European Demographic Data Sheet 2014

1. Population projections: Data, methods and assumptions

The European Demographic Data Sheet 2014 provides Population projections for the following 43 countries: Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France (metropolitan, excluding overseas territories), Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Macedonia FYR, Malta, Moldova, Montenegro, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom. Two scenarios are produced: with and without migration.

To project the population by age and sex from 2013 to 2050 the standard cohort-component model is used.

The population by age and sex as on 1 January 2013 is mostly derived from Eurostat database. Data for Albania, Armenia, Georgia and Russia are from national statistical offices. For Albania the population by sex and single year of age is derived from population data by sex and five years of age.

The total fertility rates (TFR) and the age schedule for fertility for the starting year rely on the information available for 2012 (2011 for Albania and the United Kingdom). The 2012 fertility data are based on the official vital statistics and population data, reported by Eurostat and national statistical offices. Most of the TFR data and age specific fertility rates were computed by the Wittgenstein Centre for Population and Global Human Capital (WIC); for Russia the fertility data originate from the national statistical office. For Albania, Armenia and Georgia fertility rates by single year of age are graduated from rates by five-year age groups published by the national statistical offices.

The information for the life expectancy at birth by sex for the base year is mostly retrieved from Eurostat and refers to the year 2012. For France, Georgia, Italy, Russia and the United Kingdom data are for 2011. For Armenia and Russia data are from national statistical offices. For Albania the projected life expectancy for 2013 is derived from Lutz, Butz, KC (2014).

Probabilities of death by age and sex originate mostly from Eurostat. The last available year at the time of extraction is 2012, except for France, Georgia, Italy and the United Kingdom (2011). For Armenia and Russia data are from national statistical offices. For Albania we interpolate the UN estimates for 2010-2015 (United Nations 2011).

The starting information on the total number of net migrants, resulting from the demographic equation, relies on Eurostat data and is mostly available up to year 2012. For Armenia, Georgia and Russia the values are from national statistical offices. For Bulgaria, Cyprus, Romania, Slovakia, Belarus, Macedonia, Serbia and Turkey, which showed noticeable differences in the amount of net migrants compared to the past, the average number of net migrants over the years 2009-12 was used as estimation for 2013. For Albania and Moldova the number of net migrants for 2013 is based on the estimation by the Wittgenstein Centre for Population and Global Human Capital (see Lutz, Butz, KC (2014)). For Ukraine the total number of net migrants for the year 2013 is set to zero because of the extremely uncertain situation.

The distribution of net migrants by sex and age is based on the results of the Wittgenstein Centre for Demography and Global Human Capital (WIC) projections (Lutz, Butz, KC, 2014).

In the 2014 edition of the Data Sheet, the projection assumptions for the future trends of fertility, mortality and migration are based on the results of the global expert-based projections prepared by the Wittgenstein Centre for Population and Global Human Capital (see Lutz, Butz, KC, 2014 for details). Namely, the period total fertility rate, the life expectancy at birth and the net migration scenarios rely on the Medium Demographics scenario with Global Education Trend scenario (Medium-GET Scenario) from Lutz, Butz, KC (2014). The fertility and net migration distributions by age are kept constant throughout the projection period.

2. Note on the difference in population projection results between the European Demographic Data Sheets 2012 and 2014

As in previous editions of the Data Sheet, the European Demographic Data Sheet 2014 includes results of population projections for 43 European countries. The aim of the Data Sheet is to give insight into the population dynamics using the most updated demographic information and produce population projections accordingly. Population projections have been therefore updated at every new edition of the Data Sheet.

The main difference in the 2014 edition of the Data Sheet (DS 2014) regards the projection assumptions: future trends of fertility, mortality and migration are based on the assumptions of the new Wittgenstein Centre for Demography and Global Human Capital projections (Lutz, Butz, KC, 2014).

The population for all the 43 countries together is projected to increase in the future to a total of 856.7 million people in 2050. EU-28 will increase from a current figure of 505.2 million to 536.3 million in 2050, showing an average annual growth rate of 0.16%. Among the EU countries[1], Belgium, Denmark, Ireland, Sweden and the UK will experience a change in population size of more than 20%. In absolute terms the greatest increase will be observed in the UK, with a gain of about 14.7 million people, and in France, with a gain of about 11.9 million. Other EU countries, such as Bulgaria, Poland and Romania, will face a population decline of about 1.8, 2.9 and 4.1 million people respectively.

The current projection results for the year 2050 are somewhat different from those presented in the 2012 Data Sheet (DS 2012). For the total of 43 countries, the DS 2014 projections show about 9 million people less in 2050 as compared with the DS 2012 ; the EU-28 is projected to have about 12 million people less (about 2% of the projected population for 2050 in DS 2012).

Figure 1 shows the EU-28 and the first (and last) ten countries ranked according to the difference in projected total population size for the year 2050 between DS 2014 and DS 2012. For the same countries the graph also depicts the relative difference in population size.

[1] Countries with population below 1 million are not considered.

In the EU the differences in the projected total population involve mostly Italy (-9.2 million), Spain (-5.3 million) and Romania (-1.9 million). Together with Lithuania and Latvia, these are the five EU countries which show also the major negative relative difference in the projected population for 2050, ranging from -13.6% to -9.4%. Among the non EU countries, Turkey shows the largest negative difference of -4.9 million people for the year 2050 (-5.0%), even if the negative relative difference is higher in Georgia, Moldova, Albania and Armenia, ranging between -21.0% and -10.0%.

