

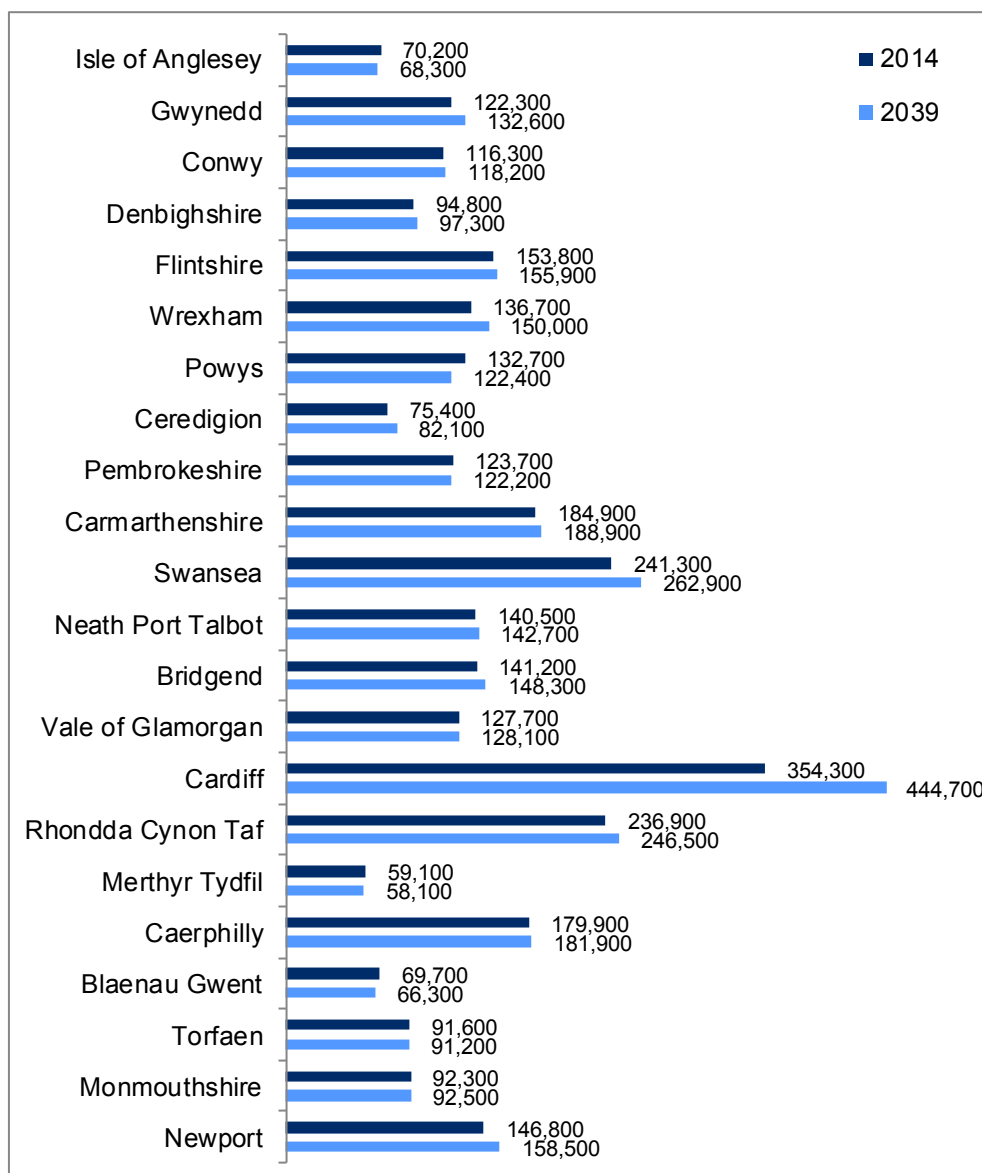


Local Authority Population Projections for Wales (2014-based): Principal projection

29 September 2016
SFR 129/2016

The population of most local authorities in Wales is projected to increase between 2014 and 2039. Cardiff is projected to increase the most, up 26 per cent with Wrexham the next largest (at 10 per cent). The population of Powys is projected to fall the most (down 8 per cent). The projections presented here are the principal projections. A range of other scenarios are also produced to show the possible variation in the projections.

Chart 1: Population by local authority in 2014 and projected population in 2039



About this release

This release presents the results of the principal (or main) 2014-based local authority population projections for Wales for the 25-year period from 2014 to 2039.

They are based on the mid-year population estimates for 2014 published by the Office for National Statistics (ONS). Population projections provide estimates of the size of the future population and are based on assumptions about births, deaths, and migration. The assumptions are generally based on trends in recent years.

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Introduction

Population projections provide estimates of the size of the future population and are based on assumptions about births, deaths, and migration. The assumptions are generally based on trends in recent years. Population projections are not forecasts and do not attempt to predict the impact that future government policies, changing economic circumstances or other factors (for example, government policies on immigration or the implications of the EU referendum result), might have on demographic behaviour.

These 2014-based projections are trend-based projections for the 25-year period from 2014 to 2039. They are based on mid-year population estimates¹ for 2014 published by the Office for National Statistics (ONS) in June 2015. As they are trend-based they become less certain the further they are carried forward. To give users an indication of this; a number of variant projections are produced which provide other future scenarios based on alternative assumptions of future fertility, mortality, and migration. These do not represent upper or lower bounds, but do illustrate what the population could look like if, for example, fertility were to become lower than assumed for the principal projection.

The main projection illustrates what will happen should recent trends continue.

These projections form part of the evidence base needed to produce a Local Development Plan for a Local Authority. They should form the starting point; however, because the projections are trend-based, local planning authorities may wish to produce their own policy-based projections, in which case they should justify the approach they have chosen to take. They should also use any other information available to inform the evidence base such as local housing market assessments.

These projections are for the local authorities in Wales and are not designed to give Wales level projections, which are produced by the Office for National Statistics. More information on this is given in the comparisons section of the release.

¹<http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/2015-06-25>

Outputs

This release covers the principal projections for each local authority in Wales. They are based on data on births, deaths, and migration for the 5-year period leading up to mid-2014. These principal projections are therefore considered to best reflect recent demographic patterns at the time they were produced. Variant projections are also available which illustrate the uncertainty associated with population projections. A statistical bulletin on the variant projections is being published on 5 October.

This First Release has been published on the Welsh Government website and a set of tables has been published on the StatsWales website. Guidance on the detailed methodology used to produce the 2011 population projections for Wales was published in the [technical report](#)

It describes how the local authority population projections were produced, and describes in detail the methodology used to derive assumptions on fertility, mortality, and migration. This report will be updated in the coming months to reflect the 2014 projections.

A set of Frequently Asked Questions is here:

<http://gov.wales/docs/statistics/2016/160126-population-projections-faqs-en.pdf>

A guidance leaflet on the local authority population projections for Wales can found here:

<http://gov.wales/docs/statistics/2016/160126-local-authority-population-projections-guidance-en.pdf>

It provides guidance on: population projections, the length of the projections, the use of local authority population projections, and when to use the national and local authority projections.

A tool for analysing the projections by Local Authority is available here: <http://gov.wales/statistics-and-research/local-authority-population-projections/>

A quality report for these statistics (and the other projections) is available here:

<http://gov.wales/docs/statistics/2016/160802-population-household-statistics-quality-report-en.pdf>

Key points:

Projected population change

- The populations of Gwynedd, Wrexham, Ceredigion, Swansea, Bridgend, Cardiff, Rhondda Cynon Taf, and Newport are projected to increase steadily between 2014 and 2039.
- The populations of the Isle of Anglesey, Blaenau Gwent, and Powys are projected to decrease steadily between 2014 and 2039.
- The populations of Conwy, Denbighshire, Flintshire, Carmarthenshire, Neath Port Talbot, the Vale of Glamorgan, Caerphilly and Monmouthshire are projected to increase then decrease, but to remain higher in 2039 than in 2014.
- The populations of Pembrokeshire, Torfaen and Merthyr Tydfil are projected to increase then decrease but to finish lower in 2039 than in 2014.
- For the eight local authorities showing a steady projected population increase between 2014 and 2039, the percentage increase varies from 4.0 percent for Rhondda Cynon Taf to 25.5 per cent for Cardiff (by far the largest), with around an 9 per cent increase for most. In most of the cases, this is due to migration (internal or international), with the increases in Cardiff and Rhondda Cynon Taf mostly due to natural change and in Newport the increases are only due to natural change.
- The three local authorities whose populations are projected to decrease steadily between 2014 and 2039 are the Isle of Anglesey (2.6 per cent down), Blaenau Gwent (4.9 per cent down), and Powys (7.7 per cent down). For Powys and the Isle of Anglesey, these reductions are due to natural change whilst for Blaenau Gwent it is mostly due to net outward migration.
- Half the local authorities do not show a steady increase or decrease of their projected population over the projection period: they all have a pattern of a projected increase followed by a decrease. In most cases this reflects an ageing population resulting in a decrease due to natural change (i.e an older population and a reduction in fertility rates due to an ageing population).

Assumed migration

Under the principal projections the migration assumptions are based on the 5-year period up to mid-2014.

- Assumed numbers of both internal in- and out-migrants are generally between two and six thousand for most local authorities: slightly lower for Merthyr Tydfil and Blaenau Gwent, slightly higher for Swansea, and much higher for Cardiff.
- Net international migration varies between 400 and -100 for most local authorities with the exception of Cardiff (900), Swansea (800), and Gwynedd (500).

Projected births and deaths

- For the year mid-2014 to mid -2015 there were more deaths than births for about one-third of local authorities.
- For two intermediate years, mid-2022 to mid 2023 and mid-2030 to mid 2031, there were projected to be more deaths than births for about a half of local authorities.
- By the end of the projection period the number of authorities for which there were more deaths than births is projected to around two-thirds.

Variant projections

- Differences between the 'high variant' and principal projection for local authorities are around 4,600 on average, and between the 'low variant' and the principal projection around 5,900 at mid-2039.

Changes to methodology

For the 2014 projections, the same methodology as previous projections was followed, however there have been two changes which were approved by the Wales Sub-national Projections working group (WASP, for more information on this group and the methodology used to produce these projections please see the technical report) : <http://gov.wales/docs/statistics/2016/160126-local-authority-population-projections-technical-en.pdf>

Prisoner population

Whilst producing these projections a step change was noted in the prisoner data supplied to us by the Office for National Statistics (ONS). Up to and including the mid-2011 population estimates the prison population was based on those who had served 6 months or more. Following the 2011 Census, the definition changed to those who had been sentenced to 6 months or more in prison; therefore accounting for the increase in numbers. Therefore, using a five year trend (2010 to 2014) would include 2010 and 2011 on the old basis and 2012 to 2014 on the new and give a lower average. Therefore a three year average was used.

