

SF4: Fertility rates

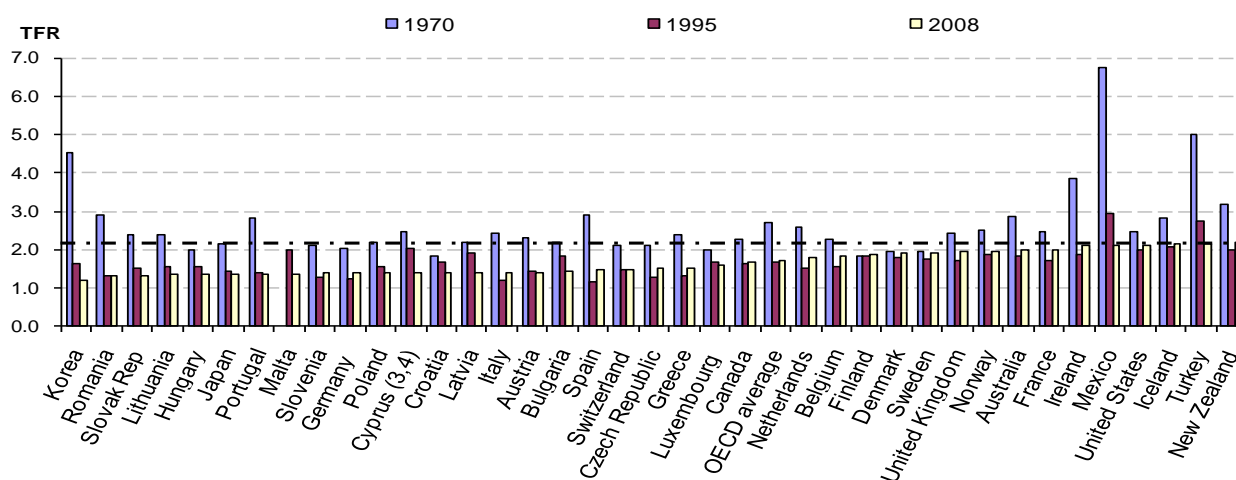
Definitions and methodology

The *Total Fertility Rate* (TFR) in a specific year is the number of children that would be born to each woman if she were to live to the end of her childbearing years and if the likelihood of her giving birth to children at each age was the currently prevailing age-specific fertility rates. It is generally computed by summing up the age-specific fertility rates defined over a five-year interval. Assuming there are no migration flows and that mortality rates remain unchanged, a total fertility rate of 2.1 children per woman generates broad stability of the population: it is also referred to as the “replacement fertility rate” as it ensures replacement of the woman and her partner with another 0.1 percentage points to counteract infant mortality (CO1). The *Completed Fertility Rate* (CFR) presents the number of children actually born per woman in a cohort of women by the end of their childbearing years. Usually, women who are 45 (in some countries 49) or older are considered to have completed their childbearing years.

Key Findings

Chart SF4.1 shows that in 2008 TFRs were well below the replacement rate in most countries, but at least exceed two children per woman in France, Iceland, Ireland, Mexico, New Zealand, Turkey and the United States.

Chart SF4.1: Total fertility rates in 1970, 1995¹ and 2008²



Countries are ranked in ascending order of fertility rates in 2008.

1 1990 for Croatia, Latvia, Malta.

2 2007 for Bulgaria, Croatia, Cyprus, Estonia, Latvia, Lithuania, Malta, Romania, Slovenia, United States.

3 Footnote by Turkey: The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognizes the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

