 2015-16 to 7,000 in 2040-41. Net migration from the rest of the UK is also projected to fall, but by far less; from 8,800 in 2015-16 to 7,600 in 2040-41.

4.4. **In and out migration flows**

As well as looking at net migration (the difference between immigration and emigration), it is also helpful to consider the flows of in-migrants and out-migrants separately. In recent years migration to Scotland from the rest of the UK has been higher than migration from overseas and this is projected to continue, as shown in Figure 4.

In-migration to Scotland from the rest of the UK is projected to increase slightly from the latest estimate of 46,300 in 2015-16 to 47,100 in 2040-41, with out-migration from Scotland to the rest of the UK is also projected to increase from 37,500 to 39,500 in the same period.

In-migration to Scotland from overseas, however, is projected to decrease substantially from 40,400 in 2015-16 to 30,500 in 2040-41, while out-migration to overseas is projected to increase from 17,500 to 23,500 over the same period.

Figure 3: Net rest of UK and net overseas migration, actual and projected, Scotland, 2001-02 to 2040-41

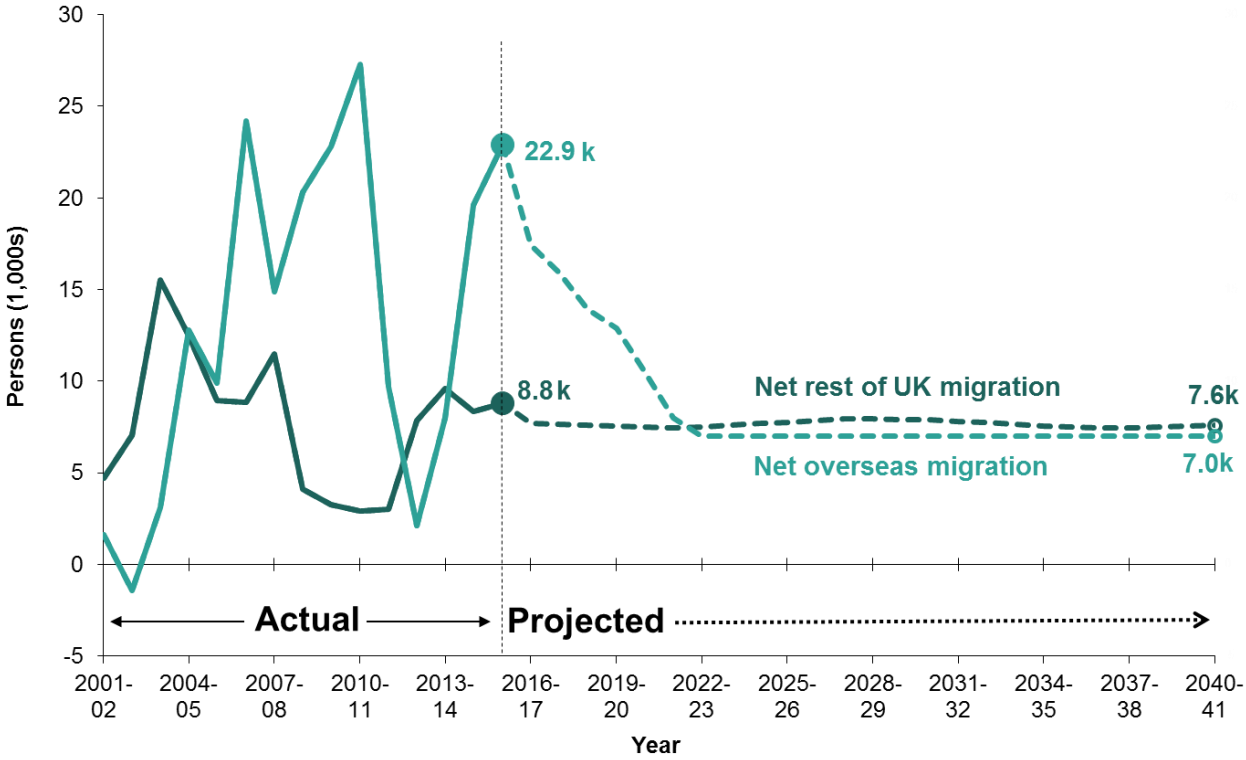
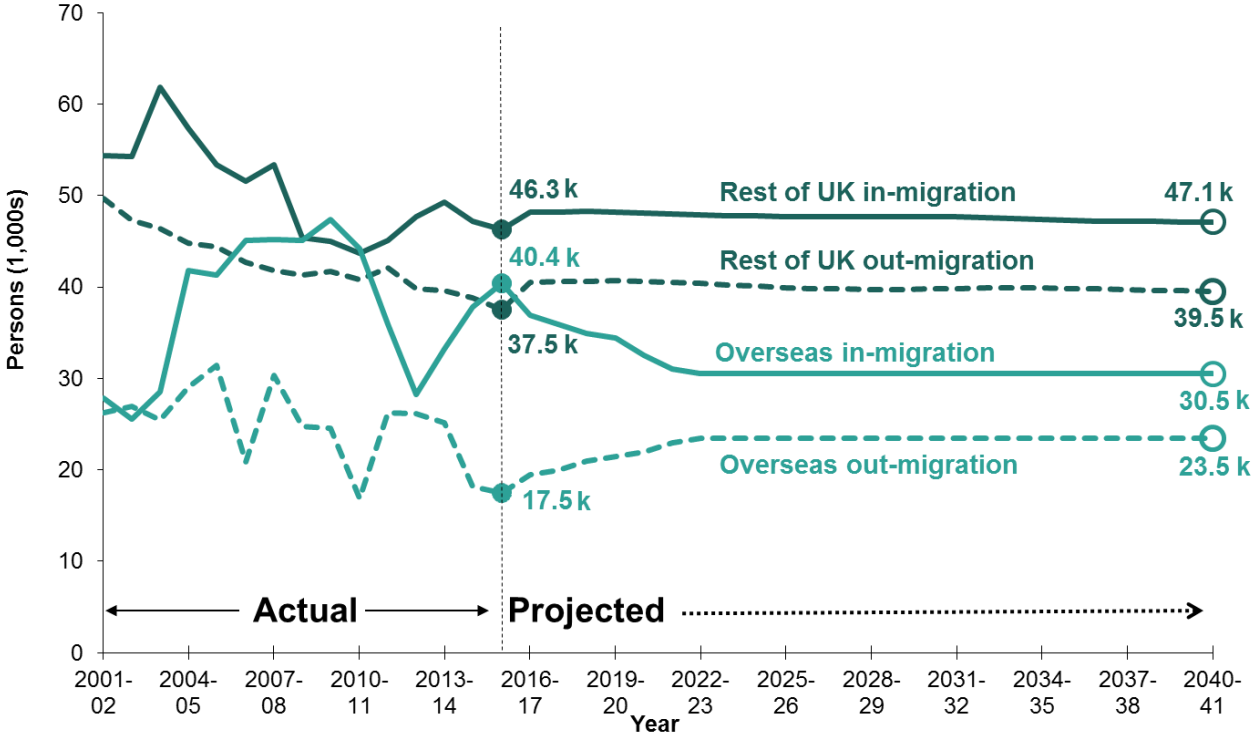


Figure 4: In and out migration between Scotland and the rest of UK and overseas, actual and projected, 2001-02 to 2040-41



