

Compendium

Migration assumptions



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1 . Introduction

This article provides detailed information on the principal and variant migration assumptions used in the 2016-based national population projections (NPPs). The new long-term assumption for net migration to the UK is +165,000 each year, compared with +185,000 in the 2014-based projections.

All figures in this report are rounded to the nearest hundred.

“Long-term” international migration assumptions refers to assumptions from the year ending mid-2023 onwards and “Short-term” international migration assumptions refers to assumptions made for the year ending mid-2017 up to the year ending mid-2023. These terms are not in any way references to the UN definitions of long- and short-term international migrants, they refer exclusively to assumptions of future levels of migration flows.

All migration assumptions made in the NPPs are for “long-term international migrants” under the UN definition: “A person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes his or her new country of usual residence”. No assumptions are made for short-term international migrants.

2 . Migration assumptions, data sources and methodology

International migration

Long-term assumptions of future international migration are derived through the extrapolation of historical time series data in civilian migration to and from each country of the UK.

Historical time series data on international migration are derived from a number of sources. The principal source is the International Passenger Survey (IPS). Adjustments are made to account for people who enter or leave the country initially for a short stay but subsequently decide to remain for a year or more (“visitor switchers”) and people who originally intended to be migrants but in reality stay in the UK or abroad for less than one year (“migrant switchers”). Flows to and from the Republic of Ireland, taking into account the discontinuity in 2008 due to methodological changes, are included in the IPS flows.

The IPS also excludes most, but not all people seeking asylum. Estimates of the flows of asylum seekers (and their dependants) not captured by the IPS are obtained from Home Office data as are the number of people from Syria granted humanitarian protection under the Vulnerable Persons Resettlement Scheme (VPRS). Data on the number of returning Home Armed Forces from Germany are obtained from British Forces Germany.

Cross-border migration

The 2016-based national population projections (NPPs) continue to use the improved methodology first implemented in the 2014-based NPPs for producing cross-border migration assumptions.

The assumptions for flows between the countries of the UK are set as rates which are based on the latest five years of mid-year population estimates (MYE) and National Health Service Central Register (NHSCR) data (mid-2012 to mid-2016).

It should be noted, however, that the Central Health Register Inquiry System (CHRIS) was closed in February 2016 so, as a result, no complete NHSCR data are available beyond 2015. ONS subsequently determined that it was more optimal to re-apply the data for the year ending (YE) mid-2015 for YE mid-2016 in the 2016-based projections rather than relying on partial 2016 data.

The main advantage of applying rates for cross-border migration is that migrant flows are linked to the changing underlying population size and age structure. This means that the projection cannot produce implausible values such as negative population stocks.

Lastly, an adjustment is applied to the rates to take the population of the country of destination into account, ensuring that net migration levels between countries of the UK are stabilised over the course of the projection. More detail can be found in the [cross-border methodology \(339Kb Pdf\)](#) document on our website.

Northern Ireland

Office for National Statistics (ONS) migration estimates no longer use IPS data for Northern Ireland from 2008 onwards and instead use data from the Northern Ireland Statistics and Research Agency (NISRA). In order to obtain the longest possible continuous time series for the production of national population projections, Northern Ireland data back to 1992 are obtained directly from NISRA.

3 . International migration assumptions

Long-term assumptions

The long-term international migration assumptions in the 2016-based projections take effect from the year ending mid-2023 and are held constant for each subsequent year.

The new long-term assumption for net international migration to the UK is +165,000 a year compared with +185,000 a year in the previous projections. The 2016-based assumption was derived through a 25-year average using the 25 most recent years of international migration data (mid-1992 to mid-2016) and a 10-year average of the most recent asylum seeker data.

The annual net international migration figure of +165,000 is higher than the expectation of the expert advisory panel (an average estimate of +144,000 in the longer-term). It should be noted that there was considerable variation between the experts when providing an estimate for long-term international migration to the UK. Please see Section 3 of the migration assumptions [consultation paper](#) for further details and a full summary of the expert panel questionnaire responses.

The breakdown of the long-term net international migration assumptions for the four countries of the UK is shown in Table 5.1. This table does not include the assumptions for cross-border migration between the constituent countries of the UK since these vary over the course of the projection because they were produced using a rates-based method. The cross-border flows are considered separately.

Table 5.1: Long-term annual international migration assumptions by country year ending mid-2023 onwards

	2016- based	2014- based	Difference
International net migration			
England	152,000	170,500	-18,500
Wales	4,500	4,000	500
Scotland	7,000	9,500	-2,500
Northern Ireland	1,500	1,000	500
UK	165,000	185,000	-20,000

Source: Office for National Statistics

Notes:

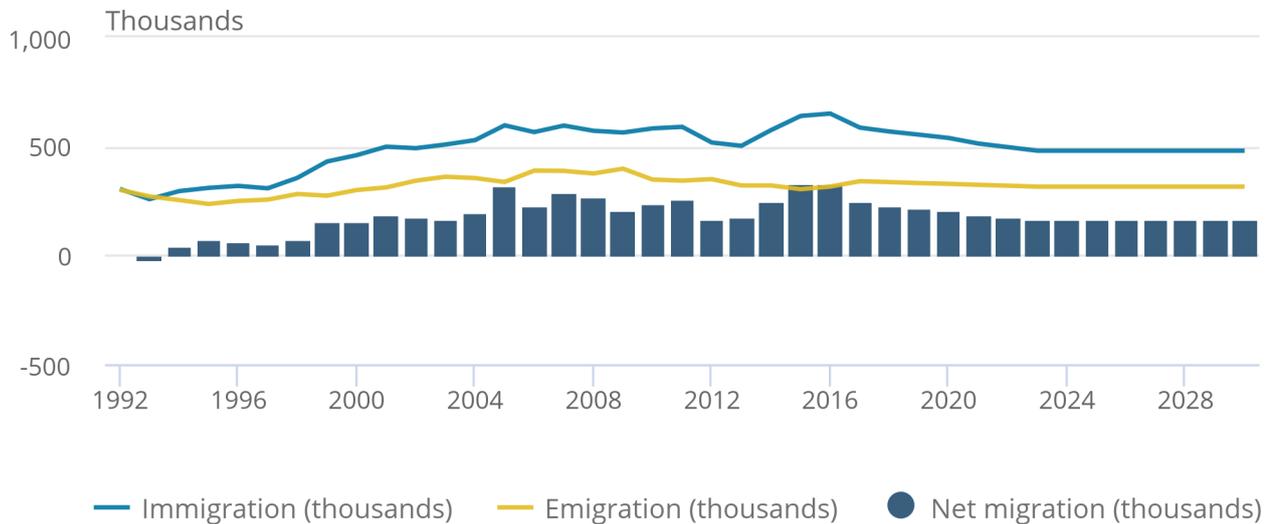
1. Figures are rounded to the nearest hundred.

