

# **Policy responses to low fertility: How effective are they?**

**Working Paper No. 1**

May 2019



**Technical Division**

**Working Paper Series**

**Population & Development Branch**

## **Tomáš Sobotka**

Vienna Institute of Demography (Austrian Academy of Sciences) / Wittgenstein  
Centre for Population and Global Human Capital, Vienna, Austria

## **Anna Matysiak**

Vienna Institute of Demography (Austrian Academy of Sciences) / Wittgenstein  
Centre for Population and Global Human Capital, Vienna, Austria

Faculty of Economic Sciences, University of Warsaw, Poland (since October  
2019)

## **Zuzanna Brzozowska**

Vienna University of Economics and Business (WU) / Wittgenstein Centre for  
Population and Global Human Capital, Vienna, Austria

Faculty of Social Studies, Masaryk University, Brno, Czechia

*Complete draft updated and revised, 27 May 2019. Final corrections made on 7 February  
2020*

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## **Executive summary, main findings**

### ***Low fertility and policy responses***

In the last three decades **sub-replacement fertility has spread around the world**. One-half of the global population today lives in countries where the period Total Fertility Rate is below 2.1 births per woman. East Asia, Southern Europe and parts of Central, Eastern and South-eastern Europe reached “ultra-low” fertility rates, with the period Total Fertility at 1.0-1.4 and family size at 1.4-1.6 births per woman born in the mid-1970s.

Such low period fertility rates are not explained by very low fertility preferences. Women, men and couples in countries with very low fertility typically desire to have two children and their average intended family size is around or above two births. Very low fertility rates signal that there is a wide **gap between fertility aspirations and actual family size**. This gap tends to be larger for highly educated women, who find it more difficult to combine their career with their family life and aspirations.

Consequently, **fertility increase is becoming a frequently declared family policy aim**: between 1986 and 2015 the number of governments intending to raise their country’s birth rates jumped from 19 to 55. Pronatalist motivation is just one among many goals of family policies, alongside compensating parents for the economic costs of children, fostering parents’ employment, supporting early childhood development, and reducing gender inequalities.

Among the main **drivers of low fertility** is the incompatibility between professional career and family life. In times of women’s massive post-secondary education and labor force participation on the one hand and rising individualistic aspirations on the other hand, the inability to combine paid work with childrearing often results in childlessness or having one child only. This is closely connected with persistent gender inequalities in housework division: for decades, societies with strong traditional gender role norms have been continuously witnessing very low fertility. More recent factors contributing to fertility decline include the trend towards intensive parenting as well as labor market uncertainty and instability coupled with soaring housing prices.

### ***The effects of family policies on fertility***

Comparing and **evaluating the policy responses to low fertility present numerous challenges** because of the problematic nature of period fertility measurement and of individual policies being embedded in a wider institutional and cultural context. Besides the overall level of policy support, many criteria influence the usefulness and effectiveness of family policies. These include policy coherence (how well are different policy instruments mutually compatible and geared towards the existing labor market and education systems), policy stability and predictability, as well as the degree of flexibility policies have in responding to the needs and aspirations of different families.

Highly developed countries spend between 1% and 4% of their Gross Domestic Product on supporting families. The level of **public spending on families shows relatively close correlation with period fertility rates as well as with cohort family size.**

**Providing widely available, accessible, and high-quality childcare** which starts immediately after parental leave finishes and whose opening hours are aligned with parents' working hours **is indispensable to sustaining higher fertility rates.** Nordic countries, Belgium and France are among the countries offering such a comprehensive childcare provision and allocating a high share of their family-related spending on public childcare.

The **effects of other family policies are less unequivocal.** **Parental leaves** are needed to bridge the gap between the birth of a child and its entry into formal childcare. They are most likely to have a positive effect on fertility when they are well paid. If they aim to nurture more gender equal division of childcare, they should have a certain proportion allocated to each parent on a 'use it or lose it' basis (non-transferrable between parents). **One-time financial incentives** can have a modest positive effect on fertility, which is usually short-lived. **Labor markets with flexible working hours** seem to be more family friendly than those with rigid "nine-to-five" work arrangements. Finally, **subsidized and widely accessible provision of assisted reproduction** tends to have a small positive effect of fertility rates.

**Large-scale expansions of family policies often have considerable short-term effects on fertility,** leading to temporary baby booms and giving time-limited boost to period Total Fertility Rate. They frequently affect trends in fertility timing, supporting earlier timing of parenthood and shorter birth intervals. Their long-term impact on fertility is often limited. However, examples from Estonia, Japan, Germany, Russian Federation and other countries suggest that they contribute to halting or even reversing cohort fertility decline, paving the way to a long-term stabilization in family size.

Policies are most effective in supporting women's and men's fertility choices if they respond to various needs of individuals in diverse life situations. They should foster reconciliation between paid work and childrearing, but they also need to provide financial support to families with limited income. Such comprehensive policy packages have been implemented and consistently developed in the Nordic countries, France or Belgium, with other countries including Germany and Republic of Korea striving to develop their package.

### ***Future policy challenges***

**Future family policies need to reflect changing families and emerging economic and societal challenges.** They need to reckon with high family instability and reflect the needs of increasingly diverse families, including single parents, unmarried couples, same-sex families, and "blended" families. They need to reflect rising economic inequalities, new unstable forms of employment, changing gender roles, increasing economic roles of mothers, and unaffordable housing costs for many families. They also need to cater to diverse preferences people have regarding the timing and the number of children and their perceived preconditions for parenthood. In short, family policies should help creating family-friendly and child-friendly societies focused on health, education and well-being of children and families at large.

