# Low fertility: A review of the determinants

Working Paper No. 2

July 2019



## **Technical Division**

**Working Paper Series** Population & Development Branch

### **Elizabeth Wilkins**

Consultant, UNFPA Population and Development Branch

Complete draft updated and revised, July 2019

#### 1. Introduction

Classic demographic transition theory assumed that fertility would decline from high levels and stabilize at the replacement level of around 2.1 children per woman. Yet nearly half of the global population now lives in a country with a period total fertility rate (TFR) below 2.1 children per woman (United Nations, 2019)<sup>1</sup>. Meanwhile, in many countries in Eastern Asia, Southern Europe, and parts of Central, Eastern and South-eastern Europe, fertility is even lower, with period TFR at 1.0-1.4 and completed family size at 1.4-1.6 births per woman born in the mid-1970s. Traditional development and geographic boundaries have been blurred with all major world regions, except sub-Saharan Africa, now firmly set on a decline towards low fertility. By 2050, more than two-thirds of the global population is projected to live in a country with fertility below a period TFR of 2.1 children per woman<sup>2</sup> (United Nations, 2019).

Low fertility, particularly at very low levels, is seen by some governments as a source of concern (Hakkert, 2014; Poston et al., 2018). In particular, policymakers note concerns about the accelerated pace of population ageing and associated pressure on the labor market, healthcare and social security systems, which are largely supported by contributions from the working age population (Rindfuss & Choe, 2015). Another set of concerns relates to eventual population decline and its attendant threats to economic growth, military power and national pride (Rindfuss & Choe, 2015). In 2015, two-thirds of governments in more developed countries considered fertility to be too low and were pursuing policies to boost it (United Nations, 2015, cited in UNFPA, 2018: 95).

At the individual level, low fertility is a manifestation of couples' increased ability to prevent pregnancies and space births, yet it also reflects the challenges faced by women and men in starting a family or planning for another child. The International Conference on Population and Development Programme of Action, endorsed by 179 countries in 1994, stated that "all couples and individuals have the basic right to decide freely and responsibly the number and spacing of their children and to have the information, education and means to do so". Yet in many low fertility countries, individuals report that they are not having as many children as they aspire to have, indicating their inability to realize their full reproductive rights.

Against this background, this report aims to review the theoretical and empirical evidence of the determinants of low fertility. First, it presents an overview of the main trends and patterns of low fertility, followed by a discussion of the role of fertility postponement and the associated tempo effect. Subsequently, it explores three broad sets of distal social, cultural and economic determinants: 1) ideational change and the Second Demographic Transition, 2) economic constraints, including labor market uncertainty and the direct costs of raising children, and 3) constraints affecting women's ability to combine paid work and childbearing, namely gender

<sup>&</sup>lt;sup>1</sup> In 2019, 47% of the global population lived in a country with TFR<2.1 (United Nations, 2019).

<sup>&</sup>lt;sup>2</sup> United Nations medium variant projections.

(in)equity in the domestic sphere, workplace conditions, and the availability of childcare services.

These social, cultural and economic factors are selected as determinants that are well studied and represented in the literature, but they are not the only determinants. This review does not cover in depth, for instance, the expansion of female higher education (see e.g. Mills et al., 2011; Ní Bhrolcháin & Beaujouan, 2012), which while an important factor behind fertility postponement and decline in almost all post-transitional countries, is not a determinant specific to the countries with very low fertility. Secondly, this review does not cover in detail the rise of family instability and the role of divorce and re-partnering (see e.g. Balbo et al., 2013; van Bavel et al., 2012), nor various determinants with relatively limited coverage in the literature, namely psychological factors such as insecurity, sense of control, and fashions related to parenthood and childlessness; geographical influences such as population density, climatic factors and settlement type; and the ideology of "quality" parenting found in many rich countries. Finally, given the focus on social, cultural and economic determinants, this report does not delve deeply into the substantial and growing literature on the biomedical determinants of low fertility among females and males (see e.g. Rossi et al., 2016; University of Rochester Medical Center, 2019).

Geographically, the review covers those countries that experienced early fertility declines to replacement fertility or below between the 1950s and 1980s. As noted by Sobotka (2017), these include most European countries (with the exceptions of Albania and Kosovo), several East Asian countries and administrative regions (Japan, the Republic of Korea, Taiwan Province of China, and China, Hong Kong Special Administrative Region), Singapore, the United States, Canada and Cuba, as well as Australia, New Zealand and some smaller territories in Oceania and elsewhere. However, the main focus is on those countries with very low fertility in East Asia, Southern, Central and Eastern Europe. This is not the first study to synthesize research on the determinants of low fertility. Related papers include those by: Balbo *et al.* (2013), Billari (2008), Basten *et al.* (2014), Morgan and Taylor (2006), Sobotka (2017) and Thévenon (2015), which readers are encouraged to review for alternative structural frameworks and substantive concentrations.

#### Box 1: Measuring fertility

The most widely used measure of fertility at the population level is the total fertility rate (TFR). This indicator represents the average number of children that a woman in the population would have if she were to experience the age-specific fertility rates of the current calendar year across her lifetime. For a given year, it is computed as the sum of the age-specific fertility rates at each age, or for each 5-year age group, between 15-49 years, and is expressed as the number of children per woman.

The key advantage of the TFR is its timeliness: the indicator can be computed as soon as the number of births in a given year are released by national statistical agencies (UNFPA, 2018). However, the disadvantage of this "period" measure is that it measures fertility at a particular point in time and does not represent the experience of any real group of women across their lifetimes (Rindfuss & Choe, 2015). This makes it vulnerable to distortion by shocks such as economic recessions, which can have a substantial short-term effect on the number of births at all ages, as well as changes in the timing of births. If women give birth at earlier ages than in previous years, the so-called "tempo effect" will result in an elevated TFR even if women are not having more births over their lifetimes. Conversely, if women delay births, the TFR will be depressed even if they are having the same number of births as before, since some births will be "shifted into the future" (Sobotka, 2017: 26). This makes the TFR unstable and potentially misleading.