Figure 5.1: Total long-term international migration, UK, year ending mid-1992 to year ending mid-2030

UK

Figure 5.1: Total long-term international migration, UK, year ending mid-1992 to year ending mid-2030

UK



Source: Office for National Statistics

Notes:

1. Historical international migration figures for England, Scotland and Wales are primarily based on International Passenger Survey data and Northern Ireland figures are obtained directly from NISRA. The figures in this chart will differ from published calendar year long-term international migration (LTIM) estimates.
2. 2002 to 2010 immigration and emigration figures reflect revisions made in light of the results of the 2011 Census; therefore the figures may differ from the published LTIM estimates.
3. Historical migration figures are rounded to the nearest 1,000.
4. Data for year ending mid-2017 and onwards are projections.

Short-term assumptions

Short-term international migration assumptions (shown in Table 5.2) are created for the projection period of mid-2017 to mid-2022 to allow for a smooth transition from the latest mid-year international migration estimates to the long-term international migration assumptions. These assumptions also account for the planned return of Home Armed Forces (HAF) personnel and their dependants from Germany, as well as people granted humanitarian protection who come to the UK from Syria through the Vulnerable Persons Resettlement Scheme (VPRS).

Additionally, a special adjustment was made to the international migration assumptions for England, Wales and Scotland in the first year (mid-2017) of their respective projections following the release of the most recent [Migration Statistics Quarterly Report](#) in August 2017.

Specifically, the year ending March 2017 long-term international migration (LTIM) estimates at the UK level were used as the international migration flow assumption (which excludes asylum seekers, HAF and persons arriving through the VPRS) for the year ending mid-2017 in the projections.

This new UK-level assumption was then proportioned to each country in the UK based on their share of total international migration over the last five years for which data are available (2012 to 2016).

No adjustment was made to the original migration assumption for Northern Ireland as medical card data suggested that migration flows to and from Northern Ireland for the year ending mid-2017 will remain at similar levels to the year ending mid-2016, hence the adjustments were only applied to England, Wales and Scotland.

The adjustment originally intended for Northern Ireland was applied to England in order to maintain consistency with year ending March 2017 LTIM estimates at the UK level.

Trajectory of short-term assumptions

From mid-2017 to mid-2022, the short term assumptions for England, Wales and Scotland follow a linear trajectory to the long-term international migration assumption in 2023. For Northern Ireland, this linear trajectory starts from mid-2016 as no special adjustment was made to their mid-2017 international migration assumption.

Syrian Vulnerable Persons Resettlement Scheme (VPRS)

In 2015, the Government made significant extensions to the Syrian Vulnerable Persons Resettlement Scheme (VPRS). Under the scheme, 20,000 Syrians granted humanitarian protection will be resettled in the UK by 2020.

The 2016-based projections assume that a total of 4,100 people will migrate to the three Great Britain countries (England, Wales and Scotland) through the VPRS each year until mid-2020. The assumption for Northern Ireland is set to zero as people arriving through the VPRS are included and modelled with their international migration flows.

The assumptions for the Great Britain countries are calculated by taking away the number of people who have already arrived through the VPRS at the UK level from the pledged figure of 20,000 and assuming that the remaining migrants will arrive evenly up to mid-2020.

Assumed migrants arriving under the scheme are then proportioned to each UK country based on their distributions calculated using the latest available VPRS data from the Home Office. The assumption for Northern Ireland is subsequently set to zero as explained earlier.

Table 5.2: Short-term annual net international migration assumptions, UK and constituent countries, year ending mid-2017 onwards

	UK	England	Wales	Scotland	Northern Ireland
Total net international migration					
2016 to 2017	246.1	214.5	12.7	17.4	1.5
2017 to 2018	232.1	204.0	10.7	15.9	1.5
2018 to 2019	222.1	197.0	9.7	13.9	1.5
2019 to 2020	210.6	187.5	8.7	12.9	1.5
2020 to 2021	189.5	170.0	7.5	10.5	1.5
2021 to 2022	177.0	162.0	5.5	8.0	1.5
Long-term assumption (2022 to 2023 onwards)	165.0	152.0	4.5	7.0	1.5
Net international migration (excludes HAF and VPRS)					
2016 to 2017	240.0	210.0	12.5	16.0	1.5
2017 to 2018	227.5	201.0	10.5	14.5	1.5
2018 to 2019	215.5	192.0	9.5	12.5	1.5
2019 to 2020	202.0	180.5	8.5	11.5	1.5
2020 to 2021	189.5	170.0	7.5	10.5	1.5
2021 to 2022	177.0	162.0	5.5	8.0	1.5
Long-term assumption (2022 to 2023 onwards)	165.0	152.0	4.5	7.0	1.5
Returning armed forces from Germany (including dependants)					
2016 to 2017	2.0	2.0	0.0	0.0	0.0
2017 to 2018	0.5	0.5	0.0	0.0	0.0
2018 to 2019	2.5	2.5	0.0	0.0	0.0
2019 to 2020	4.5	4.5	0.0	0.0	0.0
2020 to 2021	0.0	0.0	0.0	0.0	0.0
2021 to 2022	0.0	0.0	0.0	0.0	0.0
Long-term assumption (2022 to 2023 onwards)	0.0	0.0	0.0	0.0	0.0
Migration through VPRS					
2016 to 2017	4.1	2.5	0.2	1.4	0.0
2017 to 2018	4.1	2.5	0.2	1.4	0.0
2018 to 2019	4.1	2.5	0.2	1.4	0.0
2019 to 2020	4.1	2.5	0.2	1.4	0.0
2020 to 2021	0.0	0.0	0.0	0.0	0.0
2021 to 2022	0.0	0.0	0.0	0.0	0.0
Long-term assumption (2022 to 2023 onwards)	0.0	0.0	0.0	0.0	0.0