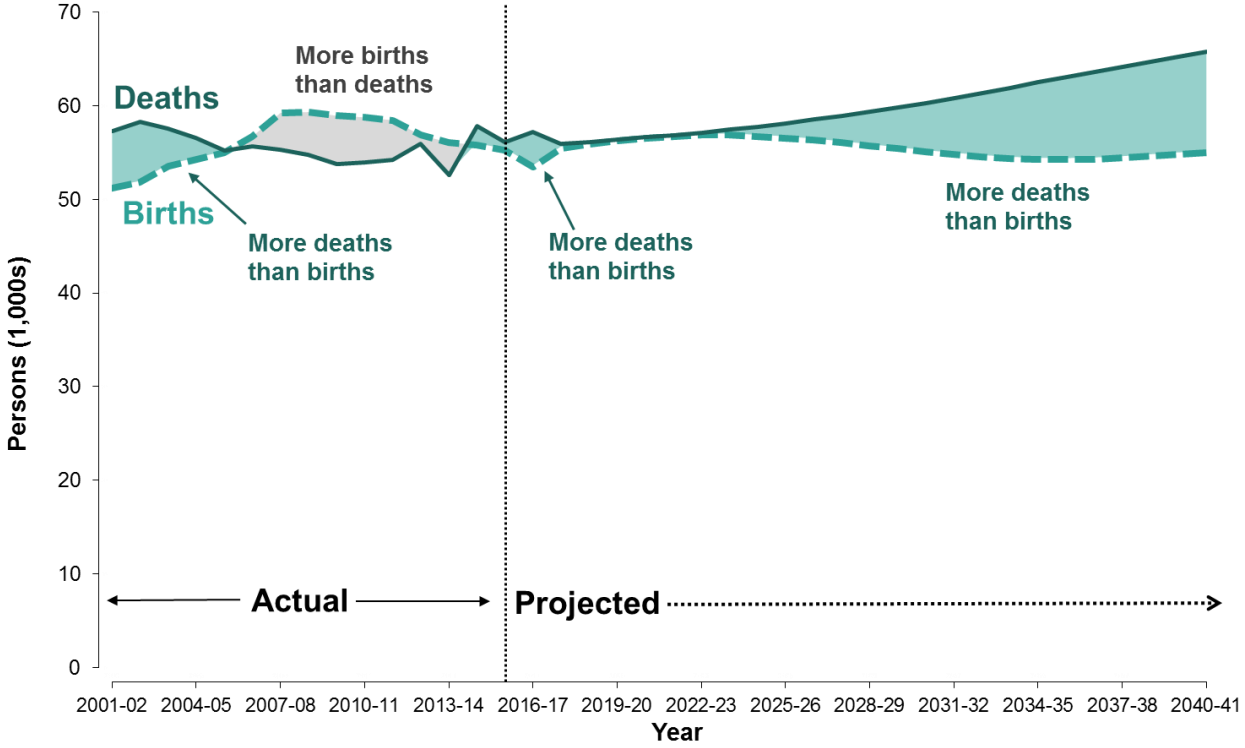
4.5. **What are the projections for births and deaths?**

As Figure 5 shows, from 2001-02 to 2005-06 there were more deaths than births in Scotland. This was followed by a period of more births than deaths from 2006-07 to 2013-14, before the number of deaths again exceeded the number of births in 2014-15 and 2015-16.

The projected figures show that the number of deaths is projected to be higher than the number of births in every year from 2016-17 to 2040-41. From 2017-18 to 2023-24, the number of births and deaths are projected to be similar, with less than 1,000 more deaths than births each year during this period.

Beyond 2024, the number of deaths each year is projected to increase with births remaining at a broadly similar level. This means that by the year 2038-39 there are projected to be 10,000 more deaths than births each year in Scotland.

Figure 5: Births and deaths, actual and projected, Scotland, 2001-02 to 2040-41

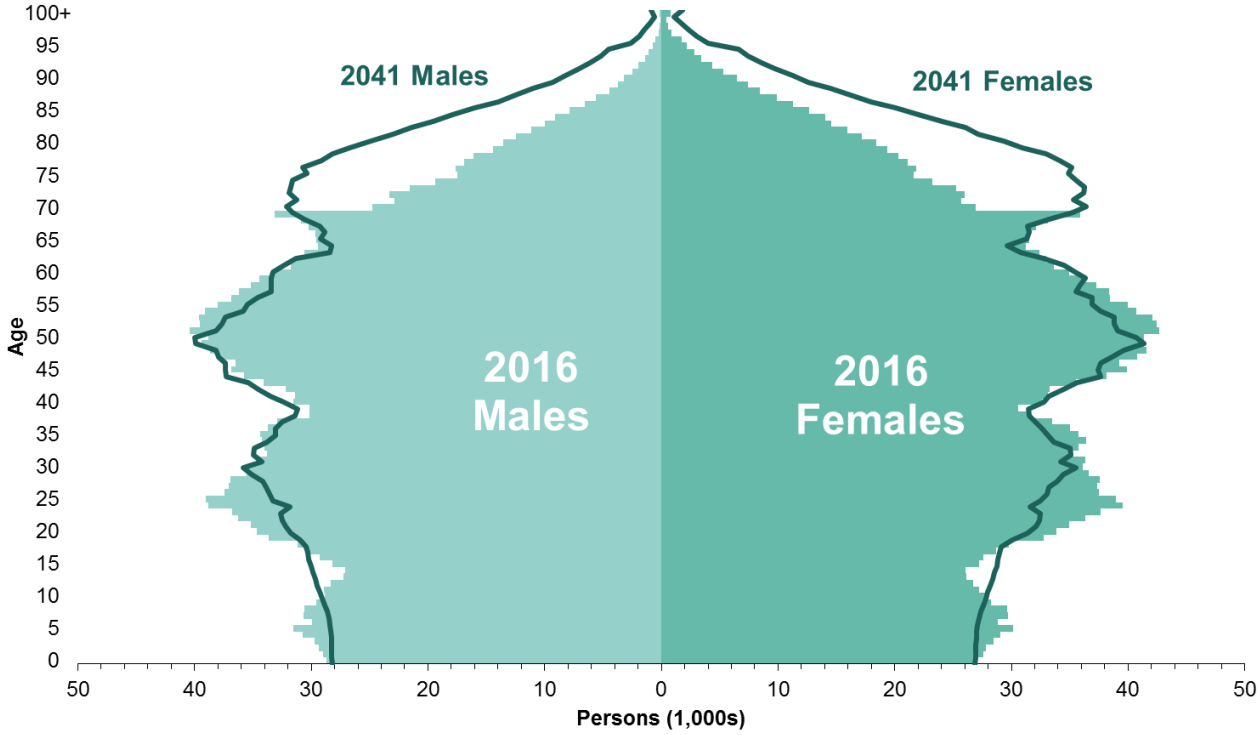


4.6. **How is the age and sex structure of Scotland's population projected to change?**

A population pyramid is a good way of illustrating the age and sex structure of the population. Figure 6 represents the population of Scotland as estimated in mid-2016 and projected for mid-2041. Each bar in the pyramid represents a single year of age and the length of the bar relates to the number of people of that age in the population. The solid bars represent the estimated population for mid-2016 and the lines represent the projected population in mid-2041.

Figure 6 shows that Scotland's population is projected to age. You can see the bulge in the population pyramid that appears around age 75 in 2041. This is the result of the 'baby boomer' generation, represented by the bulge around age 50 in 2016, ageing over the next 25 years.