National Population Projection differentials

The National Population Projections² (NPP) produced by the ONS is used in the Sub-National Population Projections (SNPP). They are used to determine the future trend of births and deaths (differentials) which are applied to the local authority areas. In the NPPs the ONS use projected fertility and mortality rates to calculate the projected number of births and deaths. The fertility and mortality rates in the first year of the projections are adjusted to ensure the resulting number of births and deaths are equal to the provisional estimates available. The rates for all subsequent years remain unchanged. In the past the NPPs have been used without any adjustment, however in the first quarter of 2015 there were more deaths in the UK than was the case in previous years³.

Having reviewed the ONS methodology for adjusting the first year of the projections to be an actual figure with WASP, it was decided to use the 2014-15 differentials without any adjustment to it (i.e. the projected number of deaths for 2014-15 rather than the adjusted number to match the actual figures). The impact on the projections is to increase the projected population for the total of the Local Authorities by 2,000 in 2015 (0.06%), which reduces to an increase of 400 in 2039 (0.01%).

Chart 2 shows the trends in birth and deaths from 2001-02 until 2013-14 for Wales then the projected number of births and deaths, including the projected number of deaths with the adjustment for 2014-15. Apart from the one adjusted year (2014-15) the projected numbers of deaths are almost identical between the adjusted and unadjusted series.

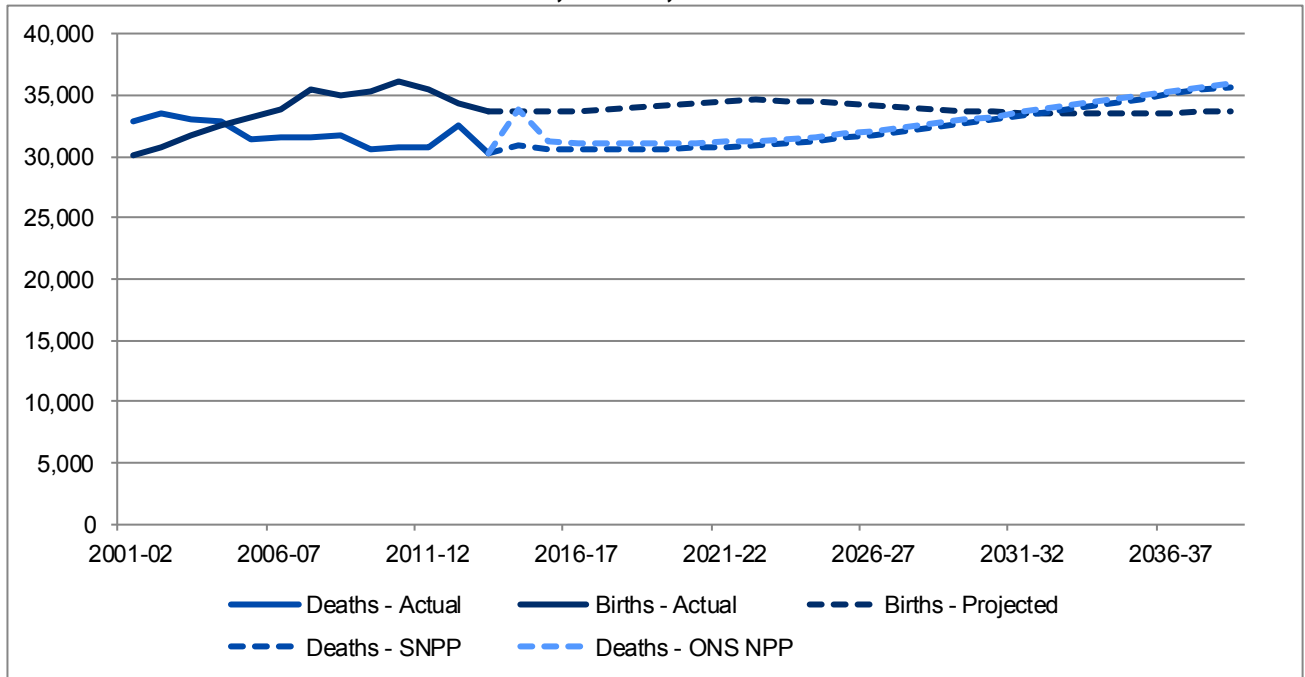
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<http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2015-10-29>

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<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/provisionalanalysisofdeathregistrations/2015>

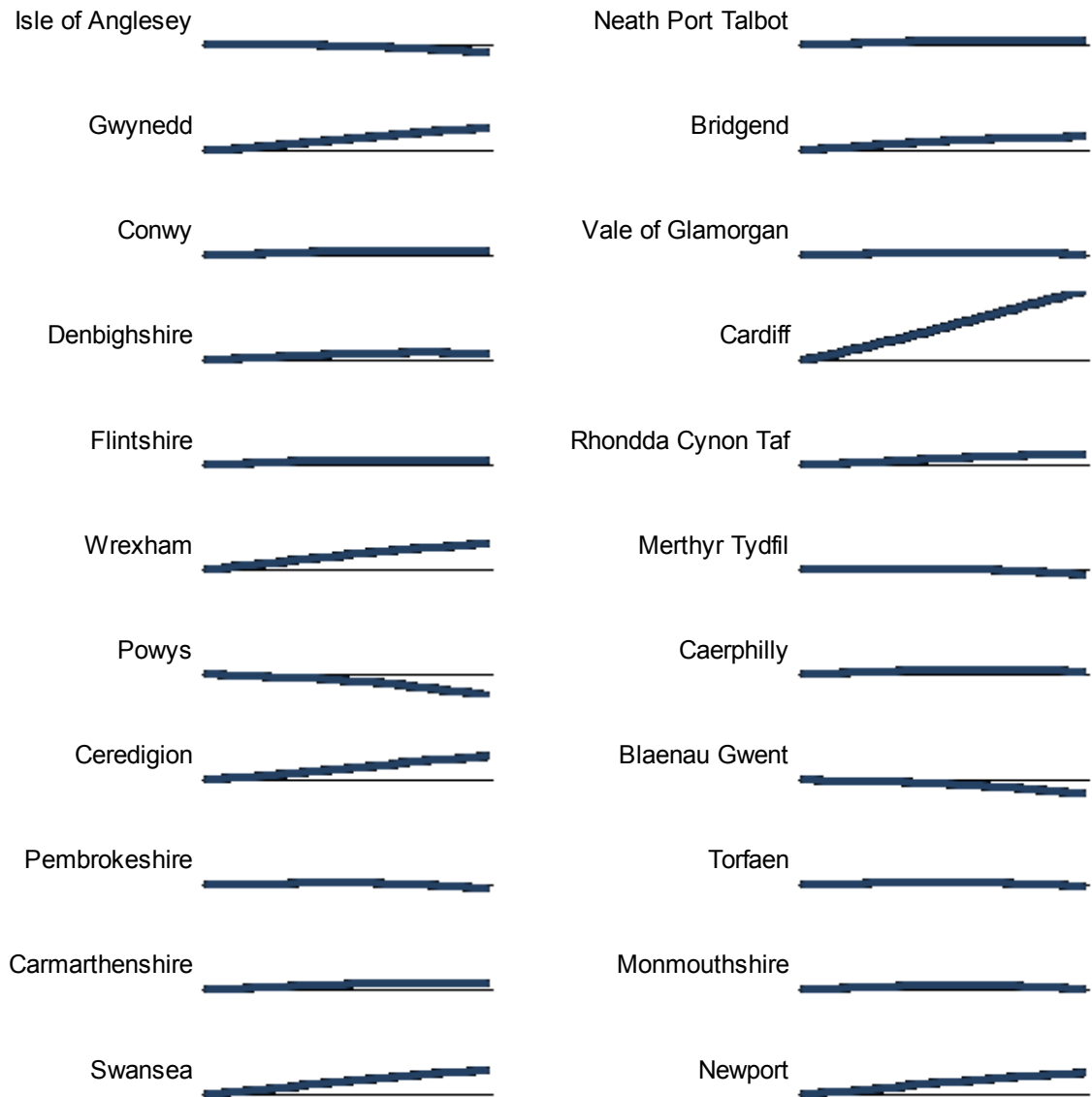
Chart 2: Trends in births and deaths, Wales, 2001-02 to 2038-39



Summary of trends by local authority

The charts below show the percentage change from 2014 over the projection period for each of the 22 local authorities. The scale is the same on each chart with the black line being no change. For example, whilst the Vale of Glamorgan will see little change in its projected population between 2014 and 2039, Cardiff is projected to have a steady increase whilst Merthyr Tydfil is projected to have a slight increase for the first 15 years or so then a decline in its population to 2039.

Chart 3: Percentage change in population from 2014 (to 2039)



Local Authority commentary

Isle of Anglesey

Between 2014 and 2039 the population of the Isle of Anglesey is projected to fall by almost 2,000 (or 2.6 per cent). Whilst the younger age groups are projected to fall, the number of people aged 75 or over is projected to increase by around 5,500. Natural change is the reason for the fall (down 2,700) with net migration offsetting this a little.

Gwynedd

Between 2014 and 2039 the population of Gwynedd is projected to grow by just over 10,000 (or 8.4 per cent). Nearly all of that increase is in the 75 or over population, with the population aged 85 or over projected to increase by 4,700 (122 per cent). About 75 per cent for the projected increase is due to net migration (7,800), with overseas migration up 11,600 but UK migration down 3,800 with natural change up 2,600. Gwynedd is also one of only two local authorities where the median age is projected to fall (the other being Ceredigion).

Conwy

Between 2014 and 2039 the population of Conwy is projected to increase by almost 2,000 (or 1.7 per cent). Whilst the younger age groups are projected to fall, the number of people aged 75 or over is projected to increase by around 10,000. Net migration will account for an increase of 12,600 in the population between 2014 and 2039 (driven by internal migration) with natural change down 10,600.

Denbighshire

Between 2014 and 2039 the population of Denbighshire is projected to increase by around 2,500 (or 2.7 per cent). The 11-17 age groups are projected to see a slight increase, with the 0-10 age group projected to have a similar sized decrease. The population aged 75 or over is projected to increase by 7,500 with a reduction in those aged 18-74 of 4,800. Net migration will account for an increase of 6,600 in the population between 2014 and 2039 (driven by internal migration) with natural change down 4,100.

Flintshire

Between 2014 and 2039 the population of Flintshire is projected to increase by around 2,100 (or 1.3 per cent). There are projected to be reductions in age groups under 59(female)/64(male). The population aged 75 or over is projected to increase by 13,300. Net migration will account for a decrease of 1,000 in the population between 2014 and 2039 (driven by internal migration) with natural change accounting for a further 3,000 increase.