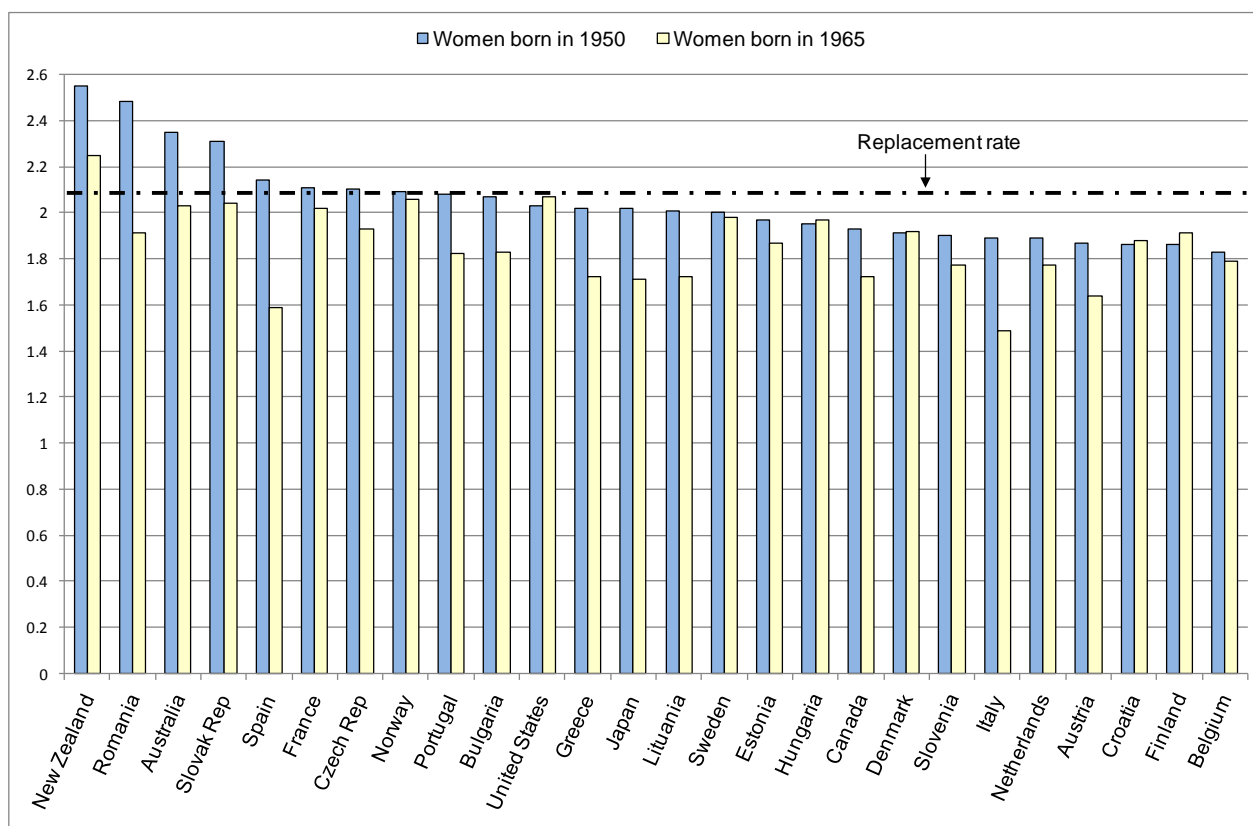
4 Footnote by all the European Union Member States of the OECD and the European Commission: The Republic of Cyprus is recognized by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Sources: National Statistical Offices and Eurostat Demographic Statistics for European non-OECD countries.

Other relevant indicators: Family size and composition (SF1); Age of mother at first childbirth (SF5); Share of births outside marriage (SF6); Childlessness (SF7); and, Marriage and divorce rates (SF8).

TFRs are the most common way of internationally comparing fertility rates across countries as these data are widely available. However, there are drawbacks to using TFRs in this way since they are sensitive to both changes in the number and in the timing of births (SF.5). Chart SF4.2 shows the trends in completed fertility rates which are available for women who are born in the mid-1960s at the latest. It shows that the final number of children per women has decreased through cohorts in almost all countries except in Denmark, Finland, Hungary, and the United States. The completed fertility rate is significantly below replacement level in almost all countries except in Australia, France, Norway, the Slovak Republic and the United States where it is close to 2 children per women. The completed fertility rate for the cohort of woman born in 1965 is above replacement level only in New Zealand.