Source: Office for National Statistics

Notes:

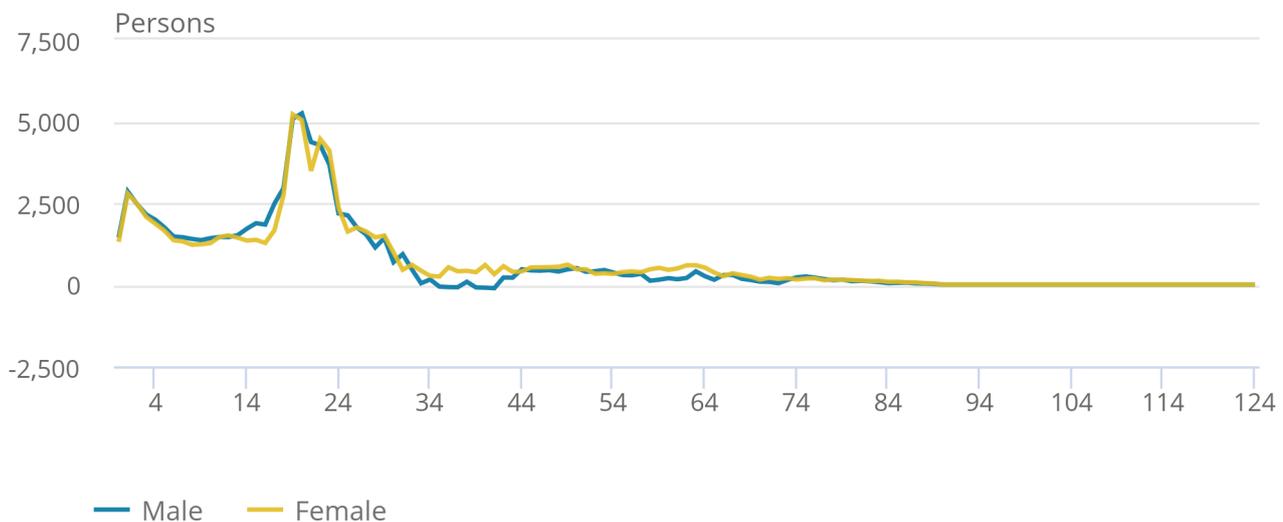
1. International migration includes IPS flows with allowance for migrant and visitor switchers, asylum seekers and flows to and from the Republic of Ireland.

Age and sex distributions

Figure 5.2 shows assumed long-term annual net international migration by age and sex for the UK from the year ending mid-2023 onwards. The international distributions are derived from an average of five years' historical international migration data from the mid-year population estimates.

Figure 5.2: Long-term annual net international migration by age and sex, UK, year ending mid-2023 onwards

Figure 5.2: Long-term annual net international migration by age and sex, UK, year ending mid-2023 onwards



Source: Office for National Statistics

4 . Cross-border migration assumptions

The assumptions for the flows between the countries of the UK are set as rates rather than fixed numbers of migrants. Annual age and sex-specific migration rates for each cross-border flow are calculated as the number of migrants at the end of the year divided by the population of the country of origin at the start of the year. An average of rates for the last five years of actual data (year ending mid-2012 to year ending mid-2016) is then taken and applied to the population of the country of origin at the beginning of each projection year to calculate the projected number of migrants for each flow.

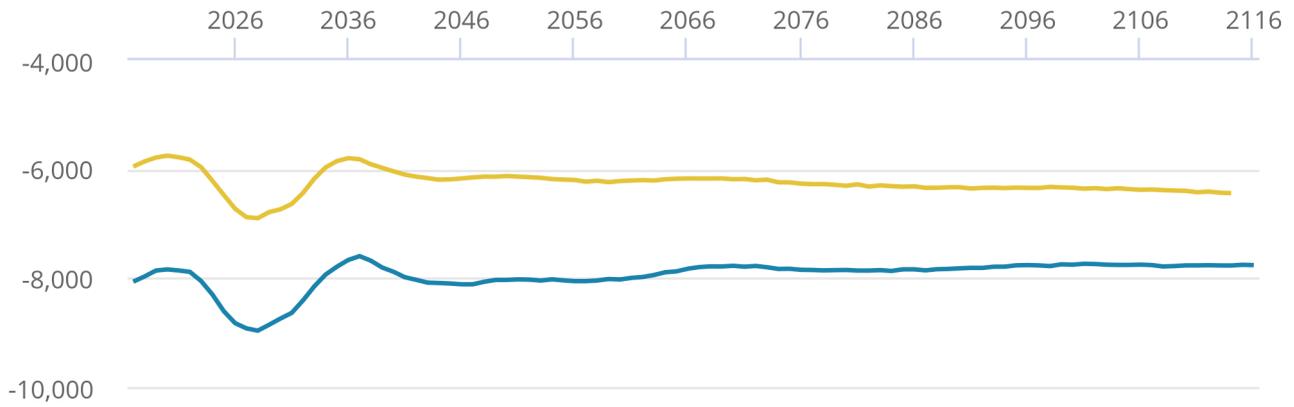
The underlying age and sex distributions for cross-border migration are based on data from Northern Ireland Statistics and Research Agency (NISRA), National Records of Scotland (NRS) and Office for National Statistics (ONS).