Figure 6: Estimated and projected age structure of Scotland's population, mid-2016 and mid-2041



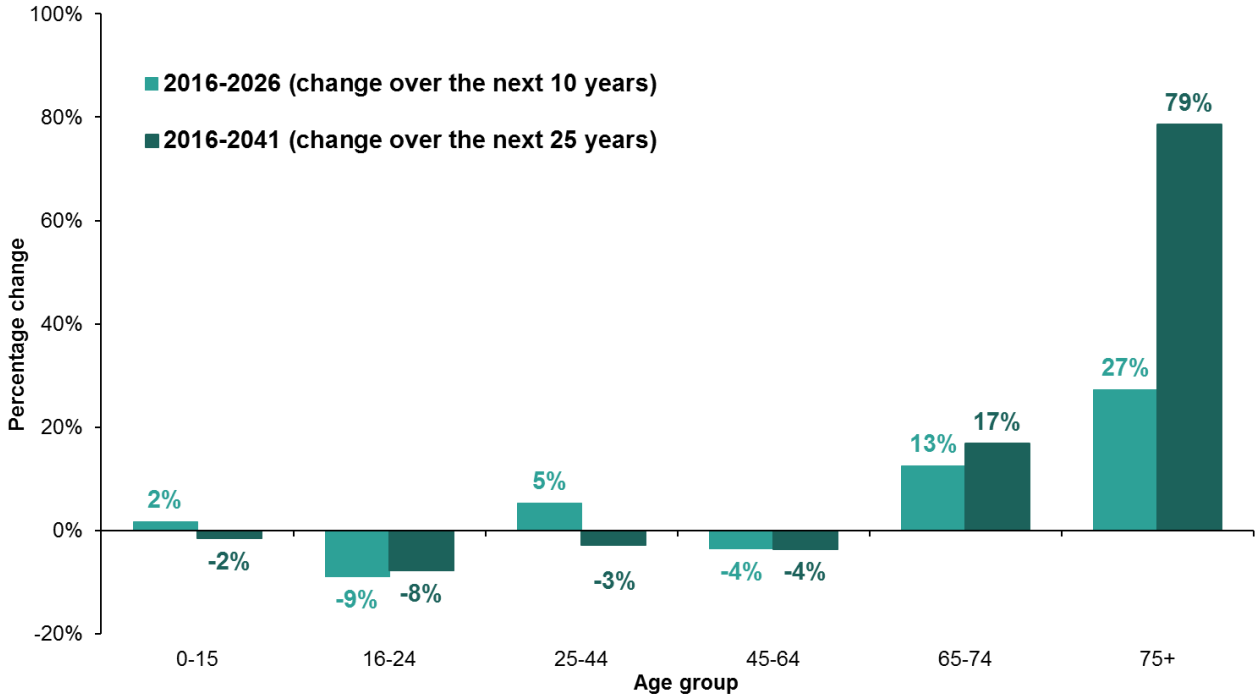
4.7. **Projected change in Scotland's population by age group**

The projected ageing of the population can also be shown by breaking down the changes by age group, as shown in Figure 7.

Over the next 10 years, there is projected to be a decline in population in the 16-24 age group (9% decrease) and the 45-64 age group (4% decrease). There are modest increases of 2% and 5% for people aged 0-15 and 25-44 respectively. However, the largest percentage increases in population are projected for the oldest age groups, 65-74 (13% increase) and 75 and over (27% increase).

Over the next 25 years, the ageing of the population is projected to become even more pronounced. There is a larger increase projected for the 65-74 age group (17% increase) and the 75 and over age group, which is projected to experience a very large increase of 79%. All the other age groups below age 65 are projected to decline in population over the next 25 years to 2041.

Figure 7: The projected percentage change in Scotland's population by age group, 2016-2026 and 2016-2041



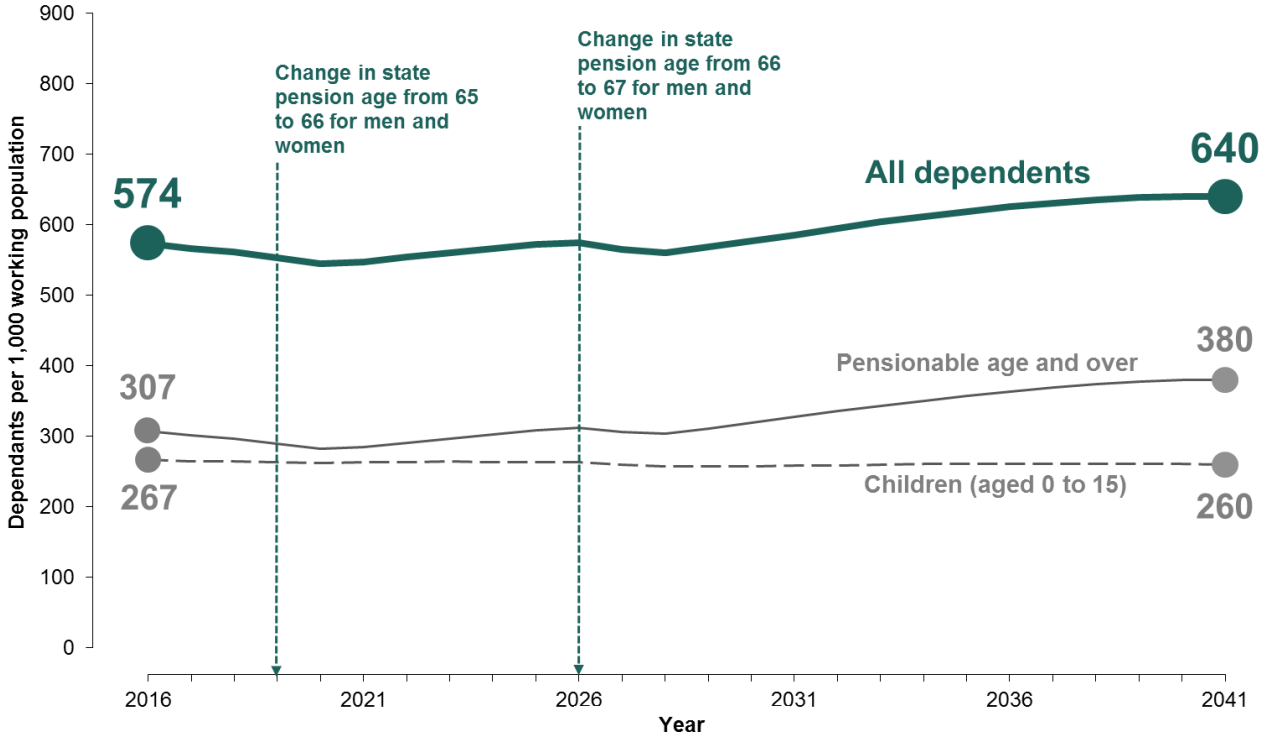
4.8. Projected changes in dependency ratios

A useful summary measure of the age structure of a population is the dependency ratio which is shown in Figure 8. Dependency ratios can be defined in different ways, but here are defined as the number of children aged under 16 and the number of people of state pension age and over per 1,000 people of working age. These ratios should be interpreted with care. For example, a simple interpretation is the number of older people or children who are 'dependent' on the working age population, the assumption being that most older people and children are not economically active. The reality is of course much more complex, since – to give just a few reasons – many people of typically working age are unemployed or economically inactive (for example at school or university), the age at which people retire varies greatly and many retired people are financially independent. However, these 'dependency' ratios provide a useful way to examine the relative age structure of the population.