Wrexham

Between 2014 and 2039 the population of Wrexham is projected to increase by around 13,300 (or 9.7 per cent). This is the second largest increase of the local authorities in Wales. Only the 0-4 and 5-10 age groups are projected to fall, with the largest increases in the older age groups. Net migration will account for an increase of 8,600 in the population between 2014 and 2039 (driven by international migration) with natural change accounting for a further 4,700 increase.

Powys

Between 2014 and 2039 the population of Powys is projected to fall by around 10,300 (or 7.7 per cent). This is the largest projected fall in Wales. There is projected to be reductions in all age groups apart from those aged 75 or over (which are projected to increase by 13,100). Net migration will account for an increase of 2,000 in the population between 2014 and 2039 (driven by internal migration), however this is more than offset by a reduction in population due to natural change of 12,500.

Ceredigion

Between 2014 and 2039 the population of Ceredigion is projected to increase by around 6,600 (or 8.8 per cent). This is the fourth largest projected increase in Wales. There is projected to be increases in most age groups apart from those aged 16-17 and 60(f)/65(m)-74. Net migration will account for an increase of 7,300 in the population between 2014 and 2039 (with international migration accounting for two thirds); this is slightly offset by a reduction in population due to natural change of 600. Ceredigion is also one of only two local authorities where the median age is projected to fall (the other being Gwynedd).

Pembrokeshire

Between 2014 and 2039 the population of Pembrokeshire is projected to fall by around 1,400 (or 1.2 per cent). This is the fifth largest projected fall in Wales. There is projected to be reductions in all age groups apart from those aged 75 or over (which are projected to increase by 24,200). Net migration will account for an increase of 6,300 in the population between 2014 and 2039 (driven by internal migration); however this is more than offset by a reduction in population due to natural change of 7,700.

Carmarthenshire

Between 2014 and 2039 the population of Carmarthenshire is projected to increase by around 4,004 (or 2.2 per cent). There is projected to be reductions in all age groups apart from those aged 60(f)/65(m) or over (which are projected to increase by 16,800). Net migration will account for an increase of 13,700 in the population between 2014 and 2039 (with around three quarters of that increase from internal migration), this is partly offset by a reduction in population due to natural change of 9,600.

Swansea

Between 2014 and 2039 the population of Swansea is projected to increase by around 22,000 (or 9.0 per cent). This is the third largest projected increase in Wales. There are projected to be reductions in all most age groups, in particular the older age groups with those aged 75 or over increasing by 15,000. Net migration will account for an increase of 18,000 in the population between 2014 and 2039 (driven by international migration), with an increase in population due to natural change of 3,600.

Neath Port Talbot

Between 2014 and 2039 the population of Neath Port Talbot is projected to increase by around 2,200 (or 1.6 per cent). There is projected to be increases in all older age groups, in particular those aged 75 or over (increasing by 10,300). Net migration will account for an increase of 4,800 in the population between 2014 and 2039 (most of that increase will be from internal migration); this is offset by a reduction in population due to natural change of 2,600.

Bridgend

Between 2014 and 2039 the population of Bridgend is projected to increase by around 7,000 (or 5.0 per cent). There is projected to be increases in most age groups apart from those aged 16-17 and 18-59(f)/60(m). Net migration will account for an increase of 9,100 in the population between 2014 and 2039 (with internal migration accounting for nearly all of the change), this is offset by a reduction in population due to natural change of 2,000.

The Vale of Glamorgan

Between 2014 and 2039 the population of the Vale of Glamorgan is projected to increase very slightly by 500 (or 0.4 per cent). There is projected to be increases in the older age groups (60(f)/65(m) and over) which is offset by the other age groups. Net migration will account for an increase of 1,600 in the population between 2014 and 2039 (with internal migration accounting for this change), this is offset by a reduction in population due to natural change of 1,100.

Cardiff

Between 2014 and 2039 the population of Cardiff is projected to increase the most in Wales. It is projected to increase by 90,400 (or 25.5 per cent). There is projected to be increases in all age groups. Net migration will account for an increase of 28,200 in the population between 2014 and 2039 (with international migration accounting for four fifths of this change), whilst natural change will account for a further increase of 62,100.

Rhondda Cynon Taf

Between 2014 and 2039 the population of Rhondda Cynon Taf is projected to increase by 9,600 (or 4.0 per cent). There is projected to be increases in the 5-15 and 60(f)/65(m) and over age groups. Net migration will account for an increase of 1,800 in the population between 2014 and 2039 (with international migration accounting for this) and natural change accounting for a further 7,800 increase.

Merthyr Tydfil

Between 2014 and 2039 the population of Merthyr Tydfil is projected to fall very slightly by 1,000 (or 1.7 per cent). This is the fourth largest percentage decrease. There is projected to be increases in the older age groups (60(f)/65(m) and over) which is offset by the other age groups. Net migration will account for a decrease of 1,300 in the population between 2014 and 2039 (with internal migration accounting for this change), this is offset slightly by an increase in population due to natural change of 300.

Caerphilly

Between 2014 and 2039 the population of Caerphilly is projected to increase slightly by 2,000 (or 1.1 per cent). There is projected to be increases in the older age groups (60(f)/65(m) and over) which is offset by the other age groups. The population aged 75 or over is projected to increase by 12,400. Net migration will account for a decrease of 2,800 in the population between 2014 and 2039 (with internal migration accounting for two thirds of this change), this is offset by an increase in population due to natural change of 4,700.

Blaenau Gwent

Between 2014 and 2039 the population of Blaenau Gwent is projected to decrease by 3,400 (or 4.9 per cent). There is projected to be increases in the older age groups (60(f)/65(m) and over) which is more than offset by the other age groups (in particular those aged 18-59(f)/64(m)). The population aged 75 or over is projected to increase by 4,300. Net migration will account for a decrease of 2,800 in the population between 2014 and 2039 (with internal migration accounting for this change), whilst natural change will reduce the population by a further 600.

Torfaen

Between 2014 and 2039 the population of Torfaen is projected to decrease slightly by 400 (or 0.4 per cent). There is projected to be increases in the older age groups (60(f)/65(m) and over) which is offset by the other age groups. The population aged 75 or over is projected to increase by 6,700. Net migration will account for a decrease of 1,200 in the population between 2014 and 2039 (with internal migration accounting for this change), this is offset slightly by an increase in population due to natural change of 800.

Monmouthshire

The population of Monmouthshire is projected to be broadly the same in 2039 as it is in 2014 (up by 100 or 0.1 per cent). There is projected to be increases in the older age groups 60(f)/65(m) and over) which is offset by the other age groups. The population aged 75 or over is projected to increase by 10,300. Net migration will account for an increase of 8,000 in the population between 2014 and 2039 (with internal migration accounting for this change), this is offset by a decrease in population due to natural change of 7,900.

Newport

Between 2014 and 2039 the population of Newport is projected to increase by 11,700 (or 7.9 per cent). There is projected to be increases in most age groups (apart from 0-4 and 16-59(f)/64(m)). The population aged 75 or over is projected to increase by 8,600. Natural change will account for an increase of 12,000 in the population between 2014 and 2039: this is offset slightly by a decrease in population due to migration of 300 (an increase in international migration is partly offset by internal migration).

Projected total population

Table 1 shows that using the principal projections total population is projected to increase for most authorities in Wales between 2014 and 2039.

The populations of Gwynedd, Wrexham, Ceredigion, Swansea, Bridgend, Cardiff, Rhondda Cynon Taf, and Newport are projected to increase steadily between 2014 and 2039. The population of Cardiff is projected to pass 400,000 by 2028. In 2014 the population of Cardiff (the largest local authority in Wales) was 6 times higher than the population of the smallest (Merthyr Tydfil). By 2039 it is projected to be 7.7 times higher.

For Conwy, Denbighshire, Flintshire, Carmarthenshire, Neath Port Talbot, the Vale of Glamorgan, Caerphilly and Monmouthshire the total population is projected to increase by around 2029 then decrease, but to remain higher than in 2014. For Pembrokeshire and Torfaen the pattern is similar but with the 2039 population projected to be lower than in 2014. For Merthyr Tydfil the decrease is projected to start in 2025.

The local authorities whose populations are projected to decrease steadily between 2014 and 2039 are the Isle of Anglesey, Blaenau Gwent, and Powys. The 2011-based projections showed this decrease for the Isle of Anglesey, Blaenau Gwent, and Monmouthshire.

Table 1: Projected total population by local authority (Wales), 2014-2039

	2014	2019	2024	2029	2034	2039
Isle of Anglesey	70,200	70,200	70,100	69,700	69,100	68,300
Gwynedd	122,300	124,000	126,200	128,500	130,600	132,600
Conwy	116,300	117,000	117,900	118,500	118,600	118,200
Denbighshire	94,800	95,700	96,700	97,300	97,400	97,300
Flintshire	153,800	155,200	156,300	156,900	156,700	155,900
Wrexham	136,700	139,800	142,800	145,500	147,900	150,000
Powys	132,700	131,700	130,600	128,800	126,000	122,400
Ceredigion	75,400	76,600	77,900	79,400	80,800	82,100
Pembrokeshire	123,700	124,100	124,500	124,400	123,600	122,200
Carmarthenshire	184,900	186,400	188,000	189,000	189,300	188,900
Swansea	241,300	245,800	250,700	255,400	259,500	262,900
Neath Port Talbot	140,500	141,500	142,500	143,100	143,100	142,700
Bridgend	141,200	143,300	145,300	146,800	147,800	148,300
Vale of Glamorgan	127,700	128,400	129,100	129,300	129,000	128,100
Cardiff	354,300	370,300	388,200	407,000	425,900	444,700
Rhondda Cynon Taf	236,900	238,900	241,500	243,700	245,300	246,500
Merthyr Tydfil	59,100	59,300	59,300	59,200	58,700	58,100
Caerphilly	179,900	181,300	182,500	183,000	182,800	181,900
Blaenau Gwent	69,700	69,400	69,000	68,400	67,400	66,300
Torfaen	91,600	92,100	92,500	92,500	92,000	91,200
Monmouthshire	92,300	93,100	93,700	93,900	93,500	92,500
Newport	146,800	149,200	152,000	154,500	156,600	158,500

Table 2 shows that for the eight local authorities showing a steady projected population increase between 2014 and 2039 (Gwynedd, Wrexham, Ceredigion, Swansea, Bridgend, Cardiff, Rhondda Cynon Taf, and Newport), the percentage increase varies from 4.0 percent for Rhondda Cynon Taf to 25.5 per cent for Cardiff (by far the largest), with around a 9 per cent increase for most.

The 2011-based projections showed the same pattern with the projected percentage increase in population being highest for Cardiff, Wrexham, Newport, and Swansea.

The 5-year projected percentage increase for Cardiff is larger than the 25-year projected percentage changes for over half the other local authorities. The 10-year projected percentage increase for Cardiff is larger than the 25-year projected percentage changes for all the other local authorities.