Figure 5.3: Cross-border net migration assumptions, England, for year ending mid-2017 to year ending mid-2116

Persons

Figure 5.3: Cross-border net migration assumptions, England, for year ending mid-2017 to year ending mid-2116

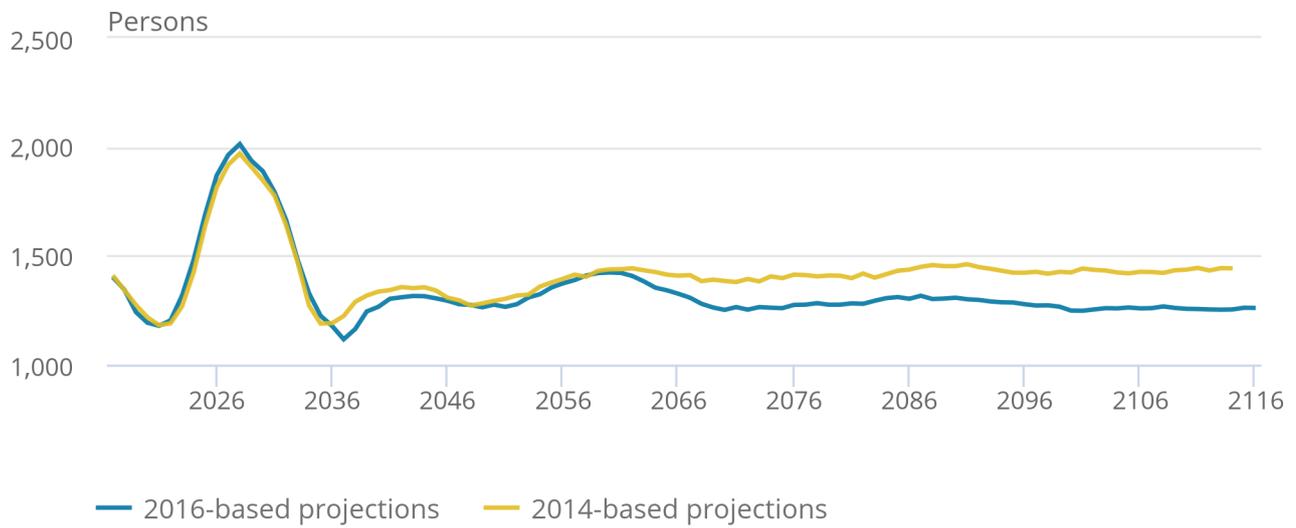
Persons



Source: Office for National Statistics

Figure 5.4: Cross-border net migration assumptions, Wales, for year ending mid-2017 to year ending mid-2116

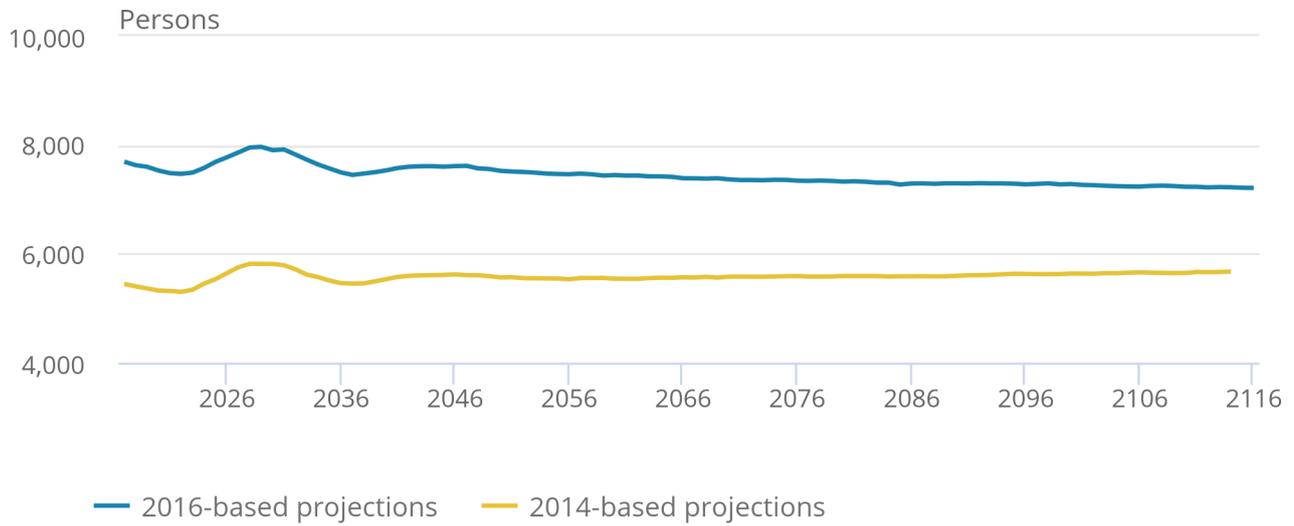
Figure 5.4: Cross-border net migration assumptions, Wales, for year ending mid-2017 to year ending mid-2116



Source: Office for National Statistics

Figure 5.5: Cross-border net migration assumptions, Scotland, for year ending mid-2017 to year ending mid-2116

Figure 5.5: Cross-border net migration assumptions, Scotland, for year ending mid-2017 to year ending mid-2116

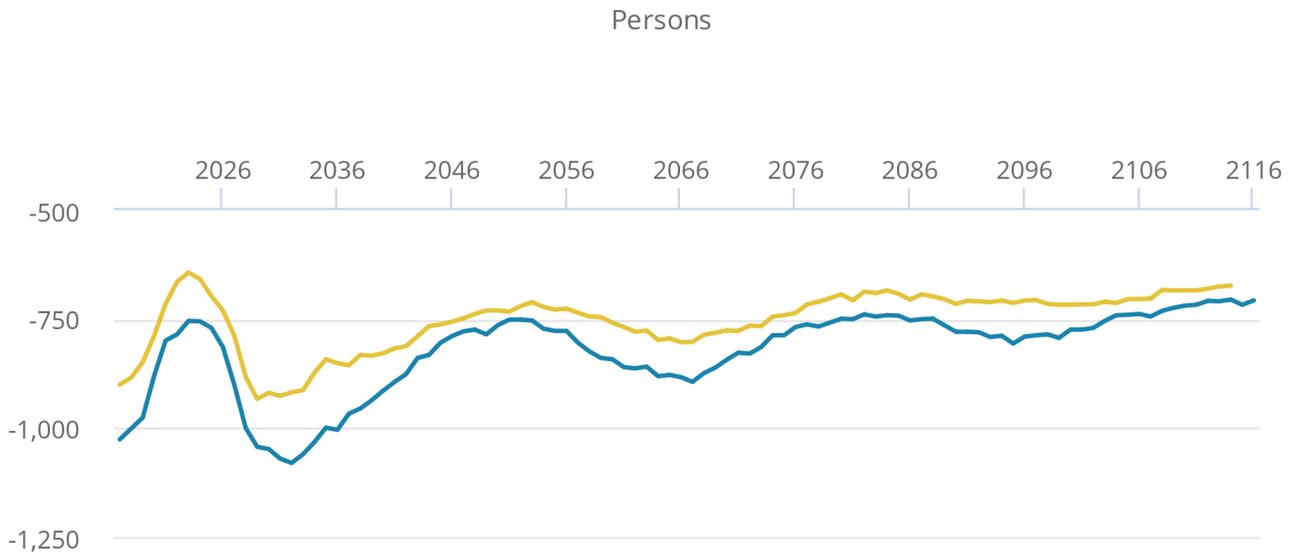


Source: Office for National Statistics

Figure 5.6: Cross-border net migration assumptions, Northern Ireland, for year ending mid-2017 to year ending mid-2116