Chart SF4.2: Completed fertility rates cohorts of women born in 1950 and 1965¹

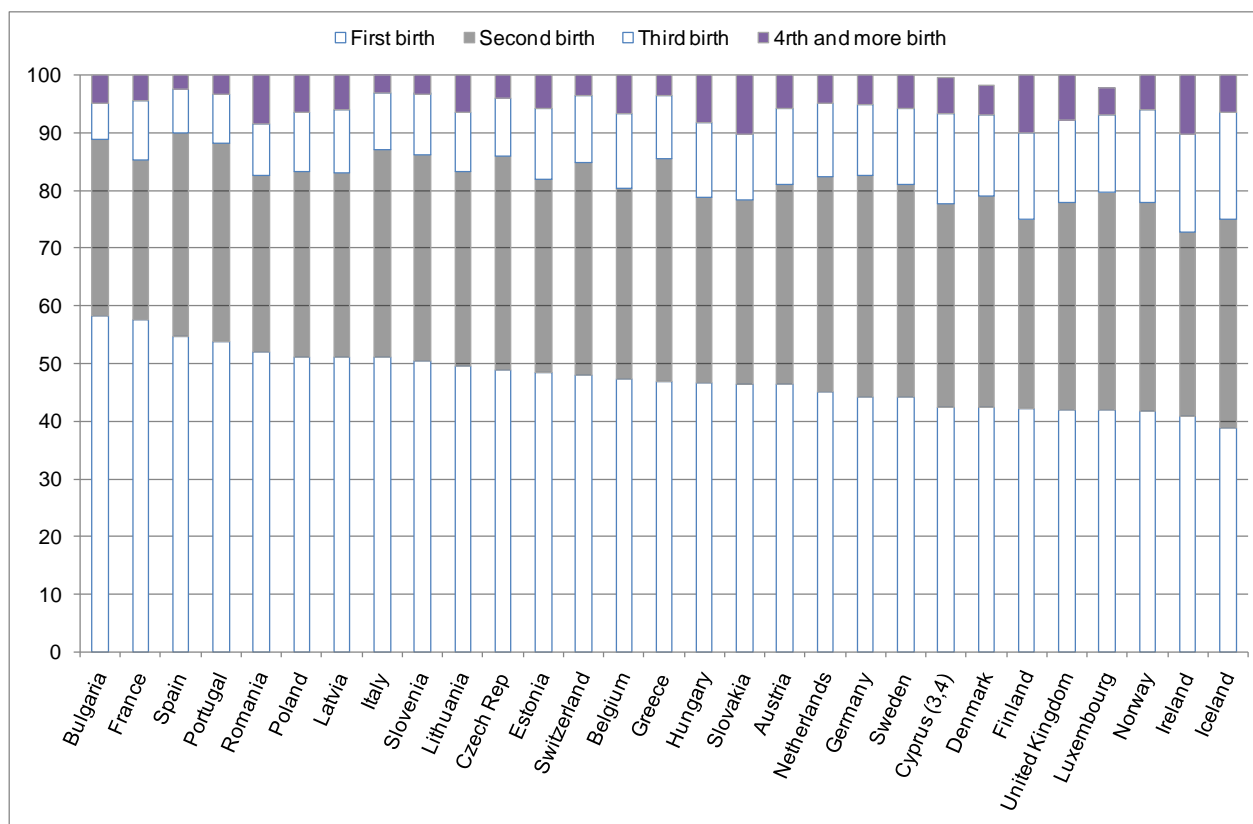


¹ Women born in 1962 in Japan and 1964 in France

Source: Eurostat Demographic Statistics for European countries and United Nations Statistical division for non European countries

Chart SF4.3 compares the distribution of live births by child order in the total of births in 2005. It shows that the birth of a first child accounts for the large majority (more or around 50%) of births in Slovenia, Italy, Poland, Portugal, France, and Spain, but makes up a smaller proportion (around 40%) in Ireland and Iceland; countries with the highest proportion of “third births” at around 16 such births per 1000 persons. The proportion of a fourth and subsequent birth is highest in Ireland, Finland, and the Slovak Republic.

Chart SF4.3: Proportion of live births¹ by rank of children in 2005²



Countries are ranked in descending order of the prevalence of first births in all births in 2005.