The three local authorities whose populations are projected to decrease steadily between 2014 and 2039 are the Isle of Anglesey (2.6 per cent down), Blaenau Gwent (4.9 per cent down), and Powys (7.7 per cent down).

The other half of the local authorities have a pattern of projected population increase followed by a decrease. The year of the reversal of the trend varies: 2025 for Merthyr Tydfil, 2027 for Torfaen and Pembrokeshire; 2029 for Monmouthshire; 2030 for the Vale of Glamorgan; 2031 for Flintshire and Caerphilly; 2033 for Neath Port Talbot; 2034 for Carmarthenshire and Conwy; and 2035 for Denbighshire.

Compared with percentage changes for the 2011-based projections, the 2014-based projections are quite different. The projected percentage change is higher for the 2014-based projections for Gwynedd, Conwy, Ceredigion, Rhondda Cynon Taf and Monmouthshire. The projected percentage change is lower for the 2014-based projections for Denbighshire, Swansea, Bridgend, Cardiff, Blaenau Gwent, Torfaen, and Monmouthshire; and much lower for Wrexham, Powys, Carmarthenshire, the Vale of Glamorgan, Merthyr Tydfil, and Newport. The projections were similar for the Isle of Anglesey, Flintshire, Neath Port Talbot and Caerphilly.

Table 2: projected percentage change in total population by local authority compared with 2014 (percentages)

	2019	2024	2029	2034	2039
Isle of Anglesey	0.01	-0.11	-0.64	-1.53	-2.59
Gwynedd	1.44	3.18	5.06	6.82	8.43
Conwy	0.65	1.41	1.90	1.98	1.66
Denbighshire	0.99	2.00	2.62	2.77	2.67
Flintshire	0.90	1.65	2.00	1.86	1.34
Wrexham	2.22	4.42	6.40	8.15	9.70
Powys	-0.72	-1.58	-2.95	-5.02	-7.73
Ceredigion	1.51	3.30	5.24	7.08	8.79
Pembrokeshire	0.39	0.70	0.60	-0.04	-1.17
Carmarthenshire	0.83	1.69	2.25	2.39	2.17
Swansea	1.87	3.90	5.83	7.52	8.97
Neath Port Talbot	0.71	1.41	1.84	1.87	1.58
Bridgend	1.46	2.87	3.95	4.63	4.99
Vale of Glamorgan	0.58	1.08	1.29	1.03	0.35
Cardiff	4.52	9.56	14.88	20.20	25.51
Rhondda Cynon Taf	0.87	1.94	2.86	3.55	4.05
Merthyr Tydfil	0.32	0.47	0.16	-0.59	-1.70
Caerphilly	0.75	1.42	1.71	1.57	1.10
Blaenau Gwent	-0.43	-0.94	-1.87	-3.26	-4.90
Torfaen	0.52	0.96	0.93	0.41	-0.41
Monmouthshire	0.80	1.47	1.72	1.28	0.13
Newport	1.64	3.48	5.18	6.65	7.93

Projected total population – changes by age

Chart 4 shows that between 2014 and 2039 the 0-17 age group is projected to fall in fourteen local authorities in Wales. The largest fall is in Powys (down 17.1 per cent). Of the eight local authorities with increases, Cardiff is projected to have the largest increase by far (up 30.2 per cent), followed by Ceredigion (up 8.9 per cent).

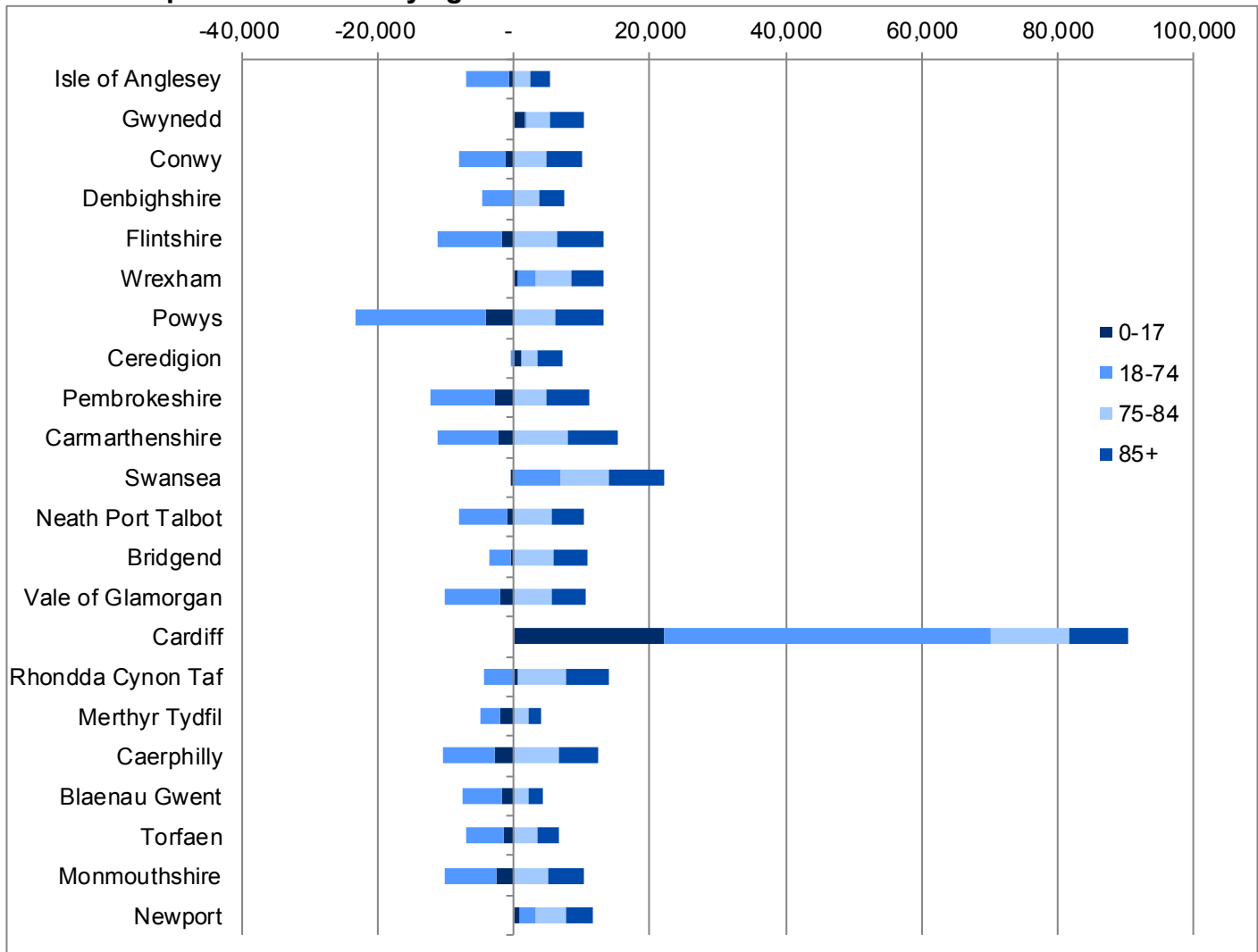
Between 2014 and 2039 the 18-74 age group is projected to decrease for nearly all local authorities (17 of the 22) with the largest decreases being for Powys (20.6 per cent) and Monmouthshire (11.8 per cent) with most in the 6 to 10 per cent range. There is projected to be little change in Gwynedd. The only projected increases were in Newport, Wrexham, Swansea with increases of two to four per cent, and (by far the largest increase) in Cardiff (18.7 per cent).

In all local authorities between 2014 and 2039 the populations of people aged 75 and over are projected to increase significantly and account for most of the projected population growth. The increase for the 75 to 84 age group varies from 37.8 per cent in Gwynedd to 75.5 per cent in Monmouthshire; and for the 85 and over group from 111.8 per cent in Conwy to 206.7 per cent in Flintshire.

Powys is projected to have the greatest increase in the proportion of its population aged 85 or over, from 3.4 per cent in 2014 to 9.5 per cent in 2039, whilst Cardiff is projected to have the smallest increase (from 2.0 per cent to 3.5 per cent).

Median age is projected to increase for both males and females for all local authorities apart from Gwynedd (males down from 42 to 40 and females down from 45 to 43) and Ceredigion (males down from 41 to 37 and females down from 45 to 42), with most increases around two to five years. The largest increases were in Powys (47 to 54 for males and 49 to 57 for females) and Monmouthshire (46 to 52 for males and 48 to 56 for females).

Chart 4: Projected change in total population by local authority compared with 2014 by age



Assumed migration

Migration refers to people moving from and into a local authority whether internationally, from a different part of the UK, or from a different local authority in Wales. The assumed levels of internal and international migration are based on average migration numbers for the five years leading up to mid-2014, and these are held constant for the projection period.

Since migration levels can fluctuate from year to year, the projected levels of migration are also uncertain and are dependant on a range of other factors. As with births and deaths, the variant projections can be used to consider the impact of different migration levels including natural change only and using a ten year average.

Table 3 shows that under the principal projections assumed numbers of both internal in- and out-migrants are generally between two and six thousand for most local authorities: slightly lower for Merthyr Tydfil and Blaenau Gwent, slightly higher for Swansea, and much higher for Cardiff. For the 2011-based projections assumed numbers of internal in- and out-migrants were similar for all local authorities and followed the same pattern.

Net internal migration is relatively small (compared with the numbers moving in and out) varying between 600 and -300. It tends to be slightly positive (more people moving in than out) for rural areas and slightly negative for urban areas. For the 2011-based projections net internal migration was within the same range for all local authorities with the exception of Carmarthenshire (800) and Rhondda Cynon Taf (-500).

Net international migration varies between 400 and -100 for most local authorities with the exception of Cardiff (900), Swansea (800), and Gwynedd (500). For the 2011-based projections net international migration followed a similar pattern although it was a shade lower for Gwynedd and higher for Wrexham.

The combined effect of the assumptions for internal and international migration is that assumed total annual net migration varies between 400 and -100 for most local authorities with the exception of Cardiff (1,100), Swansea (700), Carmarthenshire (500), and Conwy (500). For the 2011-based projections overall net migration followed a similar pattern although was double for Cardiff and Carmarthenshire and was negative for fewer local authorities.