Persons

Figure 5.6: Cross-border net migration assumptions, Northern Ireland, for year ending mid-2017 to year ending mid-2116



Source: Office for National Statistics

5 . Migration variant assumptions

Standard migration variants

The standard high and low migration variants are produced by varying the international in and out flow assumptions and using the principal assumptions for fertility and mortality. The assumptions are additive such that the UK-level assumptions are equal to the sum of the four individual countries.

The 2016-based high and low migration variant projection net migration assumptions increase or reduce the UK principal net migration assumption by 80,000. In the first projected year (mid-2017) the variants only assume half of the long-term width (40,000 higher or lower than the principal assumption), to allow for a smoother transition.

Table 5.3 and Figure 5.7 show the assumed long-term annual net migration for the standard variants for the UK and its constituent countries.

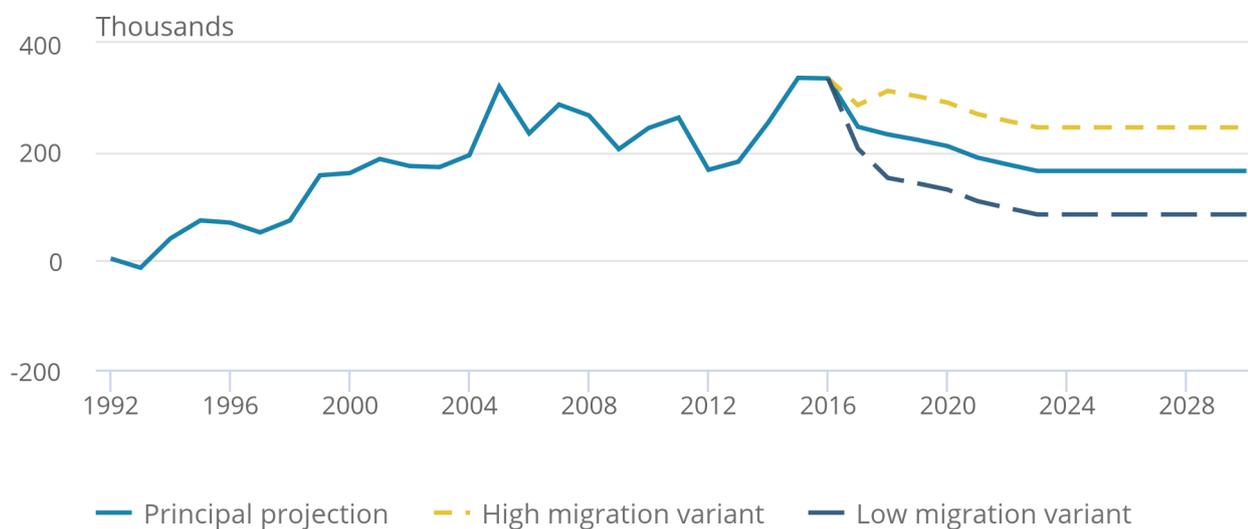
Table 5.3: Assumed long-term annual net international migration for the standard variants, UK

	High	Principal	Low
England	214,500	152,000	89,500
Wales	9,000	4,500	0
Scotland	15,500	7,000	-1,500
Northern Ireland	6,000	1,500	-3,000
UK	245,000	165,000	85,000

Source: Office for National Statistics

Figure 5.7: Estimated and assumed total net international migration, United Kingdom, year ending mid-1992 to year ending mid-2030

Figure 5.7: Estimated and assumed total net international migration, United Kingdom, year ending mid-1992 to year ending mid-2030



Source: Office for National Statistics

Notes:

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4. Data for year ending mid-2017 and onwards are projections.

Northern Ireland variants

Northern Ireland alternative scenario migration assumptions were created at the request of the Northern Ireland Statistics and Research Agency (NISRA).

The moderate high migration variant assumes long-term net international migration to Northern Ireland to be +3,000 per year; other countries of the UK follow the high migration assumption.

The moderate low migration variant follows the low migration variant assumptions for England, Scotland and Wales. It is assumed long-term international migration for Northern Ireland will be -1,500 per year.

EU variants

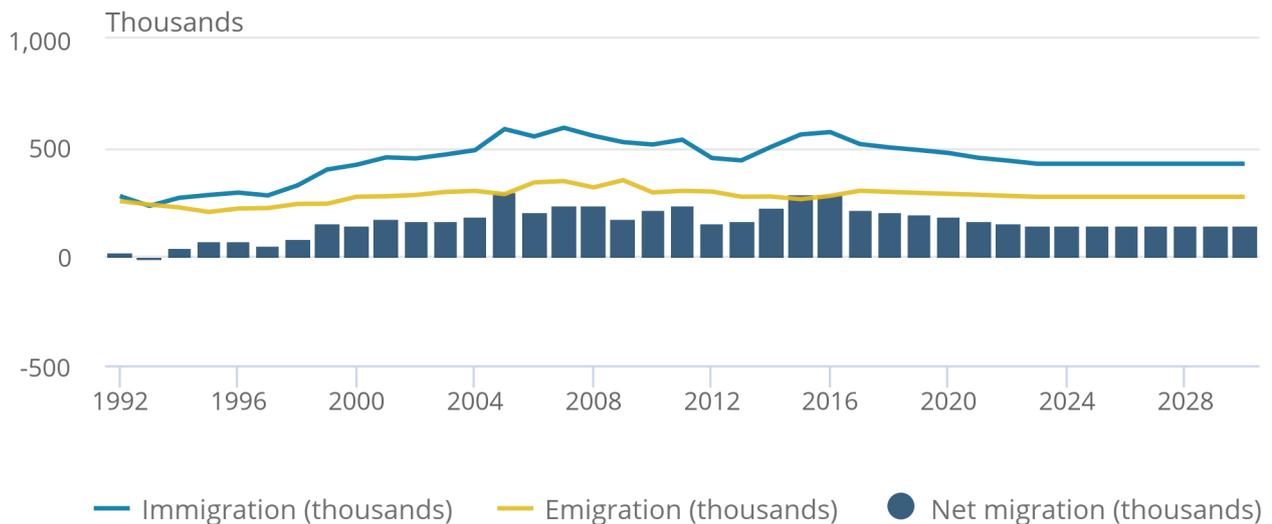
The 0% future EU migration, 50% future EU migration and 150% future EU migration variant assumptions are created by applying percentage changes by single year of age and sex to the principal international migration assumption. The percentage changes are calculated using the last three years of long-term international migration estimates and are applied to the principal projections from mid-2019 onwards.

