

Summary Quality Report for Population Estimates by Marital Status

1 Introduction

This report is part of a rolling programme of quality reports being introduced by the Office for National Statistics (ONS). The full programme of work being carried out on [Statistical Quality](#)¹ is available on the National Statistics website. Summary Quality Reports are overview notes which pull together key qualitative information on the various dimensions of quality as well as providing a summary of methods used to compile the output.

Population estimates by legal marital status are National Statistics which provide estimates of the resident population who are single, married, widowed and divorced. They are published by sex and single year of age for England and Wales combined. Population estimates by marital status are used as source data for other ONS outputs, such as population projections by marital status, but are also of interest to government departments, local government, commercial companies, special interest groups, academia, and the general public. This report provides users with information on the usability and fitness for purpose of these statistics.

2 Summary of Quality

2.1 Relevance

The degree to which the statistical product meets user needs for both coverage and content.

This product is part of the official set of population estimates by marital status for England and Wales, consisting of annual published estimates from 1991 onwards. Figures back to 1971 are available on request via email pop.info@ons.gov.uk or telephone on 01329 444661.

The estimates refer to the mid-year (30 June) usually resident population, and are available for England and Wales by sex and single year of age. Population estimates by marital status refer to legal marital status; whether an adult is single, married, widowed or divorced. Those aged under 16 years old are assumed to be single. In terms of legal status, separated couples are considered to be married, and cohabiting couples retain their legal marital status whether that is single, married, widowed or divorced.

Population estimates by marital status for mid-2007 onwards have included an adjustment to account for legal marriages of residents of England and Wales that take place abroad, and for marriages to overseas residents that take place in England and Wales. Throughout this report these marriages are referred to as 'marriages abroad'. Information on the research carried out by ONS prior to implementing this adjustment can be found in [Report: Marriages abroad 2002-2007](#)². Revised estimates for mid-2002 to mid-2007 including this adjustment were published on 30 April 2009. These can be found on the [Mid-Year Marital Status Population Estimates](#)³ page on the ONS website. Population estimates by marital status excluding marriages abroad continue to be published alongside those including marriages abroad.

The estimates describe the usually resident population, which includes all people who usually live in England and Wales, regardless of their nationality. The [Summary Quality Report for Mid-Year Population Estimates](#)⁴ provides further information on the definition of usually resident population.

Marital status estimates for geographies lower than England and Wales are not produced because marriage and divorce data are not available by area of residence. Marriage registrations are collected by registration district, however the fact that a marriage has taken place in a particular district does not mean that one or both parties are resident there. A similar issue exists for divorce data, which are collected by divorce court, but neither includes nor implies information on residence.

Population estimates by marital status have a number of uses, both direct and indirect, informing policy decisions at a national level. The estimates are used as denominators in the calculation of rates, for example the rate of births within marriage. The estimates are also used as source data for other ONS outputs, such as population projections by marital status, which are, in turn, used as an input for household projections published by Communities and Local Government (CLG). Population projections by marital status are also used by the Department for Work and Pensions (DWP) to cost various aspects of the future social security programme. Population estimates by marital status and associated outputs are also of interest to government departments, local government, commercial companies, special interest groups, academia, and the general public.

2.2 Accuracy

The closeness between an estimated result and the (unknown) true value.

Statistics on marriage, divorce, birth and death registrations are collected through administrative sources, maintained by the General Register Office (GRO) and the Ministry of Justice (MoJ). These data are considered very reliable for two reasons. Firstly, there is a legal requirement to register a marriage, divorce, birth or death and the certificate issued upon registration is needed and used by the recipient. Secondly, administrative data do not suffer from sampling error in the way that survey data do.

An adjustment is made to the marriage registration data to account for marriages abroad. Information from the [International Passenger Survey \(IPS\)](#)⁵ is used to estimate the total number of England and Wales residents who travelled abroad to marry and the total number of overseas residents who travelled to England and Wales to marry. Estimates derived from the [IPS](#)⁵ are subject to sampling error. Research work prior to the introduction of this method indicated that it would improve the accuracy of the estimates. Background information on measuring marriages abroad can be found in [Report: Marriages abroad 2002-2007](#)² and detailed information on the methodology used to revise the mid-2002 to mid-2007 estimates onwards can be found in ['Methodology to adjust mid-year population estimates by marital status for marriages abroad'](#)⁶.