Table 3: assumed annual migration by local authority in Wales, principal projections, 2014-2039

	Internal			International			Total		
	In	Out	Net	In	Out	Net	In	Out	Net
Isle of Anglesey	2,300	2,300	0	100	100	0	2,400	2,400	0
Gwynedd	5,600	5,700	-200	1,000	600	500	6,600	6,300	300
Conwy	4,800	4,200	600	300	400	-100	5,000	4,500	500
Denbighshire	4,500	4,200	300	200	200	0	4,700	4,400	300
Flintshire	4,600	4,700	-100	400	300	100	5,000	5,000	0
Wrexham	3,900	4,000	-100	800	400	400	4,700	4,400	300
Powys	5,200	5,000	100	300	300	-100	5,500	5,400	100
Ceredigion	5,800	5,800	100	600	400	200	6,500	6,200	300
Pembrokeshire	3,900	3,600	300	300	300	0	4,200	4,000	300
Carmarthenshire	6,100	5,700	400	500	300	100	6,600	6,100	500
Swansea	9,300	9,400	-100	1,900	1,100	800	11,200	10,500	700
Neath Port Talbot	4,000	3,900	200	200	100	0	4,200	4,000	200
Bridgend	4,000	3,600	400	200	200	0	4,200	3,800	400
Vale of Glamorgan	4,700	4,600	100	200	300	-100	5,000	4,900	100
Cardiff	19,800	19,600	200	4,700	3,800	900	24,500	23,400	1,100
Rhondda Cynon Taf	6,300	6,600	-300	800	500	400	7,100	7,000	100
Merthyr Tydfil	1,400	1,600	-100	200	100	100	1,600	1,600	-100
Caerphilly	4,400	4,500	-100	100	200	0	4,500	4,600	-100
Blaenau Gwent	1,700	1,800	-100	100	100	0	1,700	1,800	-100
Torfaen	2,300	2,400	-100	100	100	0	2,400	2,500	0
Monmouthshire	4,200	3,800	400	200	300	-100	4,400	4,100	300
Newport	5,300	5,400	-200	900	700	100	6,100	6,200	0

Note: Numbers may not sum exactly due to rounding.

Projected births and deaths

The methodology for the Local Authority Population Projections produces projected numbers of births and deaths by local authority for Wales. The projected numbers of births and deaths are based on average fertility and mortality rates for the five years leading up to mid-2014 and assumed trends from the National Population Projection (NPP) for Wales. As noted earlier in this release, the NPPs were adjusted for 2014-15 to projected figures rather than actual. Projected natural change is the difference between the two; that is, natural change is the number of births minus the number of deaths.

Tables 4a and 4b show that based on the fertility and mortality assumptions in the principal projections, for the year mid-2014 to mid -2015 there were more deaths than births for about a third of local authorities. For two intermediate years, mid-2022 to mid 2023 and mid-2030 to mid 2031, there were projected to be more deaths than births for about a half of local authorities. By the end of the projection period the number of authorities is projected to be around to two-thirds.

Comparing the two periods shows a general tendency (with a few exceptions) for the local authorities to have reductions in natural change. The notable exception being Cardiff (+1,900 to +2,600). The largest reductions were Powys (-300 to -900) and Flintshire (+300 to -200)

For the year mid-2014 to mid-2015 the 2014-based projections had a similar number of local authorities for which there are more deaths than births than initial year of the 2011-based

projections (mid-2011 to mid -2012). By the end of both projection periods (2011-based and 2014-based) the patterns were still almost identical.

Due to the use of trends from the NPP in the mortality assumption there is an assumed improvement in age-specific mortality rates throughout the projection period. Nevertheless the increase in deaths shown in Tables 4a and 4b for many local authorities is projected to occur due to increases in local authority populations at older ages over the projection period. The combined effect of this with the migration and fertility assumptions used in the principal projections is that for an increasing number of authorities any growth in population is likely to be due to net migration by the end of the projection period.

Eleven local authorities are projected to have positive migration and negative natural change, and five are projected to have negative migration and positive natural change. Of the others Blaenau Gwent is the only local authority to have negative migration and negative natural change. Gwynedd, Wrexham, Swansea, Rhondda Cynon Taf and Cardiff are all projected to have both positive migration and positive natural change.

Table 4a: Projected births, deaths and natural change by local authority in Wales, principal projections, 2014-2023

	Mid 2014-15			Mid 2022-23		
	Births	Deaths	Natural change	Births	Deaths	Natural change
Isle of Anglesey	800	800	0	700	800	-100
Gwynedd	1,200	1,200	0	1,300	1,200	100
Conwy	1,100	1,500	-400	1,100	1,400	-300
Denbighshire	1,100	1,200	-100	1,100	1,100	-100
Flintshire	1,700	1,300	300	1,700	1,400	300
Wrexham	1,600	1,300	300	1,600	1,400	300
Powys	1,200	1,500	-300	1,200	1,500	-300
Ceredigion	600	700	-100	700	700	0
Pembrokeshire	1,200	1,400	-200	1,200	1,400	-200
Carmarthenshire	1,800	2,100	-300	1,800	2,100	-200
Swansea	2,500	2,300	100	2,600	2,300	300
Neath Port Talbot	1,500	1,500	0	1,500	1,500	0
Bridgend	1,500	1,500	0	1,500	1,500	0
Vale of Glamorgan	1,300	1,200	100	1,300	1,200	100
Cardiff	4,600	2,700	1,900	5,100	2,600	2,500
Rhondda Cynon Taf	2,800	2,500	300	2,900	2,400	500
Merthyr Tydfil	700	600	100	600	600	100
Caerphilly	2,100	1,700	400	2,100	1,800	300
Blaenau Gwent	800	800	0	800	700	0
Torfaen	1,100	900	100	1,000	900	100
Monmouthshire	700	900	-200	800	1,000	-200
Newport	1,800	1,400	500	1,900	1,300	600

Note: Numbers may not sum exactly due to rounding.

Table 4b: Projected births, deaths and natural change by local authority in Wales, principal projections, 2030-2039

	Mid 2030-31			Mid 2038-39		
	Births	Deaths	Natural change	Births	Deaths	Natural change
Isle of Anglesey	700	800	-200	700	900	-200
Gwynedd	1,400	1,300	100	1,400	1,300	100
Conwy	1,000	1,500	-500	1,000	1,600	-600
Denbighshire	1,000	1,200	-200	1,000	1,300	-300
Flintshire	1,600	1,600	0	1,600	1,700	-200
Wrexham	1,600	1,500	100	1,700	1,600	100
Powys	1,100	1,700	-600	900	1,800	-900
Ceredigion	800	800	0	800	800	0
Pembrokeshire	1,100	1,500	-400	1,100	1,600	-600
Carmarthenshire	1,800	2,200	-500	1,800	2,400	-700
Swansea	2,500	2,400	100	2,500	2,600	-100
Neath Port Talbot	1,400	1,600	-200	1,400	1,700	-300
Bridgend	1,500	1,600	-200	1,500	1,800	-300
Vale of Glamorgan	1,200	1,300	-100	1,200	1,500	-300
Cardiff	5,400	2,800	2,600	5,700	3,100	2,600
Rhondda Cynon Taf	2,800	2,500	300	2,800	2,700	100
Merthyr Tydfil	600	600	0	600	700	-100
Caerphilly	2,000	1,900	100	1,900	2,000	-100
Blaenau Gwent	700	800	-100	700	800	-100
Torfaen	900	1,000	0	900	1,000	-100
Monmouthshire	700	1,100	-400	600	1,200	-600
Newport	1,900	1,400	500	1,900	1,500	400

Note:

Numbers may not sum exactly due to rounding.

Comparison with the 2011-based local authority population projections

The 2014-based local authority population projections replace the previous set of local authority projections for Wales which were 2011-based (they are based on more recent data).

Table 5 shows the differences in total population at 2014 and 2036 under the 2011-based and 2014-based sets of projections.

Table 5: Projected total populations for 2014 and 2036, using 2011-based and 2014-based local authority population projections for Wales

	Projected total population				Percentage change in total population 2014-2036	
	2014		2036		2011-based	2014-based
	2011-based	2014-based	2011-based	2014-based		
Isle of Anglesey	70,100	70,200	68,200	68,800	-2.6	-1.9
Gwynedd	122,400	122,300	130,900	131,400	6.9	7.5
Conwy	115,800	116,300	115,700	118,500	-0.1	1.9
Denbighshire	95,100	94,800	101,800	97,400	7.1	2.7
Flintshire	153,800	153,800	154,900	156,400	0.7	1.7
Wrexham	138,900	136,700	164,100	148,700	18.1	8.8
Powys	134,000	132,700	135,100	124,700	0.8	-6.0
Ceredigion	75,800	75,400	77,800	81,300	2.6	7.8
Pembrokeshire	123,600	123,700	126,800	123,100	2.5	-0.4
Carmarthenshire	186,900	184,900	204,900	189,200	9.7	2.3
Swansea	242,500	241,300	268,700	260,900	10.8	8.1
Neath Port Talbot	140,600	140,500	142,500	143,000	1.4	1.8
Bridgend	141,600	141,200	151,500	148,000	7.0	4.8
Vale of Glamorgan	128,100	127,700	134,100	128,700	4.7	0.8
Cardiff	358,000	354,300	455,300	433,400	27.2	22.3
Rhondda Cynon Taf	235,200	236,900	235,400	245,800	0.1	3.8
Merthyr Tydfil	59,600	59,100	62,700	58,500	5.2	-1.0
Caerphilly	180,100	179,900	182,800	182,500	1.5	1.4
Blaenau Gwent	69,500	69,700	65,300	67,000	-6.0	-3.9
Torfaen	91,600	91,600	92,400	91,700	0.8	0.1
Monmouthshire	91,900	92,300	90,700	93,200	-1.2	0.9
Newport	148,600	146,800	171,200	157,400	15.2	7.2

Differences between the two sets of projections are likely to be due to:

- changes in historical fertility, mortality and migration trends
- differences in the underlying population estimates methodology
- the different base years used

Table 5 shows though that for just over half the local authorities projected growth in total population between 2014 and 2036 is lower under the 2014-based projections than the 2011-based projections. The biggest decreases were for Wrexham (an 18.1 per cent increase to an 8.8 per cent increase), Newport (15.2 per cent to 7.2 per cent), Carmarthenshire (9.7 per cent to 2.3 per cent), Powys (a 0.8 per cent increase to a 6.0 per cent fall), and Merthyr Tydfil (a 5.2 per cent increase to a 1.0 per cent decrease). The two biggest increases were for Ceredigion (a 2.6 per cent increase to a 7.8 per cent increase) and Rhondda Cynon Taf (a 0.1 per cent increase to a 3.8 per cent increase). For three local authorities (Neath Port Talbot, Caerphilly and Torfaen), the projections were similar.

Comparisons with the mid year estimates

The 2014-based local authority population projections can be compared to the mid year estimates produced by the Office for National Statistics. Both are estimates and by comparing the two it is possible to assess the differences between the two. Table 6 shows the differences in total population at 2015 for the 2014 based sub-national projections and the mid year estimates and also for 2012 for the 2011 based sub-national population projections.

Overall most local authorities were similar in both; however for some the differences were larger. For both the 2012 and 2015 SNPPs, the differences were the same overall (0.2 per cent).