These variant projections are not classed as National Statistics, because they have not been created using a standard projections method. They were created on request to fulfil specific stakeholder requirements.

6 . Appendix A: England charts

Figure 5.1a: Total long-term international migration, England, year ending mid-1992 to year ending mid-2030

Figure 5.1a: Total long-term international migration, England, year ending mid-1992 to year ending mid-2030



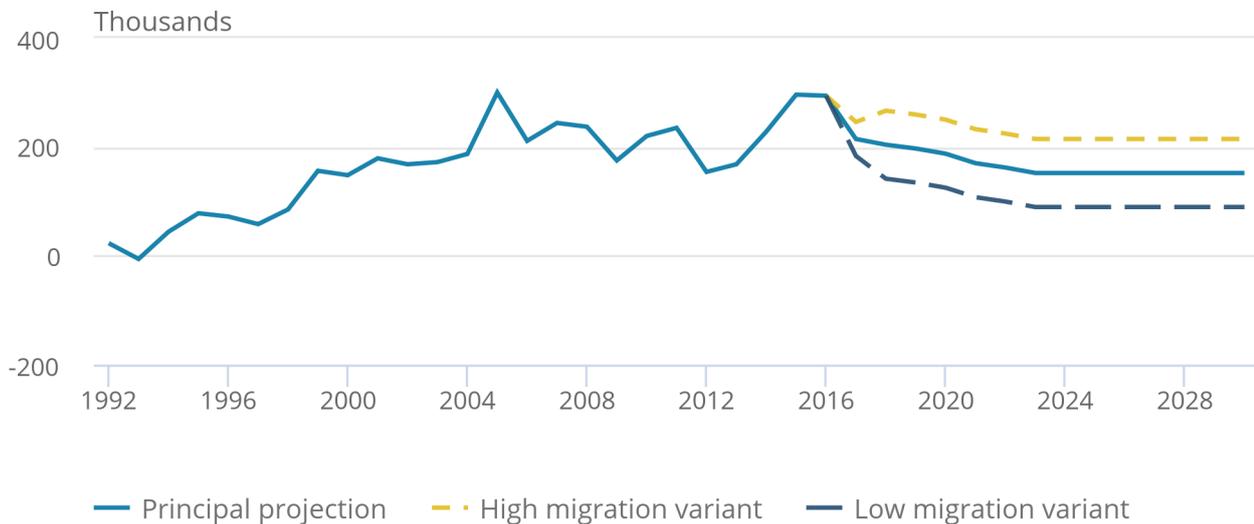
Source: Office for National Statistics

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Figure 5.7a: Estimated and assumed total net long-term international migration, England, year ending mid-1992 to year ending mid-2030

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Source: Office for National Statistics

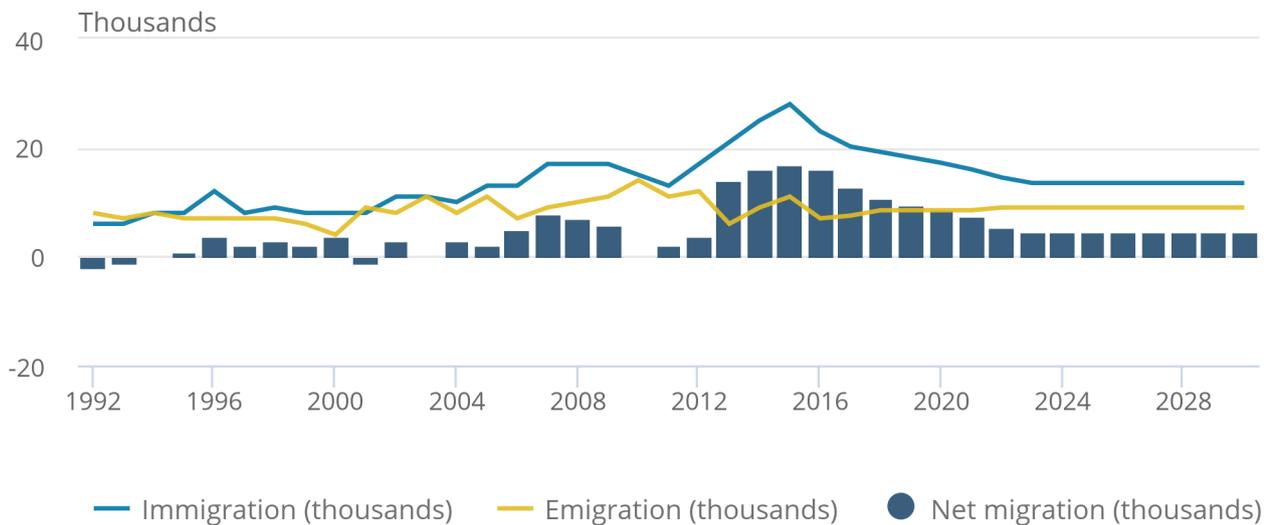
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7 . Appendix B: Wales charts

Figure 5.1b: Total long-term international migration, Wales, year ending mid-1992 to year ending mid-2030

Figure 5.1b: Total long-term international migration, Wales,
year ending mid-1992 to year ending mid-2030