1 Birth order is set along the mother's perspective.

2 Data refer to 1995 for both the Czech Republic and Italy; and, 2007 for Ireland.

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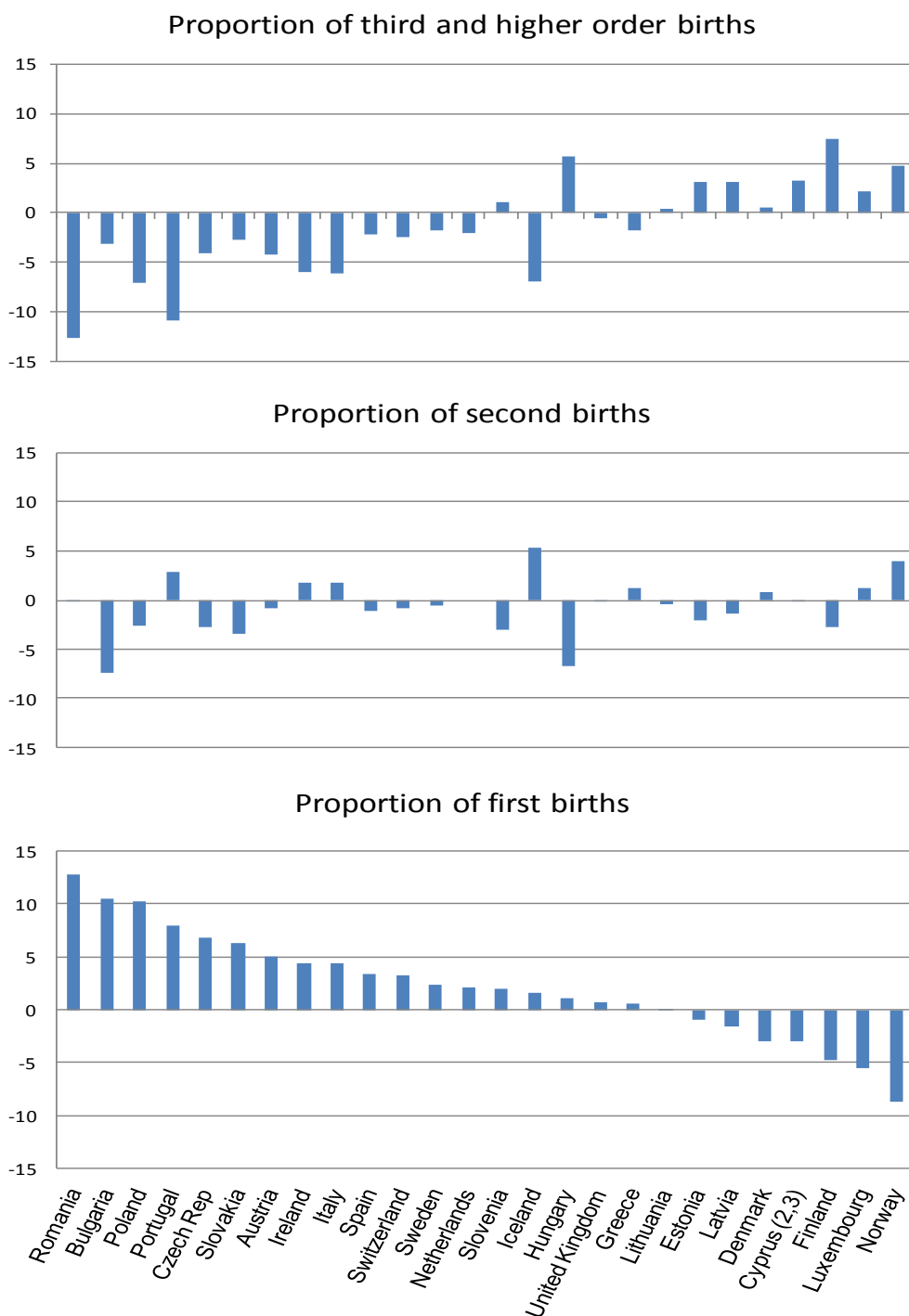
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Sources: Eurostat, Demographic Statistics

Changes in the distribution of births over the 1980s to 2005 period have also been important. Chart SF4.4 shows the changes in the proportion of births of respectively a first, second, third or higher order child in the total of births, and the largest changes concern first births and third and more births. In most countries (on the left-hand side of the chart), the proportion of births of a first child have increased, while the share of births of a third or higher order child has fallen. This points a significant decrease in the number of larger families. Changes in the proportion of second births have been smaller, except in Bulgaria where it has significantly decreased. The share of first births has decreased in a more limited number of countries (Denmark, Estonia, Finland, Luxembourg, and Norway) where the proportion of a third or subsequent birth has increased.

Chart SF4.4: Changes in the distribution of births by rank of children

Changes estimated over the period 1980 to 2005



Interpretation: For example, the proportion of first births in the total of living births has increased by about 10% in Poland from 1980 to 2005; by contrast, the proportion of third and higher order births has decreased by about 7%.