Census estimates of the resident population by marital status are rolled forward to provide updated estimates in subsequent years. The population estimates by marital status are constrained to the ONS mid-year population estimates for England and Wales by single year of age and sex. Population estimates are produced using a well established demographic approach called the cohort component method. This involves combining information from a number of data sources including the previous Census, survey data and administrative registers. The data sources used are the best that are available on a nationally consistent basis down to local authority level, however the estimates are subject to the coverage and error associated with these sources. Further information on the quality of the mid-year population estimates, including a brief explanation of the cohort component method can be found in the [Summary Quality Report for Mid-Year Population Estimates](#)⁴.

In a period of considerable population change and individual mobility, meeting the requirements of users has become more challenging. ONS is undertaking a substantial and long term programme of work to improve the population and migration statistics it produces, including the population estimates by marital status. The scope for improving migration and population statistics was addressed in the conclusions and recommendations of the National Statistician's Task Force on Migration Statistics. The [Inter-departmental Migration Task Force Report](#)⁷ was published in December 2006 and made recommendations for improvements between 2008 and 2012. These recommendations are currently being taken forward as part of the Improving Migration and Population Statistics (IMPS) programme of work and will be carried out in conjunction with Government Departments. The programme includes work to estimate and describe the quality of population estimates, for which further information can be found in the [Interim report on quality measures for population estimates](#)⁸.

2.3 Timeliness and Punctuality

Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the time lag between the actual and planned dates of publication.

Population estimates by marital status for England and Wales are usually published annually at the end of November. For a particular mid-year (30 June) they become available around 17 months after the reference date. This time lag reflects the availability of the data sources which measure the components of population and marital status change over the year preceding the estimate, and the time required to process the data and calculate the estimates. The publication date for population estimates by marital status is determined by the availability of the mid-year population estimates, registration data for marriages, divorces, births and deaths and [IPS](#)⁵ data for the relevant time period. Late occurrences of registration data are used to update the previous year's estimate before compiling the current year's estimate. In the year following the release of Census estimates, the population estimates by marital status are published later than the usual November release date. The [National Statistics Publication Hub Release Calendar](#)⁹ provides previous and forthcoming dates of release.

The publication of population estimates by marital status would only be later than the planned date if essential data used to calculate the estimates were not available, for example if marriage data were not available, or if substantial problems were encountered with the processing systems used to calculate the estimates. In previous years the planned publication date, as entered into the [National Statistics Publication Hub Release Calendar](#)⁹, has always been met. In the unlikely event of a change to the release schedule public attention will be drawn to any change in the pre-announced release date through the [National Statistics Publication Hub Release Calendar](#)⁹ and a reason for the change will be explained, as set out in the [Code of Practice for Official Statistics](#)¹⁰.

2.4 Accessibility and Clarity

Accessibility is the ease with which users are able to access the data, also reflecting the format(s) in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.

Population estimates by marital status by single year of age and sex are available online from 1991 onwards. Estimates for 1971-1990 are available on request by contacting us at the email address at the end of this section. Following the introduction of the adjustment for marriages abroad on 30 April 2009, a second set of estimates including marriages abroad are available online from mid-2002 onwards. Population estimates by marital status from mid-2007 onwards will be published both including and excluding the adjustment for marriages abroad.

Links from the [National Statistics Publication Hub Homepage](#)¹¹ make the release date and location of each new set of estimates clear. The estimates can be downloaded free of charge in Microsoft Excel format and are available from the [Mid-Year Marital Status Population Estimates](#)³ page on the ONS website. Supporting information is also available on this page. Summary and detailed descriptions of the methods used to calculate the estimates are available from the [Population Estimates Methodology](#)¹² page.

Other data not published on the web are available on request; for example unrounded estimates can be obtained by contacting us at the email address below. Metadata describing the limits of data from more detailed tables are provided with each individual request.

Most queries can be answered from the website datasets or supporting methods documents. Any additional enquires regarding the population estimates by marital status can be made via email pop.info@ons.gov.uk or telephone on 01329 444661.

2.5 Comparability

The degree to which data can be compared over time and domain.