An alternative indicator is the completed cohort fertility rate, which measures the average number of children women would have across their lifetimes based on the experience of real female cohorts. It is calculated as the sum of the age-specific fertility rates across the lifetimes of women, and in this way provides a clearer picture of actual fertility. The cohort fertility rate is not subject to tempo distortions and tends to be more stable than period fertility measures. However, its disadvantage is that it can only be calculated after the cohort of women analyzed reaches the end of their reproductive years. Hence, cohort measures cannot inform us about the fertility behavior of younger women in recent years (UNFPA, 2018).

#### 1.1 Trends and patterns

Fertility decline began in many European countries in the 19<sup>th</sup> Century, closely followed by Australia and New Zealand, the United States and Canada, and subsequently Japan. By the 1970s, the fertility transition had taken place in Australia, Japan, and all highly developed countries in Europe and North America. In the 1970s, fertility in China declined dramatically following policies to promote later childbearing and smaller family sizes, including the notable introduction of the 1979 family planning policy, which generally restricted couples to a single child (UNFPA, 2018). During the 1980s and 1990s, countries such as Cuba, Thailand, China, and

the remaining East Asian "Little Dragons" (Republic of Korea, Taiwan Province of China and Hong Kong SAR) joined the growing list of countries with sub-replacement fertility. The transition was particularly rapid in these East Asian settings, which in the 1950s had had TFRs in the order of 5 to 7 children per woman (Frejka, Jones & Sardon, 2010).

In the early 1990s, low fertility countries in Southern, Eastern and Central Europe experienced further decreases in their TFR, sometimes to as low as 1.3 children per woman and below, where they remained for decades. This marked the emergence of so-called "lowest-low fertility" (Kohler, Billari & Ortega, 2002)<sup>3</sup>; by 2002, more than half of the European population lived in countries with a lowest-low period TFR (Goldstein et al, 2009). Soon thereafter, similar "ultra-low fertility"<sup>4</sup> emerged in Japan, the Republic of Korea, Singapore, Taiwan Province of China and Hong Kong SAR (Jones, Straughan & Chan, 2009). By the mid to late 2000s, these East Asian countries had the lowest period fertility globally (Frejka, 2010), recording TFRs in the range of 1.04 to 1.34 children per woman between 2005 and 2010 (United Nations, 2017).

Beginning around 2000, declines in period fertility stalled, and a concerted increase took place across many low-fertility settings, with the notable exceptions of East Asia and some European countries such as Germany, Austria and Switzerland (Goldstein et al, 2009; Hoorens et al., 2011). This upturn was mainly a result of the weakening pace of fertility postponement and the related tempo effect (Bongaarts & Sobotka, 2012) (**Box 1**). In many countries, the rise in the period TFR was modest, in the order of 0.2 births per woman or less in absolute terms. However, several countries experienced greater TFR increases of 0.3 to 0.6, or around 20-40% in relative terms (Goldstein et al, 2009). This fertility recuperation lasted until around 2008 and the start of the global economic recession. Following this, fertility stabilized in several countries (e.g. Germany, Austria and Switzerland), increased in a few Eastern European countries, possibly connected with the recently implemented pronatalist policies, and reversed in several others (e.g. Bulgaria, Cyprus, Greece, Iceland and Spain) (Sobotka, 2013; Thévenon, 2015) (**Figure 1**).

<sup>&</sup>lt;sup>3</sup> The term "lowest-low fertility" was coined by Kohler and colleagues (2002) to distinguish those countries with the lowest period fertility rates from those with below-replacement fertility. As noted by the authors, the cut-off of TFR = 1.3 is somewhat arbitrary; it is not intended to refer to the lowest attainable fertility level.

<sup>&</sup>lt;sup>4</sup> The term "ultra-low fertility" also refers to fertility below TFR=1.3. It was first introduced by Day (1988), though has been used more recently by Asian demographers (e.g. Jones et al., 2008) to differentiate Asian fertility declines from the European country experiences, and not to exclude the possibility of a further decline to even lower levels (Yoo & Sobotka, 2018).



#### Figure 1a. Total fertility rate in low fertility world regions, 1950-55 to 2015-20

Source: United Nations (2019).



Figure 1b. Total fertility rate in selected countries, 1960-2017

Source: Human Fertility Database (2019); Eurostat (2018); and national statistical offices.

Despite the broad global convergence towards replacement fertility, there exists marked variation among low fertility countries today, with some scholars suggesting a long-term "great divergence" in fertility among more developed countries (Billari, 2018: 15; McDonald, 2006; Rindfuss et al., 2016). **Figure 2** illustrates the contrast between regions and countries with *moderately low* fertility in the region of 1.7 to 2.2 children per woman and *very low* fertility of 1.6 or fewer children per woman (McDonald, 2006; Rindfuss et al., 2016; Billari, 2018)<sup>5</sup>.



Figure 2. Total fertility rate in 2010-15 and completed cohort fertility rate among women born in 1974

Sources: United Nations (2019); Human Fertility Database (2018); Yoo & Sobotka (2018); Wittgenstein Centre (2016).

**Notes:** Western Europe (east) includes Austria, Germany and Switzerland; Western Europe (west) includes Belgium, France, Luxembourg and the Netherlands; Eastern Asia ex. China excludes China; Hong Kong SAR; and China, Macau SAR.

## 预览已结束, 完整报告链接和二维码如下:



https://www.yunbaogao.cn/report/index/report?reportId=5 20077