

Article

# National population projections: 2016-based extra variants

In addition to the principal projection, variant projections are produced based on alternative assumptions of future fertility, mortality and net migration. This release presents the data for an additional six combination and special case variant projections.



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# 1 . Introduction

Further to the publication of the [2016-based national population projections](#) (NPPs) for the UK and constituent countries on 26 October 2017, this release presents the data for another six variant projections based on alternative assumptions of future fertility, mortality and migration.

These variant projections are created to offer users a range of “what-if” scenarios to illustrate the consequences of a particular, but not necessarily realistic, set of assumptions such as constant fertility or no change and should not be confused with the [main NPP variant projections](#).

The assumptions made for each of the six projections are outlined in Table 1.

**Table 1: 2016-based extra variant projections and their assumptions on future fertility, mortality and international net migration, UK and constituent countries**

| <b>Table reference</b> | <b>Variant projection</b> | <b>Fertility assumption used</b> | <b>Life expectancy assumption used</b> | <b>Net migration assumption used</b> |
|------------------------|---------------------------|----------------------------------|--|--------------------------------------|
| K                      | Young age structure       | High                             | Low                                    | High                                 |
| L                      | Old age structure         | Low                              | High                                   | Low                                  |
| O                      | Replacement fertility     | Replacement                      | Principal                              | Principal                            |
| P                      | Constant fertility        | Constant                         | Principal                              | Principal                            |
| Q                      | No mortality improvement  | Principal                        | No improvement                         | Principal                            |
| R                      | No change                 | Constant                         | No improvement                         | Principal                            |

Source: Office for National Statistics

## 2 . Special case assumptions

Constant fertility, replacement fertility and no mortality improvement assumptions are special case assumptions used only in the extra variant projections listed in Table 1. These assumptions are described in this section.

### Constant fertility

The constant fertility assumption assumes that age-specific fertility rates will remain constant at the values assumed for the first year (mid-2016 to mid-2017) of the principal projection.

### Replacement fertility

The replacement fertility assumption assumes a fertility rate of 2.075, meaning that women are assumed to have an average of 2.075 children over their lifetime. This is the level of fertility required for the population to replace itself in size in the longer term.

## No improvement to life expectancy

The no improvement to life expectancy assumption assumes that the age- or sex-specific mortality rates will remain constant at the values assumed for the first year (mid-2016 to mid-2017) of the principal projection.

## 3 . Long-term balanced net migration

In the 2014-based national population projections (NPPs) extra variants release, we produced the long-term balanced net migration variant projection. This variant was a user-led variant projection produced to meet specific stakeholder requirements at the time.

For the 2016-based NPPs, a decision has been made to no longer produce the long-term balanced net migration projection because of the lack of clear user need.

## 4 . Useful links

- [National population projections: 2016-based statistical bulletin](#)
- [National population projections: 2016-based projections, methodology](#)
- the [National population projections table of contents](#)
- [Frequently asked questions](#)
- an [interactive population pyramid](#), allowing comparison of the main (principal) and variant projections through time
- the [National population projections Quality and Methodology Information report](#)