Conversely, for some countries the DS 2014 projections suggest a larger projected total population for 2050 as compared to the DS 2012 projections. For example, France and Germany are expected to have in 2050 about 2 million people more (which means a relative difference in projection results of about +3%), Poland +0.8 million people (+2.3%), Russia about 3.6 million people more (+2.8%) and Ukraine +4.4 million people (+13.1%). A noticeable positive relative difference is observed also in countries like Cyprus (+15.6%) and Iceland (+16.6%), however with less impact in absolute terms.

The difference in projection results between the Data Sheet 2012 and 2014 is linked to different projection assumptions and the 2011 round of population censuses.

The assumptions used in DS 2014 projections rely on the assumptions used in the global population projections prepared by the WIC (Lutz, Butz, KC, 2014). No major differences compared to the DS 2012 assumptions were found for fertility (WIC assumptions were partly used already in DS 2012) and life expectancy. In contrast, significant differences were found for migration assumptions, which in DS 2012 were based on the Eurostat 2010 projections. The migration assumptions in the WIC projections are based on new global estimates of in- and out-migration rates for 2005-10 which are essentially assumed to remain constant (see Sander, Abel, & Riosmena (2014)). The difference is particularly noticeable for some countries, among others Italy, Romania and Spain, which show major differences in the projected population for 2050 (Figure 1). In Italy net migration is assumed to be positive throughout the projection horizon, but about half less than in DS 2012; in Romania out-migration is assumed to prevail in the future, while the DS 2012 projections assumed positive net migration; Spain is assumed to experience positive net migration, but with less immigration pressure than in DS 2012. These not negligible differences in future migration trends shape most of the differences in projection results of the new Data Sheet.

New results from the 2011 round of population censuses also determined, even if mostly marginally, the results of new population projections, or at least produced a break with the previous series. Namely the population on 1st January 2013, i.e. the starting population for DS 2014 projections, is in line with census results. Furthermore, population figures for the inter-censual years are also reconstructed accordingly. As an example, Latvia, Lithuania and Romania show for the 1st January 2011 a relative difference of -7.0%, -5.9% and -5.7% between the post-census reconstruction of the population and the one reported in the DS 2012. In particular, for Romania as well as for Italy this means a difference of about -1.2 million people in 2011. Conversely, in Spain the census results showed an underestimation of the reported total population, which suggested an underestimation of the population figures over the inter-censual period: the difference for 2011 is of about +0.5 million people.

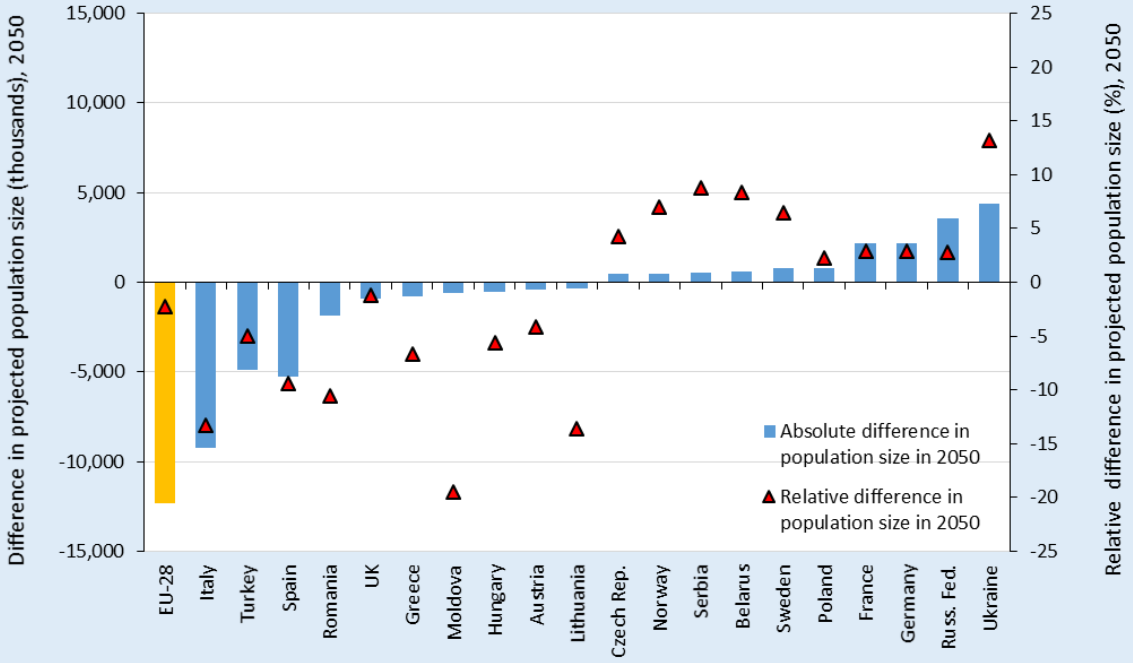

Figure 1 Differences in projected population in 2050 between Data Sheet 2014 and Data Sheet 2012 in selected countries of Europe

Note: Countries with population below 1 million, Caucasus countries and countries, for which no population projections are produced by WIC, were excluded.

References

European Demographic Data Sheet 2012. Wittgenstein Centre for Demography and Global Human Capital, Vienna.

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