Figure 8 shows the total number of dependents per 1,000 people of working age[1] is projected to increase from 574 in 2016 to 640 in 2041. The increase in the dependency ratio is due to the increase in the number of people of pensionable age per 1,000 working age population. The dependency ratio for children is projected to decline slightly from 267 per 1,000 working age population in 2016 to 260 in 2041. For people of pensionable age there is projected to be an increase in the dependency ratio from 307 pensioners per 1,000 working age population in 2016 to 380 in 2041.

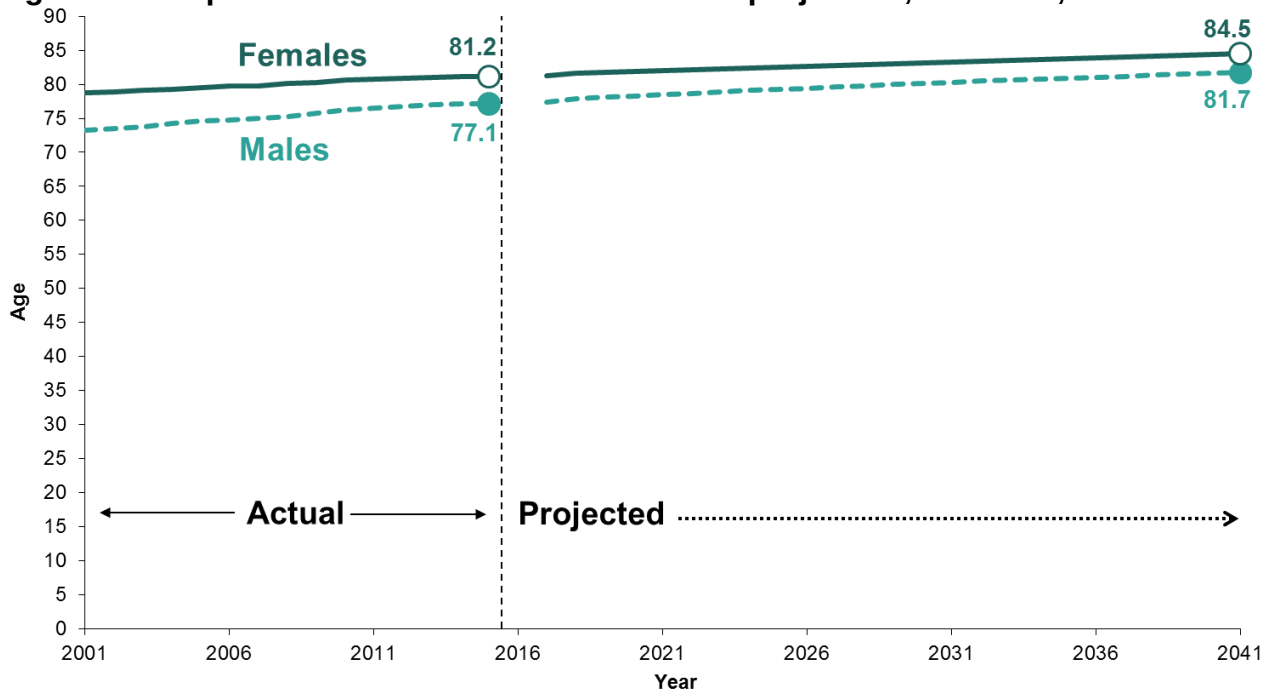
The effect of the changes in state pension age are also visible, with a decline in the dependency ratio for people of pensionable age between 2016 and 2021 as the pension age for women increases to 65 from 2016 to 2018 then increases to 66 for men and women from 2019 to 2020. Another decline occurs after 2026 as the state pension age increases to 67 between 2026 and 2027.

Figure 8: Projected dependency ratios (per 1,000 working population), 2016-2041



4.9. **How is life expectancy projected to change in the future?**
Figure 9 shows that life expectancy for females is projected to increase to 84.5 years over the next 25 years from the most recent estimate of 81.2 years for those born around 2015 (an increase of 3.4 years). Males are projected to experience a larger increase in life expectancy of 4.6 years, from 77.1 years for those born around 2015 to 81.7 years in 2041.

Figure 9: Expectation of life at birth actual[1] and projected[2], Scotland, 2001-2041



Footnotes
1) Figures to 2015 are based on three years of data. For example 2015 figure uses data for 2014-2016.
2) 2016-based mid-year projections. Projected data starts at mid-2017.

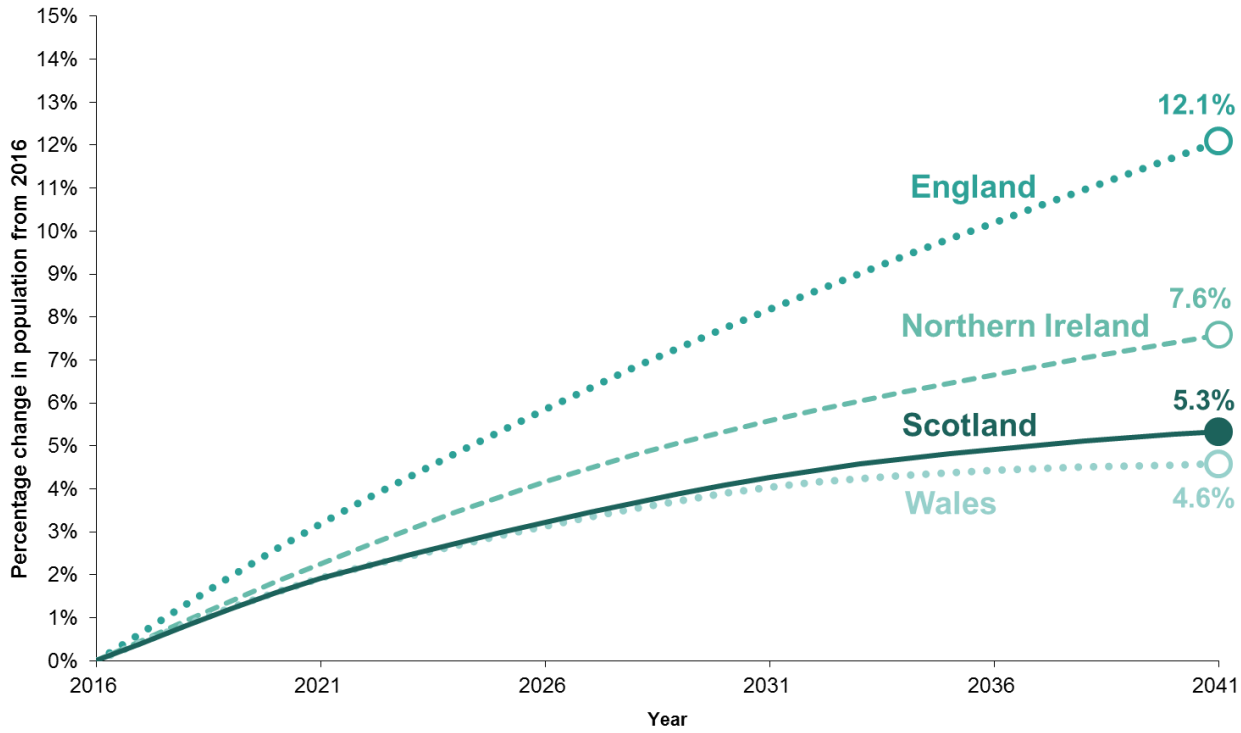
5. Scotland's position within the United Kingdom

5.1. Projected changes in total population across the UK

The UK population is projected to increase from an estimated 65.6 million in 2016, rising above 70 million in 2029 and reaching 72.9 million by 2041. Over the 25 year period this equates to an 11.1% increase.