The local authorities with the largest difference in 2015 were Ceredigion, Wrexham, Bridgend and Newport. For those areas most of that difference is due to either internal or international migration.

Table 6: Comparison of the mid year estimates (MYE) for 2012 and 2015 with the 2011 and 2014 sub-national population projections (SNPP)

	2015			2012		
	2014 based SNPP	MYE		2011 based SNPP	MYE	
Isle of Anglesey	70,200	70,000	0.3%	70,000	70,000	-0.1%
Gwynedd	122,600	122,900	-0.2%	121,800	122,100	-0.3%
Conwy	116,400	116,200	0.2%	115,500	115,500	0.0%
Denbighshire	95,000	94,700	0.3%	94,300	94,100	0.3%
Flintshire	154,100	154,100	0.0%	153,000	152,700	0.2%
Wrexham	137,300	136,600	0.5%	136,300	135,900	0.3%
Powys	132,500	132,600	-0.1%	133,400	133,000	0.3%
Ceredigion	75,600	74,600	1.3%	75,400	76,000	-0.8%
Pembrokeshire	123,800	123,500	0.2%	122,900	123,000	-0.1%
Carmarthenshire	185,200	185,100	0.0%	184,900	184,300	0.3%
Swansea	242,200	242,400	-0.1%	239,900	239,600	0.1%
Neath Port Talbot	140,700	141,000	-0.2%	140,100	140,100	0.0%
Bridgend	141,600	142,100	-0.3%	140,100	139,700	0.3%
The Vale of Glamorgan	127,800	127,600	0.2%	127,100	126,800	0.2%
Cardiff	357,400	357,200	0.1%	349,500	348,500	0.3%
Rhondda Cynon Taf	237,200	237,400	-0.1%	234,600	235,600	-0.4%
Merthyr Tydfil	59,100	59,300	-0.4%	59,100	58,900	0.3%
Caerphilly	180,200	180,200	0.0%	179,200	179,000	0.1%
Blaenau Gwent	69,600	69,500	0.1%	69,700	69,800	-0.2%
Torfaen	91,700	91,800	-0.1%	91,300	91,400	-0.1%
Monmouthshire	92,500	92,500	0.0%	91,600	91,700	0.0%
Newport	147,300	147,800	-0.3%	146,700	146,100	0.4%
Mean absolute percentage difference			0.23%			0.24%

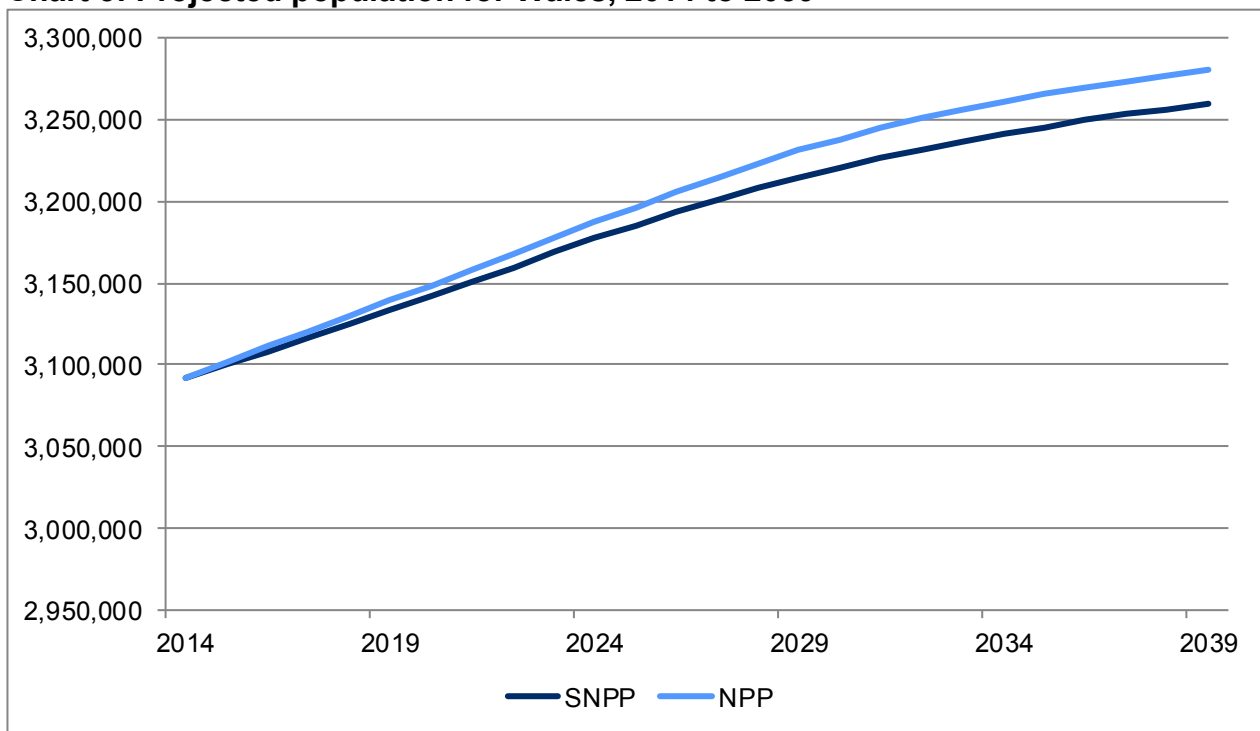
Source: Sub-national population projections, Welsh Government and Mid year estimates, Office for National Statistics

Comparisons with the 2014 National Population Projections

The sum of 2014-based local authority population projections can be compared to the 2014 National Population Projections (NPPs) produced by the ONS.

Chart 5 shows the sum of the local authorities from the Sub-National Population Projections (SNPPs) with the ONS NPPs. The NPPs produced by the ONS are slightly higher than the sum of the Local Authority projections by 20,600 in 2039, which is 0.6 per cent. There are a number of reasons as to why there will be differences between the two projections; these are described in more detail in the technical report.

Chart 5: Projected population for Wales, 2014 to 2039



Variant projections

Population projections provide estimates of the size of the future population, and are based on assumptions about births, deaths and migration. The assumptions are based on past trends. Projections done in this way do not make allowances for the effects of local or central government policies on future population levels or distribution; they indicate what is expected to happen if these trends continue.

These 2014-based projections are trend-based projections for the 25-year period from 2014 to 2039. As they are trend-based they become less certain the further they are carried forward. They are based on mid-year population estimates for 2014.

In order to illustrate the inherent uncertainty around future demographic change when producing a set of projections it is possible to produce a principal projection based on an agreed set of assumptions, together with a number of variants based on alternative assumptions. For the 2014-based set of Local Authority Population Projections four variants have been produced along with the principal projection for each authority. They show how possible variations in the fertility, mortality, and migration assumptions affect the projections.

The four variant projections published are:

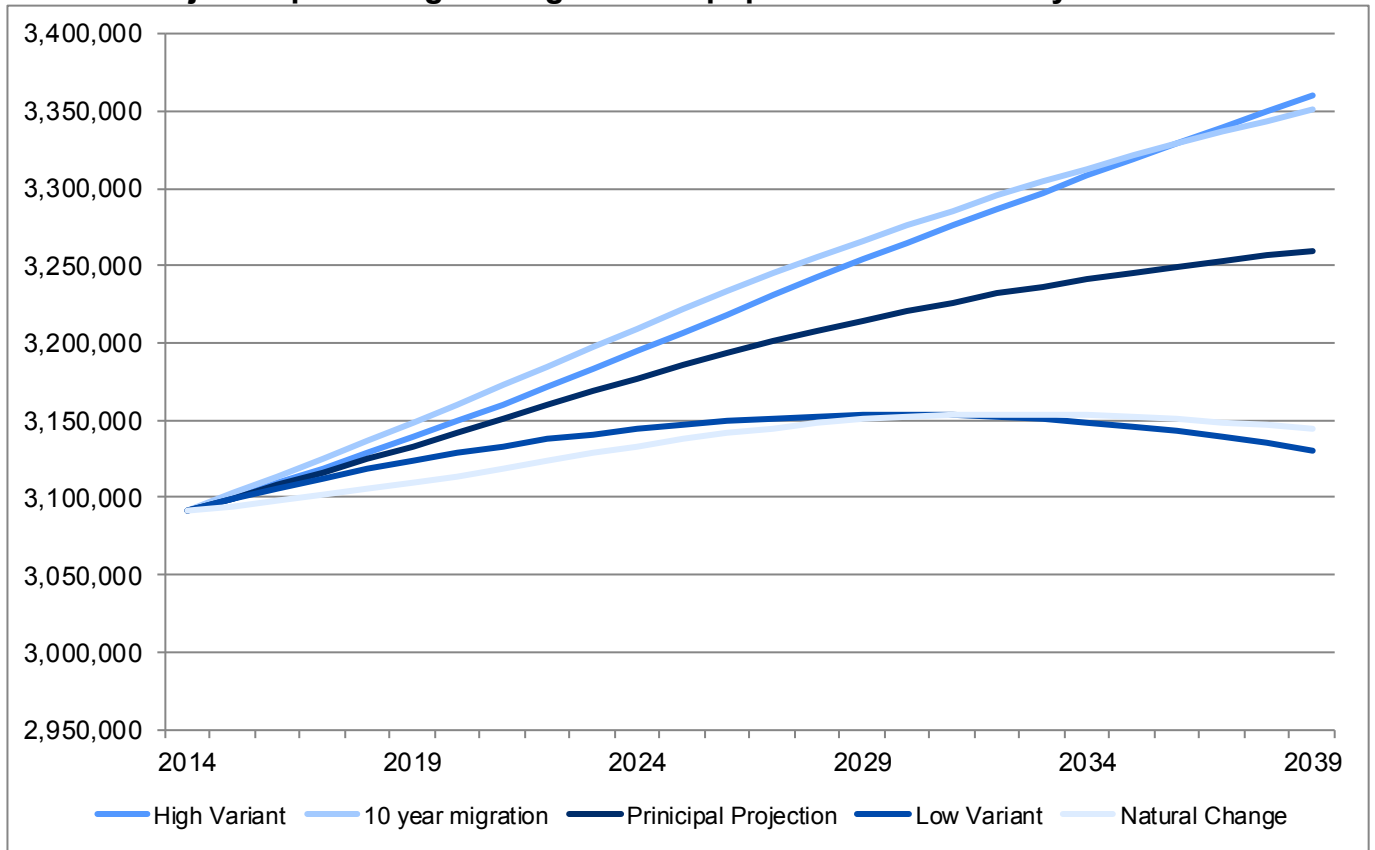
- a higher population variant which is based on assumptions of higher fertility rates and lower mortality rates
- a lower population variant which is based on assumptions of lower fertility rates and higher mortality rates
- a variant in which the migration assumption is based on average migration over a longer, ten-year period
- a zero migration variant to illustrate the projected population of each local authority if there were no future inward or outward migration.