The population estimates by marital status are consistent from mid-1991. Each annual set of population estimates by marital status is derived using the same methodological approach and the best data sources available. The population estimates by marital status from mid-1991 to mid-2000 were rebased to Census estimates following the 2001 Census which ensures a consistent series prior and post mid-2001.

ONS publish population estimates by marital status for England and Wales. The [General Register Office for Scotland \(GROS\)](#)¹³ publish equivalent estimates for Scotland, although these do not include marriages abroad. The [Northern Ireland Statistics and Research Agency \(NISRA\)](#)¹⁴ does not produce population estimates by marital status and therefore comparable estimates for the UK as a whole cannot be produced.

ONS is undertaking a substantial and long term programme of work to improve the methods and data sources used to derive the mid-year population estimates. This has resulted in changes to methods over recent years. Further information about improvements to the methods used for population estimates is available on the [IMPS updates](#)¹⁵ page of the ONS website. Where improvements to methodology have been implemented, both mid-year population estimates and population estimates by marital status have been revised back to mid-2002 to provide a consistent set of estimates since the 2001 Census. Population estimates by marital status including, rather than excluding, marriages abroad are considered more comparable with estimates up to and including mid-2001 because any required adjustments for marriages abroad are included by the relevant rebasing to Census estimates.

The comparability over the time series of the migration statistics used to calculate the population estimates by marital status is described in the [Summary Quality Report for Internal Migration](#)¹⁶ and the [Summary Quality Report for Long-Term International Migration Releases](#)¹⁷.

Following the release of the revised mid-2002 to mid-2008 population estimates to include improved migration statistics in May 2010, revised population estimates by marital status for mid-2002 to mid-2008 will be compiled and published. Following the 2011 Census, the mid-year population estimates will be revised back to mid-2002 to incorporate the updated Census information. Population estimates by marital status will also be revised accordingly. The finalised release dates for these revisions will be announced on the [National Statistics Publication Hub Release Calendar](#)⁹ at least one month in advance of publication.

2.6 Coherence

The degree to which data that are derived from different sources or methods, but which refer to the same phenomenon, are similar.

The population estimates by marital status are derived from, and constrained to, the mid-year population estimates and are therefore consistent. Mid-year population estimates are used both within and outside Government as the definitive set of population figures for the UK, constituent countries and subnational geographies to local authority level. They are used for calculating other official population statistics, such as population projections, small area population estimates, household population estimates and estimates of the very elderly, as well as population estimates by marital status. Population estimates by marital status are consistent with all these outputs at England and Wales level.

The Census in England and Wales gathers data on the total population including information on marital status, age, sex and location of residence. The annual population estimates by marital status provide updated estimates of the population of England and Wales by marital status for the period in between Censuses. The population estimates by marital status for mid-2001 are consistent with the mid-2001 population estimates, but differ from the 2001 Census. Further information on how the mid-2001 estimates differ from the 2001 Census can be found in [2001 Census – Local Authority Population Studies: Full Report](#)¹⁸.

As part of the programme of work identified by the Interdepartmental Task Force on Migration Statistics, ONS is investigating whether other data sources can be used in the estimation of migration and population. The Statistics and Registration Services Act 2007 is being used to establish legal gateways for information sharing between the UK Statistics Authority and other public authorities and agencies. Data sources that are being investigated include School Census data from the Department of Children, Schools and Families (DCSF) and Department of Work and Pensions (DWP) Migrant Scan data on National Insurance Number (NINo) allocations to overseas nationals. Any improvements made to the mid-year population estimates as a result of the use of such data sources will also be applied to the population estimates by marital status.

3 Summary of Methods Used to Compile the Output

The methods used to produce the population estimates by marital status are described in detail in the Population Estimates by Marital Status Methodology Paper which can be found on the [Population Estimates Methodology](#)¹² page of the National Statistics website.

Population estimates by marital status are calculated using the cohort component method. The cohort component method for population estimates by marital status can be summarised as:

- take the previous mid-year resident population by marital status
- adjust for late occurrences of registration data
- age-on by one year
- then estimate the marital status population change between 1 July and 30 June by:
 - adding births occurring during the year to the single population
 - removing deaths occurring during the year by marital status
 - removing new widowers from the married population and adding them to the widowed population
 - allowing for migration by marital status to and from England and Wales
 - adding marriages occurring during the year to the married population and removing them from the relevant previous marital status group
 - removing divorces from the married population and adding them to the divorced population
 - adjusting for marriages abroad

The data sources for calculating population estimates by marital status are registrations of marriages, divorces, births and deaths in England and Wales. Data from the [IPS](#)⁵ are used to calculate the adjustment for marriages abroad.