Figure 10 illustrates the projected change in the populations of the four countries of the United Kingdom from 2016 to 2041. It shows that the populations of England and Northern Ireland are projected to grow more quickly than those of Scotland and Wales. By 2041 England's population is projected to be 12.1% higher than in 2016, Northern Ireland's is projected to be 7.6% per cent higher and Wales's 4.6% higher. During the same period Scotland's population is projected to grow by 5.3%.

Figure 10: Percentage population change for UK countries, 2016-2041



5.2. Projected changes by age group across the UK

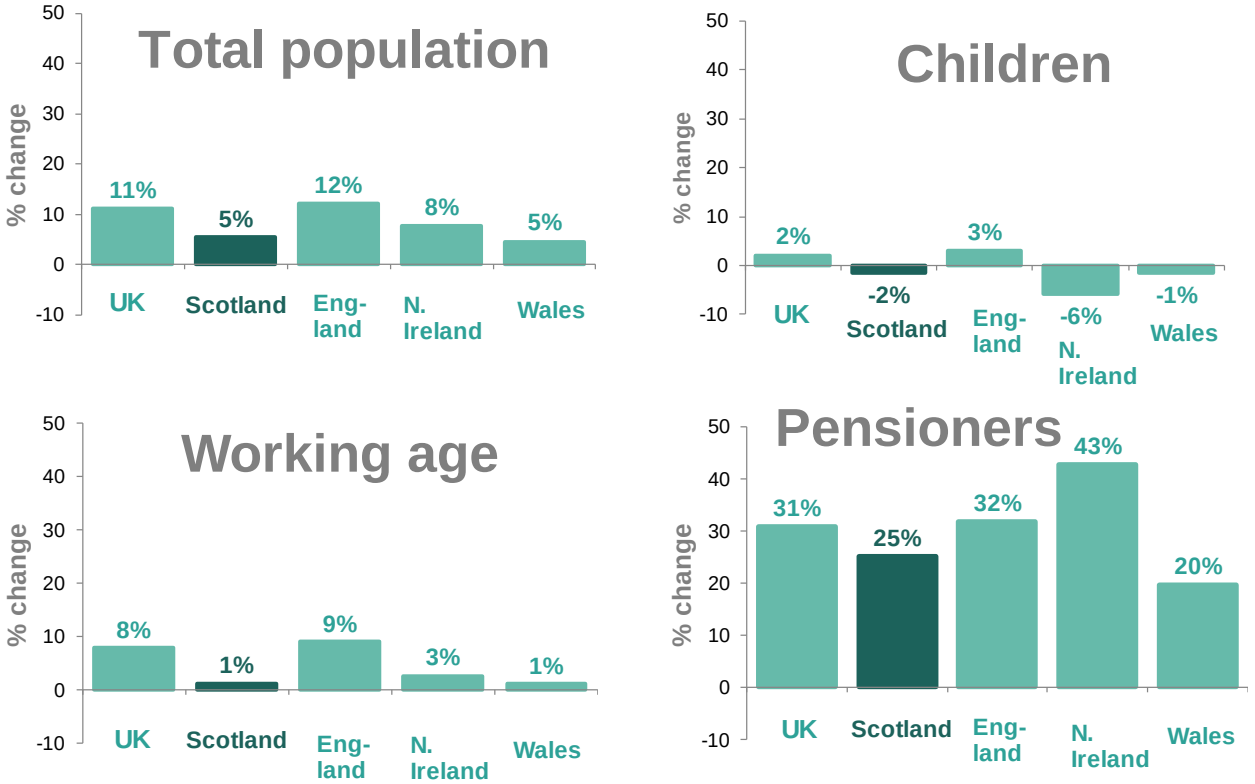
Figure 11 shows the breakdown of the projected change in population across the UK by age group. The largest increase in population across all countries is projected to be for people of pensionable age[1]. Northern Ireland's pension age population is projected to increase by 43% from 2016 to 2041, with Scotland's pension age population projected to increase by 25% and the UK increase projected to be 31%.

The number of children is projected to decrease by 2% over the next 25 years in Scotland, compared with an increase of 2% in the UK as a whole. The biggest projected decrease in the UK is projected for Northern Ireland (6%).

The working age[1] population is projected to increase in every country across the UK. However, Scotland's working age population is projected to increase by only

1% over the next 25 years, compared with the UK figure of 8%. The UK figure is driven by the projected increase for England's working age population of 9%.

Figure 11: Projected percentage change in population across the UK, by age group, 2016-2041



5.3. **Why is the population projected to increase across the UK?**

Table 1 shows the components of population change for each of the four UK countries over the next 25 years. In Scotland and Wales, all of the projected growth in population over the next 25 years is due to net in-migration. Both countries are expected to experience more deaths than births over this period. On the other hand, the majority of the projected growth in the population of Northern Ireland is due to natural change, with positive net migration from overseas being partially offset by net out-migration to the rest of the UK. Most of the projected increase in the population of England is projected to be due to net in-migration from overseas, with positive natural change also a significant factor in population growth. A smaller component of England's projected population change over the next 25 years is net out-migration to the rest of the UK.

Table 1: Projected components of population change across the UK, 2016-2041

Country	Estimated population 30 June 2016	Total Births 2016-2041	Total Deaths 2016-2041	Natural change (births minus deaths) 2016-2041	Net rest of UK migration 2016-2041	Net overseas migration 2016-2041	Estimated population 30 June 2041	Population change	
								Number	%
UK	**65,648,054**	**19,171,100**	**16,327,000**	**2,844,100**	**0**	**4,412,500**	**72,904,500**	**7,256,500**	***11.1***
Scotland	5,404,700	1,385,300	1,499,700	-114,400	191,300	211,600	5,693,200	288,500	*5.3*
England	55,268,067	16,387,500	13,522,200	2,865,300	-204,300	4,023,100	61,952,100	6,684,100	*12.1*
Northern Ireland	1,862,137	564,000	436,800	127,300	-23,500	37,500	2,003,400	141,300	*7.6*
Wales	3,113,150	834,300	868,400	-34,100	36,500	140,300	3,255,800	142,700	*4.6*

Note
All figures relate to the cumulative projected totals from 2016 to 2041 and are summed to the nearest 100.
Totals may not sum due to rounding.