Differences between the 'high variant' and principal projection for local authorities are around 4,600 on average, and between the 'low variant' and the principal projection around 5,900 at mid-2039.

Chart 6 shows the difference between the four variants and the principal projection for Wales. It should be noted that the SNPPs are not designed for use as a projection for Wales (i.e summing the local authorities), so the chart here is to illustrate those differences. For more complete analyses of the variants, please see the variants release.

The data for the variant projections has been published alongside this release. A statistical bulletin giving commentary on the variants will be published on 5 October.

Chart 6: Projected percentage change in total population for Wales by variant



Key quality information

Background

Population projections provide estimates of the size of the future population, and are based on assumptions about births, deaths, and migration. The assumptions are generally based on trends in recent years. They are not forecasts and do not try to predict the potential effects of local or central government policies on future population changes, or of changes in the lifestyle of the population.

The components of population change on which projections are based can be affected by changes in the economy and in the lifestyle of the population. The uncertainty associated with the local authority projections was modelled by producing variant projections together with the main population projection. These variant projections showed how possible variations in the fertility, mortality, and migration assumptions could affect the projections.

Local authorities are advised to use these published projections as a starting point, and are encouraged to produce their own variant projections and scenarios if required. The PopGroup software (there is a brief description in the *software* section) used to produce the projections is available to local authorities in Wales and (as in previous projection rounds) permission will be sought from ONS to share the base data used so that local authorities can use the data to create their own variants if they want to.

Relevance

Population and migration statistics are important for policy development, planning, and the provision of public services. There is a high demand for population and migration statistics for a range of uses. These include:

- planning services and estimating future need at national and local level, (for example, schools, health, and social services) including the preparation of Local Development Plans;
- contributing to the Local Government Finance revenue settlement;
- policy development;
- advice to Ministers;
- informing debate in the National Assembly for Wales and beyond;
- the calculation of further statistics (for example, Housing Estimates, and Household Projections);
- denominators in rates (for example, birth rates and mortality rates);
- the production of the weights in some sample surveys;
- geographic profiling, comparisons, and benchmarking;
- analysis of population cohorts and migration trends;
- supporting well-being assessments required under the Well-being of Future Generations (Wales) Act 2015.

There are a range of users of population data from national and local government, charities and voluntary sector organisations, other government departments, students, academics and universities, individual citizens, and private companies. In particular there is a high level of interest in projections at the local authority level. Those who plan for the future to deliver services and to

help frame sustainable policies need to consider the population analysed by age and sex. Population projections can identify trends that shape the context for future policy development.

The Planning (Wales) Act 2015 gained royal assent in July 2015. A key element of the Act is to enable local planning authorities to come together and prepare a Strategic Development Plan which transcends local authority boundaries, covering a wider geographical area and dealing with not just local issues. Evidence to support plan preparation will include demographic statistics and population and household projections which will need to be considered in a strategic context. Future iterations of projections will play a role in shaping strategic plans.

All local planning authorities with adopted Local Development Plans (LDPs) have to prepare an Annual Monitoring Report (AMR) which measures how policies have performed and what corrective action may be required. AMRs play a critical role in ensuring that the LDP is kept up-to-date. The progress demonstrated within the AMRs can have a bearing on future population levels and distribution, demographic profiles, and house prices. These outcomes and their relationship to the key objectives of the plan will form part of the AMR.

National Statistics status

The [United Kingdom Statistics Authority](#) has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the [Code of Practice for Official Statistics](#).

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 UK Statistics 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 Welsh Government'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.

The projections have been assessed by the [UK Statistics Authority](#) (UKSA) and have since been published as National Statistics. They are currently being re-assessed (together with those of other UK countries) and their National Statistics status is subject to confirmation, once all the requirements in the assessment report have been met.

There is more detail of the UKSA assessment in the *accessibility and clarity* section.

Accuracy

Population projections are trend-based projections that provide estimates of the size of the future population, and are based on assumptions about births, deaths and migration. The assumptions are generally based on past trends. Projections done in this way do not make allowances for the effects of local or central government policies on future population levels, distribution, and change. Population projections have their limitations. These local authority population projections are not policy-based forecasts; they indicate what is expected to happen if the trends on which they are based continue.

As the process of demographic change is cumulative, projections become increasingly uncertain the further they are carried forward. Demographic change affects some populations more rapidly and to a greater effect than others. Due to the size of estimated migration flows, for some local authorities migration assumptions are more critical than fertility and mortality assumptions. Therefore, migration assumptions can have a significant long-term effect on certain areas.

Assumptions around birth and death rates are based on historical levels of mortality and fertility and their interaction with the population size at each age. They are subject to variation (for example, through changes in fertility trends or increases in life expectancy) but such changes are not usually short-term. Migration can also interact with these trends, but the migration assumptions themselves are subject to short-term fluctuations based on economic or social circumstances. So the setting of migration rates for the future using the rates for the previous five years means that the projections are potentially vulnerable to short-term volatility in migration rates. This may be particularly true for current projections, since the assumptions are based on a period which included the global recession and widespread changes in levels of migration.

There are factors which can influence the projections and the three main components of population change: changes in the economy; changes in individual, family, and household behaviour; and events outside the UK. In order to illustrate the uncertainty associated with the local authority projections four variant projections were produced alongside the main (or principal) population projection. These variant projections showed how possible variations in the fertility, mortality, and migration assumptions could affect the projections.

Variant projections

In order to illustrate the inherent uncertainty around future demographic change when producing a set of projections it is possible to produce a principal projection based on an agreed set of assumptions, and a number of variants based on alternative assumptions. The projections in this Release are the principal 2014-based projections. A report detailing four variant projections has will also be published. A summary of the main points is included in this report.

For the 2014-based set of Local Authority Population Projections four variants have been produced (along with the principal projection) for each local authority. These variant projections are to show how possible variations in the fertility, mortality, and migration assumptions could affect the projections, and how the size of this effect increases the further into the projection period the results are taken. The four variant projections used are:

- A higher population variant which is based on assumptions of higher fertility rates and lower mortality rates.
- A lower population variant which is based on assumptions of lower fertility rates and higher mortality rates.
- A variant in which the migration assumption is based on average migration over a longer, ten-year period.
- A zero migration (or 'natural change only') variant to illustrate the projected population of each local authority if there were no future inward or outward migration.

Migration refers to people moving from and into a local authority whether internationally, from a different part of the UK, or from a different local authority in Wales.

Timeliness and punctuality

A consultation on Welsh Government statistical outputs on population and household estimates and projections ran from February to May 2016. The aim of the consultation was to find out about the experience of users in using these statistical outputs and how it would be possible to improve them.

The consultation stated that it had been proposed to start work on new projections for the 22 local authorities and the 3 national park authorities during the first half of 2016. The stated aim was to begin to publish results from the autumn of 2016, with on-going outputs up to early 2017 and the local authority population projections (that the ones in this Release) in September 2016.

Respondents were asked the following questions:

- Do you agree with this timetable?
- What are your future needs for projections?
- How frequently should they be produced?

Most respondents thought that sub-national population projections and household projections should be produced once every three years. The National park authorities preferred them to be produced every other year. Respondents were evenly divided on whether household estimates should be produced annually.

The consultation response stated that sub-national population projections and household projections will be produced every three years (including those for national park areas). Household estimates will be produced annually (probably around three months after the mid-year population estimates are published). The plan is to produce 2014-based household projections before the end of the current financial year.

The UKSA have proposed that the Welsh Government should work with ONS and other UK administrations to align the base year for sub-national and national projections where possible.

Respondents were asked the following question:

- Do you agree with this approach?

All respondents agreed with this. The Welsh Government will work with ONS and other UK administrations to align the base year for sub-national and national projections as far as possible. Currently the planned publication frequencies for the Welsh Government and ONS are different

(three years and two years respectively), so user needs will be considered ahead of each projections cycle. If there is an overwhelming user need for projections on a different base year to the national projections (as was the case for the 2011-based projections) this will be considered and any decision explained to users.

The report detailing the summary of the consultation responses and the Welsh Government follow-up actions has been published here:

<https://consultations.gov.wales/consultations/statistical-outputs-population-and-household-estimates-and-projections>

Please send any feedback on any aspects of these publications and any views on future timing requirements to: stats.popcensus@wales.gsi.gov.uk.

Accessibility and clarity

The UKSA published Assessment Report 310, *Population Estimates and Projections for Wales (produced by the Welsh Government)*, in July 2015. This is a link to that report:

<https://www.statisticsauthority.gov.uk/publication/population-estimates-and-projections-for-wales/>

It is one of a series of reports prepared under the provisions of the Statistics and Registration Service Act 2007. The Act gives the Statistics Authority power to re-assess whether the Code of Practice for Official Statistics continues to be complied with in relation to official statistics already designated as National Statistics. The report covers the following population estimates and population projections produced by the Welsh Government for Wales and reported in:

- Mid-year Estimates of the Population,
- Principal and Variant Local Authority Population Projections for Wales,
- Population Projections for National Parks.

The report forms part of a broader assessment of sets of population statistics across the UK that are produced by the Office for National Statistics (ONS); the Welsh Government; National Records of Scotland (NRS), and the Northern Ireland Statistics and Research Agency (NISRA).

Assessment reports 309, 311 and 312 examine the population statistics produced by ONS, NRS and NISRA respectively.

Requirement 8 of the UKSA assessment stated that:

“The accessibility of the Welsh Government’s existing population estimates and projections outputs needs improving.

The Welsh Government should:

- a) Improve the standard of commentary – to include additional contextual information and explanation for changes – and presentation to maximise accessibility for a wider range of users. ...”

The Welsh Government response to this requirement was:

“We made significant improvements to the commentary and presentation of the [Population Projections for National Parks in Wales](#) release, including seeking feedback from the UKSA Good Practice team. Commentary is provided on the population structure in the 2015 Release and explanations of the factors affecting population change are included (for example, population trends for differing age groups, natural change, and migration).

The text of the 2015 Release has been assessed for accessibility by a member of staff with a Diploma in Plain English awarded by the Plain English Campaign, which means that they are qualified to assess whether a document would receive a Crystal Mark (the industry standard for accessibility). It was judged that the 2015 Release would receive a Crystal Mark. The Release was found to have a Flesch Reading Ease Index of 35.1, a 37 per cent improvement over the 2011 Release. We will make similar improvements to the First Release *Local Authority Population Projections for Wales (2014-based)*.”

Comparability and coherence

Population projections are based on mid-year population estimates (as at 30 June each year). Mid-year population estimates for Wales and England are produced by the ONS. In order to produce the local authority projections the population estimates are combined with assumptions about births, deaths, and migration. These assumptions are based on past trends.