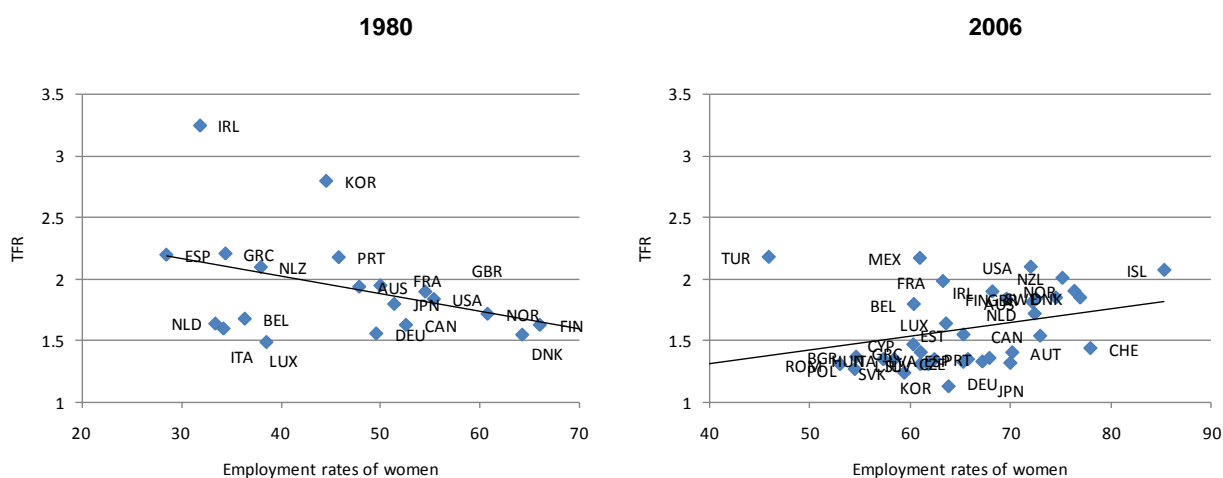
1 Changes are estimated from 1995 for Cyprus, Denmark, Spain, and Greece.

2 and 3, see notes 2 and 3 to Chart SF4.1.

Sources: Eurostat, Demographic Statistics

Chart SF4.5 shows that across OECD countries the relationship between female employment and fertility has changed over the last 25 years. Apart from the general increase in female employment, in 1980 there was a clear negative correlation between female employment and fertility rates. In 2006, OECD countries with higher rates of female employment also had relatively high fertility rates, although the correlation coefficient is weak (0.34). Clearly, the degree of incompatibility between paid work and having children has diminished, but there are substantial cross-country differences: combining childrearing and being in employment is most difficult in the Eastern European and Mediterranean countries, as well as in Japan and Korea and seems least incompatible in Nordic countries, New Zealand and the US.

Chart SF4.5: Cross-country relation between female employment rates and total fertility rates



Sources: Employment rates: ELFS, 2006 for European countries and OECD Employment statistics for non European countries; fertility rates: UN and Eurostat, Demographic Statistics.

Comparability and data issues

There are some limitations in using the TFR to compare trends in fertility since changes in this aggregate can relate to either a change in family size or/and a change in the timing of births. Completed fertility rates can be used to consider the final number of children per women but only when women have reached the end their reproductive life. Changes in the distribution of births by rank of children also illustrate the changes in fertility patterns, since a reduction of family size is associated with a decrease in the share of higher order births. The distribution of births is, however, also sensitive to timing effects. A closer look at the timing of births is needed to obtain a more comprehensive view of fertility behaviour and changes over time (SF.5).

Sources and further reading: D'Addio, A.C and M. Mira d'Ercole (2005), "Trends and Determinants of Fertility Rates in OECD Countries: the Role of Policies", OECD Social, Employment and Migration Working Paper, No. 27, Paris; *OECD Society at a Glance* (Edition 2006); EUROSTAT (2006), Demographic Statistics: Fertility, Eurostat Metadata in SDDS format, http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/demo_fer_sm1.htm; Nimwegen N. van, and C. Beets (2008), "The demographic situation in the European Union", in *Demographic Trends, Socio-Economic Impacts and Policy Implications in the European Union*, Monitoring report for the European Observatory on the Social Situation – 2007; Kohler, Hans-Peter, Francesco C. Billari and José Antonio Ortega (2002). "The Emergence of Lowest-Low Fertility in Europe during the 1990s." *Population and Development Review* 28(4), 641-680. Kögel T. (2004), "Did the association between fertility and female employment within OECD countries really change its sign?", *Journal of Population Economics*, 17:45-65.