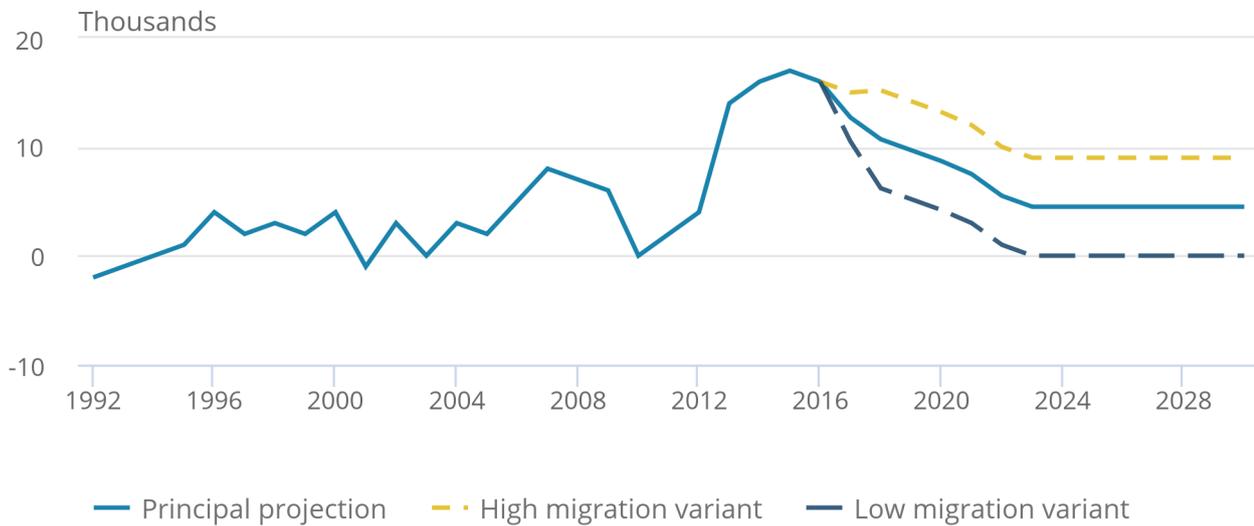
Source: Office for National Statistics

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Figure 5.7b: Estimated and assumed total net long-term international migration, Wales, year ending mid-1992 to year ending mid-2030

Figure 5.7b: Estimated and assumed total net long-term international migration, Wales, year ending mid-1992 to year ending mid-2030



Source: Office for National Statistics

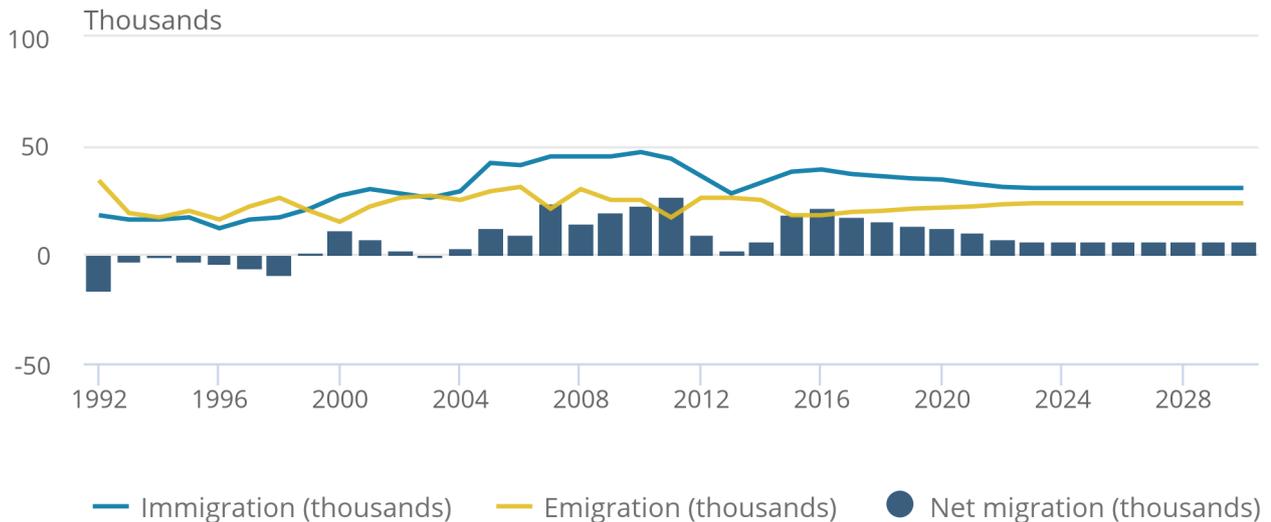
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8 . Appendix C: Scotland charts

Figure 5.1c: Total long-term international migration, Scotland, year ending mid-1992 to year ending mid-2030

Figure 5.1c: Total long-term international migration, Scotland, year ending mid-1992 to year ending mid-2030



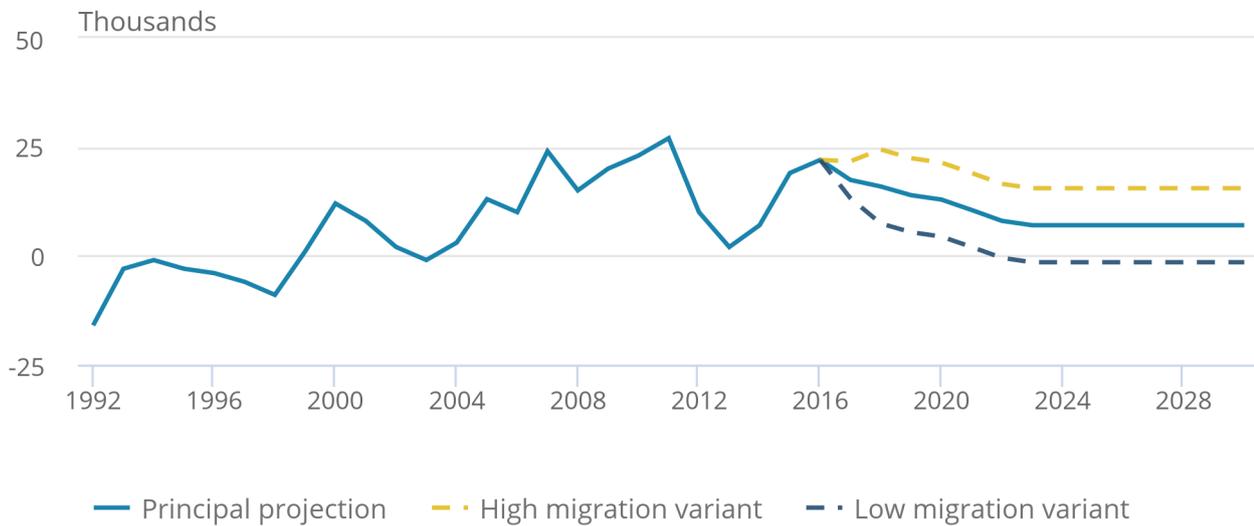
Source: Office for National Statistics

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Figure 5.7c: Estimated and assumed total net long-term international migration, Scotland, year ending mid-1992 to year ending mid-2030