6. Scotland's position within Europe

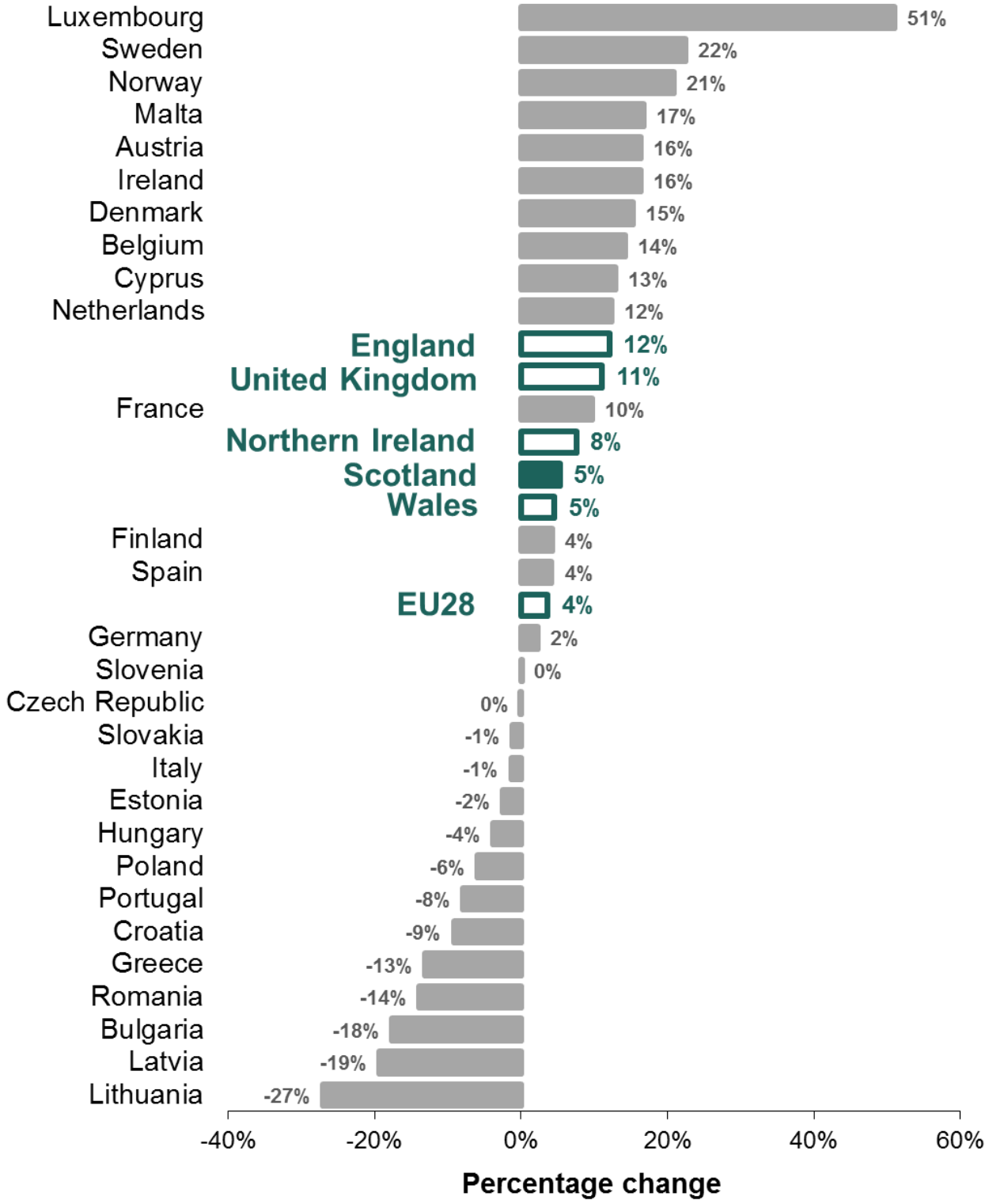
The population increase projected in Scotland is repeated across the majority of countries across Europe[2].

Figure 12 shows the population of the European Union (EU-28) is projected to increase by 4% between 2016 and 2041, meaning that Scotland's projected increase of 5% is above the EU average. Luxembourg is projected to experience the largest population increase of 51%. However, Italy, Greece and Portugal as well as most of the EU-8 countries, the EU-2 countries and Croatia, are projected to experience a population decline. The biggest decline in population over the next 25 years is projected in Lithuania, a decline of 27%.

Footnote

2) The Eurostat EUROPOP15 projections of population in selected European countries (found on the Eurostat website) are not directly comparable to the Office for National Statistics (ONS) projections of population in the countries of the UK. The Eurostat projections are based on estimates of the population at 1 January 2015 to 1 January 2081 while the ONS projections are based on estimates of the population at 30 June 2016 to 30 June 2116. The methodologies in determining the underlying fertility, mortality and migration assumptions also differ.

Figure 12: Projected percentage population change in selected European countries, 2016-2041



Source: Office for National Statistics (ONS) (UK and constituent countries) and Eurostat.

7. Variant projections

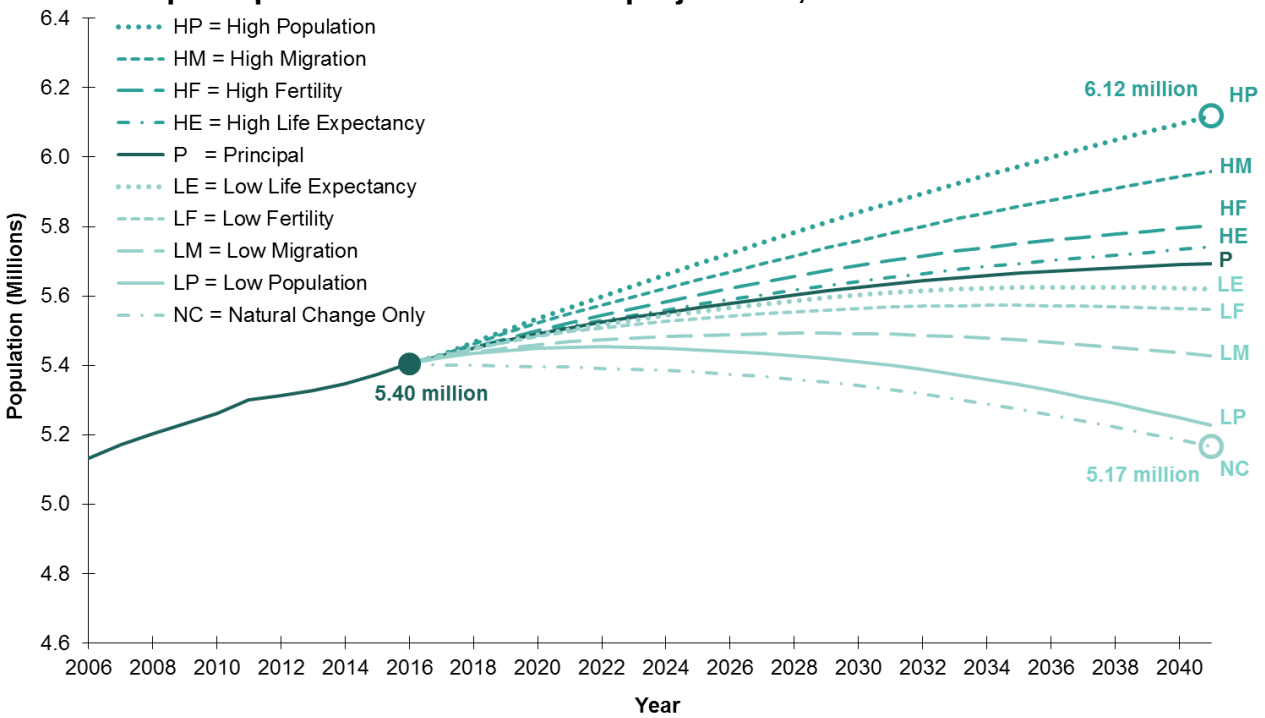
This report concentrates on the principal projection but ONS also produces a number of variant projections. These variant projections are based on alternative assumptions of future fertility, mortality and migration. The variants are produced to give users an indication of the inherent uncertainty of demographic behaviour, especially for the long-term projections. The purpose is to illustrate plausible alternative scenarios and not to represent upper or lower limits for future demographic behaviour. These projections are simply scenarios (the certain outcome of a given set of assumptions), rather than forecasts of the most likely course of future events.