For migration the UN definition of an international migrant is used; that is, those changing country of residence for a period of at least 12 months. Short-term migrants (for example, migrant workers from Eastern European countries) are not counted in the population estimates.

These local authority projections are based on the mid-2014 population estimates for local authorities in Wales. This is a link to those estimates:

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/2015-06-25>

The base data used to make the calculations is produced by ONS for the length of the projection period, usually twenty-five years. In order to produce population projections, assumptions need to be formed to project future levels of fertility, mortality, and migration for each local authority.

This the link to the guidance on the methodology used by the ONS to produce the population estimates:

<http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/pop-ests/index.html>

These projections are based on a similar methodology to the one used for the 2011-based local authority population projections.

Local authority population projections are produced using a well established demographic approach known as the cohort component method. That is:

- taking the most recent year's population estimate;
- taking out special population groups;
- ageing every person on one year;
- adding births and subtracting deaths;
- allowing for inward and outward migration;
- adding back in the special population groups.

The methodology for these projections has been developed in close collaboration with local authorities and key users in Wales through the Wales Sub-national Projections (WASP) working group. This group has met on a regular basis during the preparation of the projections and has been a forum for technical discussion on the methodology and the base data used. Members of WASP include local authority and national park representatives and others with knowledge of and experience of demographic data and population projections.

The papers relating to and minutes of WASP meetings are here:

<http://gov.wales/statistics-and-research/about/user-engagement/statistical-groups-committees/wales-sub-national-projections-working-group/?lang=en>

Regular updates have also been provided at full meetings of the Welsh Statistical Liaison Committee (WSLC). Further information on the WSLC, including membership is provided at:

<http://gov.wales/statistics-and-research/about/user-engagement/statistical-groups-committees/welsh-statistical-liaison-committee/about-welsh-statistical-liaison-committee/?lang=en>

The assumptions are generally based on trends during the most recent 5 years, and the projections indicate what may happen should these trends continue. Adjustments have been made to the mortality assumptions at a five-year age group level, to take into account of future improvements in mortality rates. These adjustments have been taken from the ONS-produced national population projections. In recent years, there has been an improvement in mortality rates, and thus a longer life expectancy. This is assumed to continue into the future.

The fertility assumptions are based on trends in recent years; in which the general trend has been for slightly higher birth rates for women in their thirties indicating delayed motherhood. The projections indicate what may happen in the future should these trends continue. Adjustments have been made to the fertility assumptions at a five year age group level, to take into likely future patterns in terms of age of mother. These adjustments have been taken from the ONS produced national population projections.

All figures relating to working age and pensionable age populations are based on the state pension age for the given year. Between 2010 and 2020, state pension age will change from 65 years for men and 60 years for women, to 65 years for both sexes. Between 2024 and 2046, state pension age will increase in three stages from 65 years to 68 years for both sexes.

Guidance on the detailed methodology used to produce the subnational population projections for Wales has been published in this technical report. :

<http://gov.wales/docs/statistics/2016/160126-local-authority-population-projections-technical-en.pdf>

It describes how the local authority population projections were produced, and describes in detail the methodology used to derive assumptions on fertility, mortality, and migration.

Population projections are produced for similar small areas in England, Scotland and Northern Ireland, however, it should be noted that these projections are not directly comparable due to differences in methodology and base years. More information on the similarities and differences in these projections is available in:

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/methodologies/subnationalpopulationprojectionsacrosstheuk>.

Software

The PopGroup software was used to produce the projections. POPGROUP is a family of demographic models developed to generate population, household, labour force, and other derived projections for specified geographical areas or population groups (or both).

Forecasts can be made using a variety of data inputs and assumptions. Current populations and future populations can be estimated, with detailed age and sex composition. The main POPGROUP module provides a cohort component model (the methodology used by the UK national statistical agencies) that enables the development of population projections based on births, deaths, and migration inputs and assumptions.

POPGROUP can be used to produce population statistics of a quality suitable for use in strategic planning, service planning and policy development. POPGROUP is used extensively by local authorities and local and regional organisations across the UK. It uses Excel workbooks to manage the data inputs and outputs, and provides flexibility to enable users to experiment and analyse alternative projections.

Use of administrative data

The population projections use ONS administrative data. This is the link to the ONS quality and methodology information reports for the population theme.

<http://www.ons.gov.uk/ons/guide-method/method-quality/quality/quality-information/population/index.html>

The reports contain information on the methods used to compile the data for the named output and on the quality of that data. They are designed to give information on the strengths and limitations of the data so that decisions can be made on the appropriate uses of the data. ONS has the responsibility for assuring the quality of administrative data for use in official statistics. However, as a key user and producer of statistics the Welsh Government must ensure that the processes are appropriate to address any quality issues relevant to these projections, and the Welsh Government will work with ONS to consider how any improvements could be made in the future.

The administrative data used in the projections has been subject to internal checks for consistency and plausibility by the Welsh Government.

Birth statistics are based on the number of births occurring in a given year. They present data on births that occur and are then registered in England and Wales. Statistics are based on information collected at birth registration. Annual data are released in a series of theme-specific packages, usually between July and December. Annual birth statistics for the UK and its constituent countries are published in the vital statistics: population and health reference tables.

ONS birth statistics are based on registrations provided by the General Register Office (GRO). The data represent a legal record, making it the best and most complete data source.

As part of the birth registration process, before data are submitted through the Registration Online system for births and deaths (RON), the registrar asks the informant to verify that all data entered are accurate. The registrar is then able to correct any errors. There are some validation checks built into RON to help the registrar with this process. Information supplied at birth registration is generally believed to be correct since wilfully supplying false information may render the informant liable to prosecution.

When ONS receive birth registrations, a number of checks are carried out on records to ensure that they are valid. Checks are more frequent on those records with extreme values for main variables (such as age of mother and age of father) as these have a greater impact on published tables. Any birth records which appear questionable are raised with the GRO on a monthly basis for further investigation. Any proposed changes to the recording and collection of birth registration data are carefully managed and involve ONS, GRO, and other stakeholders. This ensures that any implications on birth statistics are taken into full consideration.

Changes recently made to the Population (Statistics) Act 1938 mean that improved data on previous children has been collected since May 2012. The changes will improve the accuracy of birth statistics by birth order and feed into estimates for family size and measures of fertility.

ONS carry out quarterly checks on the births dataset.

The Births and Deaths Registration Act (1836) made it a legal requirement for all deaths to be registered from 1 July 1837. Mortality statistics for England and Wales are based on the information collected when a death occurs and is then registered. Published figures represent the number of deaths registered in a reference period.

The annual mortality statistics cover England and Wales. The Annual Time Series Data table in the vital statistics: population and health reference tables provide a range of mortality statistics for the UK and its constituent countries, with some measures available back to 1838.

Daily extracts of death registrations from RON are received by ONS and then pass through a series of automatic validation processes which highlight any inconsistencies. The Mortality Metadata provides detailed information on the collection, processing, and quality of mortality data for England and Wales.

Internal consistency checks are then conducted to eliminate any errors made during the recording of deaths, and to ensure the annual dataset is complete. Before becoming usable for analysis the data pass through more validation checks and processes, these include running frequency counts on a range of variables, checking the plausibility of combinations of fields, and checking inconsistencies. Suspect records are referred back to register offices. Any concerns relating to cause of death are referred to a Medical Advisor or Medical Epidemiologist.

Long-term international and internal migration estimates at local authority level for England, Wales, Scotland and Northern Ireland are produced by ONS, NRS, and NISRA for the purpose of producing a range of population estimates. The data are presented as:

- Long-term international immigration and emigration volumes - representing the number of people arriving in the UK or leaving the UK for a period of at least 12 months.
- Internal in-migration and out-migration volumes - an estimate of migration within the UK (crossborder flows between each of the constituent countries, as well as migration between local authorities).
- Long-term international and internal migration turnover rates (such as volume of movement between in- and out-migration) per 1000 (of the total population)
- Long-term international inflow and outflow rates per 1000 (of the total population)
- Total volume of migration per 1000 (the sum of internal and international migration). This indicates more clearly the areas with high levels of population turnover

Short-term international migration estimates at local authority level for England and Wales are produced by ONS. The data consists of short-term international immigration volumes, representing the number of people who stayed in England and Wales for a period between 3 and 12 months.

The coverage of international migrants joining an administrative source will depend on the purpose of the particular administrative system and will invariably differ between sources.

From mid-2011 onwards, prisoners were regarded as usually resident at an institution if they are serving a custodial sentence of six months or more. Previously, prisoners were considered usually resident if they were serving a custodial sentence and had already been in prison for six months or more. This definition was changed in order to be more consistent with the 2011 Census definition of usual residence for prisoners.

For the Armed Forces special population, five years of data was averaged to estimate the number of armed forces in Wales for each sex and single year of age. These figures were then held constant through each year of the projection.

Prior to mid-2011, school boarders were treated as a special population as it was believed their movements were not captured in the data sources used to estimate internal migration. However, further research has shown that school boarder moves are measured in the internal migration estimates and therefore this component will no longer be included in the mid-year estimates. As a consequence school boarders were treated as a special population in the 2006-based and 2008-based local authority population projections but this will not be the case in current and future projections.

Well-being of Future Generations Act (WFG)

The Well-being of Future Generations Act 2015 is about improving the social, economic, environmental and cultural well-being of Wales. The Act puts in place seven well-being goals for Wales. These are for a more equal, prosperous, resilient, healthier and globally responsible Wales, with cohesive communities and a vibrant culture and thriving Welsh language. Under section (10)(1) of the Act, the Welsh Ministers must (a) publish indicators (“national indicators”) that must be applied for the purpose of measuring progress towards the achievement of the Well-being goals, and (b) lay a copy of the national indicators before the National Assembly. The 46 national indicators were laid in March 2016; and although this Release does not provide data for any of the targets explicitly, some of the targets could be considered in relation to the projected population sizes in the Release.

Information on indicators and associated technical information - [How do you measure a nation's progress? - National Indicators](#)

Further information on the [Well-being of Future Generations \(Wales\) Act 2015](#).

The statistics included in this release could also provide supporting narrative to the national indicators and be used by public services boards in relation to their local well-being assessments and local well-being plans.

Further details

The document is available at:

<http://gov.wales/statistics-and-research/local-authority-population-projections/>

A guidance leaflet on the local authority population projections for Wales can found here:

<http://gov.wales/docs/statistics/2016/160126-local-authority-population-projections-guidance-en.pdf>

It provides guidance on: population projections, the length of the projections, the use of local authority population projections, and when to use the national and local authority projections.

A set of Frequently Asked Questions is here:

<http://gov.wales/docs/statistics/2016/160126-population-projections-faqs-en.pdf>

Next update

September 2019 (provisional)

Feedback

We welcome any feedback on any aspect of these statistics which can be provided by email to stats.popcensus@wales.gsi.gov.uk

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