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Source: Office for National Statistics

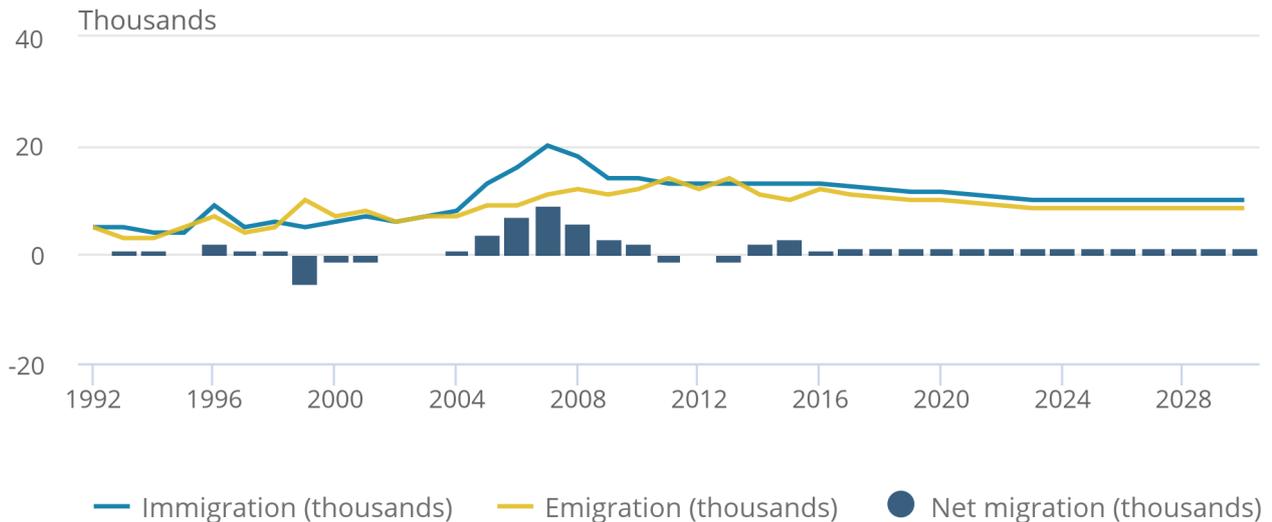
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9 . Appendix D: Northern Ireland charts

Figure 5.1d: Total long-term international migration, Northern Ireland, year ending mid-1992 to year ending mid-2030

Figure 5.1d: Total long-term international migration, Northern Ireland, year ending mid-1992 to year ending mid-2030



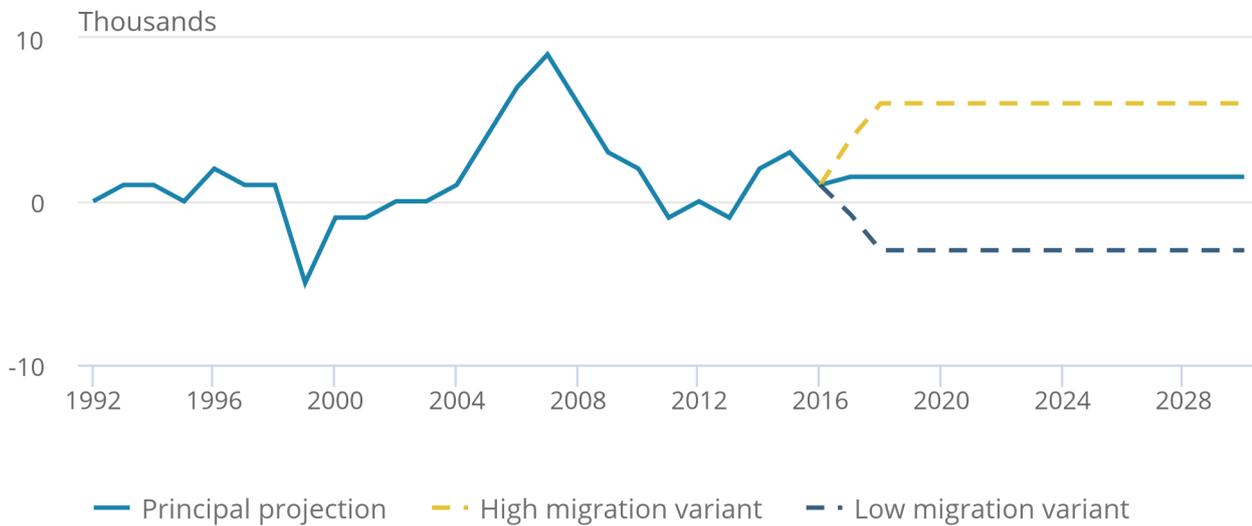
Source: Office for National Statistics

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Figure 5.7d: Estimated and assumed total net long-term international migration, Northern Ireland, year ending mid-1992 to year ending mid-2030

Figure 5.7d: Estimated and assumed total net long-term international migration, Northern Ireland, year ending mid-1992 to year ending mid-2030



Source: Office for National Statistics

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10. Background notes

1. Discussion papers showing the background information used in setting the migration assumptions are available on our website.
2. Details of the policy governing the release of new data are available [from the UK Statistics Authority website](#) or from the Media Relations Office email: media.relations@ons.gsi.gov.uk
3. These National Statistics are produced to high professional standards and released according to the arrangements approved by the UK Statistics Authority.