The scenarios in this publication, in addition to the principal projection, are six standard high/low variants associated with the three components of fertility, life expectancy and migration, a special case zero migration variant (with natural change only), and the combination variants which produce the high and low population. These final two variants are produced by combining the high (or low) variant assumptions for fertility, life expectancy and migration.

7.1. Total projected population under different variant assumptions

Figure 13 shows the projected population under the different variant assumptions. The high population variant projects an increase in the population to 6.12 million in 2041 (13% increase) from the latest estimate of 5.40 million in 2016. The natural change only variant projects the lowest population in 2041 of 5.17 million, a 4% decrease.

Figure 13: Actual and projected total population of Scotland, under the 2016-based principal and selected variant projections, 2006-2041



7.2. What are the assumptions used in each of the variant projections?

The assumptions for the principal and each of the variant projections are shown in Table 2. The assumptions for the long term total fertility rate vary from a low of 1.45 to a high of 1.75. For life expectancy the differing mortality assumptions result in a range of 79.8 years to 82.9 years for male life expectancy in 2041 and 82.8

years to 85.6 years for females. The low and high assumptions for net migration from overseas range from -1,500 to 15,500 in 2041. More detail on these assumptions is available in Section 8.

Table 2: Assumptions for the 2016-based principal and variant projections for Scotland

Variant	Long-term fertility (Total Fertility rate - TFR)	Life expectancy males (2041)	Life expectancy females (2041)	Net migration from the Rest of the UK (2041) (rounded to the nearest 100)	Net migration from overseas (2041) (rounded to the nearest 100)	Total Net migration (2041) (rounded to the nearest 100)
Principal projection	**1.65**	**81.7**	**84.5**	**7,600**	**7,000**	**14,600**
High population	1.75	82.9	85.6	8,300	15,500	23,800
High Migration	1.65	81.7	84.5	8,000	15,500	23,500
High Fertility	1.75	81.7	84.5	7,900	7,000	14,900
High Life expectancy	1.65	82.9	85.6	7,600	7,000	14,600
Low Life expectancy	1.65	79.8	82.8	7,500	7,000	14,500
Low Fertility	1.45	81.7	84.5	7,200	7,000	14,200
Low Migration	1.65	81.7	84.5	7,200	-1,500	5,700
Low population	1.45	79.8	82.8	6,800	-1,500	5,300
Natural change only	1.65	81.7	84.5	0	0	0

7.3. What are the projected components of change for each variant?

Table 3 shows the components of population under the principal and each of the variant projections from 2016 to 2041. This allows the impact of the differing assumptions to be illustrated. Under every variant projection, except the high population variant, natural change is projected to be negative between 2016 and 2041 (there are projected to be more deaths than births).

Net migration between Scotland and both the rest of the UK and overseas is projected to be positive in every variant except the natural change only variant. However, in the low migration and low population variants net in-migration from overseas is projected to only be 3,500 over the 25 years period.

Table 3: Components of population change for the 2016-based principal and variant projections for Scotland, 2016 to 2041

Variant	Estimated population 30 June 2016	Total Births 2016-2041	Total Deaths 2016-2041	Natural change (births minus deaths) 2016-2041	Net migration between Scotland and the rest of the UK 2016-2041	Net migration between Scotland and overseas 2016-2041	Estimated population 30 June 2041	Population change	
								Number	%
Principal projection	**5,404,700**	**1,385,300**	**1,499,700**	**-114,400**	**191,300**	**211,600**	**5,693,200**	**288,500**	***5.3***
High population	5,404,700	1,556,800	1,458,900	97,900	197,800	419,900	6,120,300	715,600	*13.2*
High Migration	5,404,700	1,445,600	1,506,100	-60,500	195,100	419,900	5,959,200	554,500	*10.3*
High Fertility	5,404,700	1,492,200	1,500,000	-7,800	193,700	211,600	5,802,200	397,500	*7.4*
High Life expectancy	5,404,700	1,385,500	1,452,600	-67,100	191,500	211,600	5,740,700	336,000	*6.2*
Low Life expectancy	5,404,700	1,385,000	1,573,100	-188,100	191,100	211,600	5,619,300	214,600	*4.0*
Low Fertility	5,404,700	1,254,300	1,499,300	-245,000	188,700	211,600	5,560,000	155,300	*2.9*
Low Migration	5,404,700	1,324,900	1,493,300	-168,400	187,400	3,500	5,427,200	22,500	*0.4*
Low population	5,404,700	1,200,300	1,565,700	-365,400	184,700	3,500	5,227,500	-177,200	*-3.3*
Natural change only	5,404,700	1,253,500	1,491,900	-238,400	0	0	5,166,400	-238,300	*-4.4*

Note
All figures relate to the cumulative projected totals from 2016 to 2041 and are summed to the nearest 100.
Totals may not sum due to rounding.

7.4. **Additional variant projections**

The Office for National Statistics (ONS) also produces projections for Scotland for up to 100 years ahead. Projection results for the next 100 years are available from the ONS website. The reliability of projections decreases as you go further into the future. Therefore projections far into the future should be treated with caution.

Additional variants using alternative assumptions about future EU migration have also been published. These are available from the Population Projections page of the NRS website. It should be noted, however, that these variants have been produced for illustrative purposes only and are not classed as National Statistics.

8. Methodology, the base population and assumptions used in the projections

8.1. Methodology

The 2016-based national population projections are based on the estimated population at 30 June 2016 and a set of demographic assumptions about future fertility, mortality and migration based on analysis of trends and expert advice. The assumptions underlying the 2016-based national population projections are compared with those used for the 2014-based projections in Table 4.

The population is projected using the cohort component method. This involves taking the population at the beginning of the year, adding births and removing deaths and then applying the in and out migration to the population.

More information on the method used to produce these projections is available from the National Population Projections Quality and Methodology section of the Office for National Statistics website.

8.2. The base population

The projection is based on the National Records of Scotland population estimates for mid-2016. The population covered includes all persons usually resident in Scotland, whatever their nationality. Members of HM forces and non-UK armed forces stationed in Scotland are included; HM forces stationed outside Scotland are excluded. Students are treated as being resident at their term-time address.

8.3. Past trends

The assumptions about future patterns in fertility, mortality and migration are based on analysis of past trends. The final decisions on assumptions take into account the views of a range of groups who are consulted including a UK expert advisory panel and key users in Scotland.

8.4. Fertility

In the projections, ‘fertility’ is taken to mean the total number of children a woman would have, on average, at the end of her child-bearing years. It is sometimes expressed as ‘completed family size’. The long-term total fertility rate for Scotland is assumed to be 1.65. The number of births is expected to decrease initially from its 2015-16 level of 55,300 to 53,400 in 2016-17 before increasing to a peak of 56,800 in 2022-23 before falling again to 55,000 by 2040-41.

Table 4: Assumptions for the 2016-based and 2014-based principal projections, Scotland and the UK

	Scotland		United Kingdom	
	2014-based principal projection	2016-based principal projection	2014-based principal projection	2016-based principal projection
Long-term fertility (Total Fertility rate - TFR)	**1.70**	**1.65**	**1.90**	**1.80**
Life expectancy males (2041)	82.5	81.7	84.3	83.6
Life expectancy females (2041)	85.2	84.5	87.1	86.4
Net migration from the Rest of the UK (2041)	5,600	7,600	0	0
Net migration from overseas (2041)	9,500	7,000	185,000	165,000
Total Net migration (2041)	15,100	14,600	185,000	165,000

Note

Net migration figures have been rounded to the nearest 100.