Babies born within the reference year are age zero and are added to the single population accordingly. Registrations of deaths by single year of age, sex and marital status are subtracted from the relevant population, while new widows/widowers are removed from the married category and added to the widowed category by age and sex accordingly. Net migration, net asylum seekers and net visitor switchers split by marital status are added or removed from the population.

Counts of marriage registrations by single year of age, sex and previous marital status are added to the estimates of the married population and subtracted accordingly from the single, widowed and divorced population by single year of age. Counts of divorces by single year of age and sex are subtracted from the married population and added to the divorced population.

[IPS](#)⁵ data provide an estimate of those travelling internationally to get married by age, sex and direction of travel. The outflow estimates are subtracted from the inflow estimates to produce the net estimated adjustment for marriages abroad during the reference year. The marital status estimates are then adjusted to account for this net estimate.

Once the necessary adjustments have been calculated and compiled, the figures for the population broken down by single year of age, sex and current marital status are rounded and the estimates are constrained to the national mid-year population estimates.

4 References

| | Title of Reference | Website Location |
|----|--|---|
| 1 | Statistical Quality | http://www.ons.gov.uk/about-statistics/methodology-and-quality/quality/index.html |
| 2 | Report: Marriages abroad 2002-2007, Population Trends 133 Part 2, pp65-70 | http://www.statistics.gov.uk/downloads/theme_population/PT133_part2.pdf |
| 3 | Mid-Year Marital Status Population Estimates | http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15107 |
| 4 | Summary Quality Report for Mid-Year Population Estimates | http://www.ons.gov.uk/about-statistics/methodology-and-quality/quality/qual-info-economic-social-and-bus-stats/quality-reports-for-social-statistics/mid-year-population-estimates--mye-.pdf |
| 5 | International Passenger Survey (IPS) | http://www.statistics.gov.uk/ssd/surveys/international_passenger_survey.asp |
| 6 | Methodology to adjust mid-year population estimates by marital status for marriages abroad | http://www.statistics.gov.uk/downloads/theme_population/Methodology-paper-marriages-abroad.pdf |
| 7 | The Interdepartmental Migration Task Force Report | http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14731 |
| 8 | Interim report on quality measures for population estimates | http://www.ons.gov.uk/about-statistics/methodology-and-quality/imps/updates-reports/current-updates-reports/interim-report-on-quality-measures-for-population-estimates.pdf |
| 9 | National Statistics Publication Hub Release Calendar | http://www.statistics.gov.uk/hub/release-calendar/index.html |
| 10 | Code of Practice for Official Statistics | http://www.statisticsauthority.gov.uk/assessment/code-of-practice/code-of-practice-for-official-statistics.pdf |
| 11 | National Statistics Publication Hub Homepage | http://www.statistics.gov.uk/hub/ |
| 12 | Population Estimates Methodology | http://www.statistics.gov.uk/about/data/methodology/specific/population/PEMethodology/ |
| 13 | General Register Office for Scotland (GROS) | http://www.gro-scotland.gov.uk/statistics/publications-and-data/population-estimates/ |
| 14 | Northern Ireland Statistics and Research Agency (NISRA) | http://www.nisra.gov.uk/ |
| 15 | IMPS updates | http://www.statistics.gov.uk/about/data/methodology/specific/population/future/imps/updates/default.asp |
| 16 | Summary Quality Report for Internal Migration | http://www.ons.gov.uk/about-statistics/methodology-and-quality/quality/qual-info-economic-social-and-bus-stats/quality-reports-for-social-statistics/summary-quality-report-for-internal-migration.pdf |
| 17 | Summary Quality Report for Long-Term International Migration Releases | http://www.ons.gov.uk/about-statistics/methodology-and-quality/quality/qual-info-economic-social-and-bus-stats/quality-reports-for-social-statistics/summary-quality-report-for-international-migration.pdf |
| 18 | 2001 Census - Local Authority Population Studies: Full Report | http://www.statistics.gov.uk/downloads/theme_population/LAStudy_FullReport.pdf |

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