8.5. **Mortality**

Future improvements in mortality rates are based on the trend observed in the period 1961 to 2015. Based on these rates, expectations of life at birth are projected to increase from 77.1 around 2015 to 81.7 in 2041 for males; and from 81.2 around 2015 to 84.5 in 2041 for females as shown in Figure 9. The improvement in mortality rates vary by age from 2016-2041, but all ages converge towards a long term improvement in the mortality rate of 1.2% per year in the long term.

8.6. **Migration**

Migration between Scotland and the rest of the UK is calculated using a rates based model based on trends in migration between the constituent countries of the UK over the last five years. Net in-migration from the rest of the UK is projected to remain fairly stable between 7,400 and 8,000 per year over the next 25 years.

Long-term net migration between Scotland and overseas is calculated using a 25 year average of migration trends. The long-term assumptions are applied after a seven year period in which net in-migration from overseas is projected to fall from the 2015-16 level of 22,900 to the long-term assumption of 7,000 per year. Significantly, from 2022-23 onwards, net in-migration from the rest of the UK is projected to be higher than net in-migration from overseas. This is different from the 2014-based projections, where long-term net migration from overseas was higher than net migration from the rest of the UK, as shown in Table 4.

Projected natural change and assumed net migration are not independent of each other. The projected numbers of future births and deaths are themselves partly dependent on the assumed level of net migration.

Because migration is concentrated at young adult ages, the assumed level of future net migration has a much greater effect on the projected number of women of childbearing age, and hence the projected number of births, than on projected number of deaths over the 25 year period of the projection.

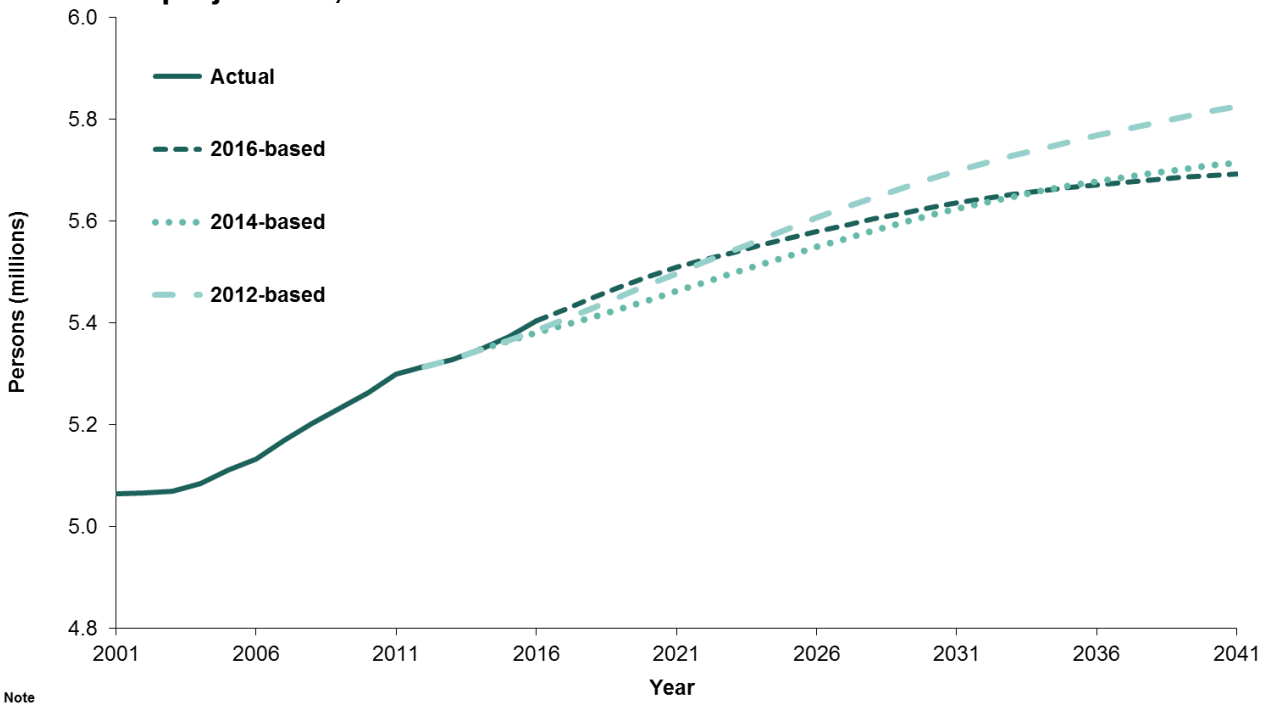
9. Comparison with previous projections

The last set of projections were based on the mid-year population estimates for 2014. Previous projections were based on the mid-2012 population estimates.

Figure 14 compares the 2016-based projection with previous projections. These latest projections, based on the population estimates for mid-2016, vary from the last projections (based on 2014 data). A higher population is projected by the 2016-based projections compared with the 2014-based projections up to 2034. Beyond this, however, the 2014-based projections projected a higher population.

There have been some underlying demographic changes to note in the intervening two years. The birth rate has fallen slightly and life expectancy has remained the same over the past 2 years, while there has been a recent increase in net migration. These changes resulted in the population in mid-2016 being estimated at 5.40 million, 24,400 (0.5%) higher than was projected for mid-2016 by the 2014-based projections.

Figure 14: Actual and projected total population compared with previous projections, 2001-2041



Note
The scale on the y axis does not start at zero.

10. Links to related statistics

- Results and corresponding data for the United Kingdom and its constituent countries, along with detailed information on the assumptions which are made, is available from the Office for National Statistics website:

- More detailed age and sex breakdowns of the Scottish results are available from: Population Projections section of the NRS website;

- NRS have also published additional variants for the 2016-based projections using alternative assumptions about future EU migration. These are available from the Population Projections page of the NRS website. It should be noted, however, that these variants have been produced for illustrative purposes only and are not classed as National Statistics.

- The next set of sub-national projections for council and NHS Board areas in Scotland are due to be released in March 2018. These will be consistent with the latest 2016-based projections for Scotland. The previous set of 2014-based sub-national population projections are available from the NRS website.

- These projections are based on the 2016 mid-year population estimates. More information on these estimates are available from the Mid-year Population Estimates section of the NRS website.

11. Notes on statistical publications

National Statistics

The United Kingdom Statistics Authority (UKSA) has designated these statistics as National Statistics, in line with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics (available on the UKSA website).

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is National Records of Scotland's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

Information on background and source data

Further details on data source(s), timeframe of data and timeliness, continuity of data, accuracy, etc can be found in the About this Publication document that is published alongside this publication on the NRS website.

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- Preserving the past – We look after Scotland's national archives so that they are available for current and future generations, and we make available important information for family history.
- Recording the present – At our network of local offices, we register births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland.
- Informing the future – We are responsible for the Census of Population in Scotland which we use, with other sources of information, to produce statistics on the population and households.

You can get other detailed statistics that we have produced from the Statistics section of our website. Scottish Census statistics are available on the Scotland's Census website.

We also provide information about future publications on our website. If you would like us to tell you about future statistical publications, you can register your interest on the Scottish Government ScotStat website.

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We, the National Records of Scotland, also label any revisions and corrections that we have applied to any of our statistics. These revisions and corrections are clearly marked on the webpage of the publication as well on our revisions and corrections page available on the NRS website.

Enquiries and suggestions

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