## 1. Introduction

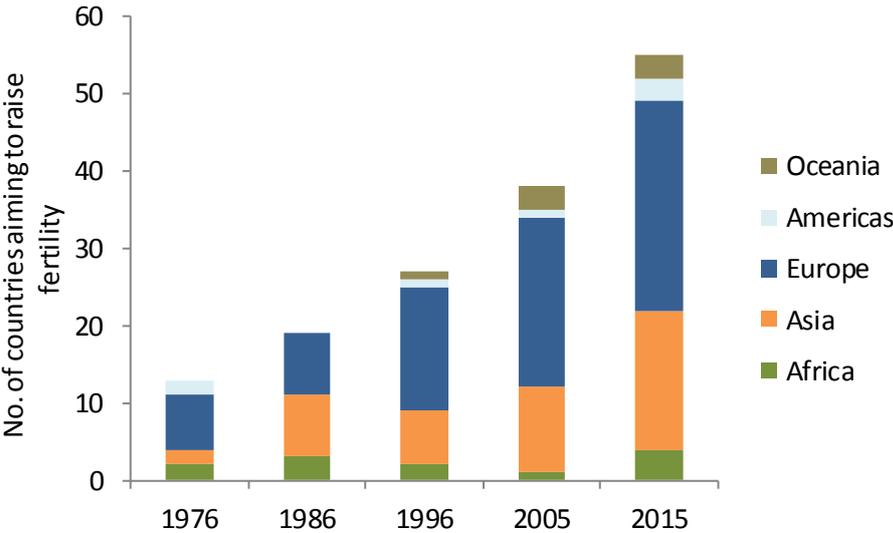
Fertility decline to a small family size has spread around the world during the last three decades (UNFPA 2018). One half of the global population now lives in countries where period Total Fertility Rate (TFR) fell below the replacement level threshold of around 2.1 births per woman—implying that in the absence of future fertility increases, mortality improvements or immigration, these populations would eventually start shrinking (Wilson 2004, United Nations 2017). Until the 1980s low fertility rates were found only in the highly developed countries. More recently, low fertility has become a global phenomenon, with a rising number of countries in Asia, Latin America and the Caribbean reporting sub-replacement fertility. However, the picture of low fertility is far from uniform. Typically, fertility decline does not stop when reaching replacement level and a number of countries in Southern, South-Eastern and Eastern Europe and East Asia saw their fertility rates falling to very low levels with a TFR at or below 1.5 births per woman.

This emerging phenomenon of “very low” (with a TFR below 1.5), “lowest-low”, or “ultra-low” (with a TFR below 1.3) fertility is an unexpected path of the global fertility transition, which makes many policymakers and public at large worried about its potential consequences (Stark and Kohler 2002; Westley et al. 2010; Hakkert 2014; Poston et al. 2018). These concerns include the long-term sustainability of population trends (including actual or expected population declines, either of the whole national population or of specific regions and population groups) and accelerated pace of population aging which will put increased pressure on public finances, pension systems, social security and care provision. They also relate to the prospects of stalling economic growth, declining labor force, and the need to implement rapid reforms of the social security system, healthcare or labor market. In some countries, especially in South-Eastern and Eastern Europe, low fertility is accompanied by long-term outmigration to richer countries in Europe, which further accelerates population and labor force shrinking. Across Europe 18 countries experienced population losses between 1990 and 2017, with several of them (Bosnia and Herzegovina, Bulgaria, Moldova, Ukraine) losing 18% or more of their population size since 1990 (European Demographic Data Sheet; VID 2018). In addition, populations of 51 countries and areas globally are projected to experience population decline between 2017 and 2050, with the largest losses projected in South-Eastern and Eastern Europe. China, the most populous country today, is expected to start losing population since 2030 (United Nations 2017).

Faced with these prospects, many governments started implementing policies aiming to support families. These family policies have become indispensable part of modern welfare state as they support health and wellbeing of families and successful development of children, and they reduce income inequalities and poverty among families. For instance, working mothers and fathers are now entitled to paid leaves after the birth of their child in all high-income countries except the United States. Many governments facing low fertility are increasingly turning to family policies in order to stimulate birth rates. The history of pronatalist policies is as long as the experience of low fertility: for instance, France implemented a *Family Quotient System* of extra taxes for the childless and tax deductions for taxpayers with children to stimulate fertility already a century ago, in 1919 (Chen 2004). But it is only during the last 30 years that pronatalism has spread globally. The number of

countries whose governments report their aim is to increase fertility jumped from 19 to 52 between 1986 and 2011. In 2015, governments of 55 countries and territories surveyed by the *World Population Policies Database* compiled by the United Nations (2015) reported they aim to raise fertility; this represents over a quarter (28%) of all countries in the database. Of this, 27 countries were from Europe (representing 60% European countries) and 18 from Asia (representing 38% Asian countries; see Figure 1).

**Figure 1** Number of countries whose governments declare that their goal is to raise fertility



Source: *World Population Policies Database* (United Nations 2015)

In a growing number of countries including Hungary, Japan, Republic of Korea and Russian Federation, fertility-stimulating efforts take a prominent position on government agenda and receive extensive media coverage (Box 1). It is therefore of key importance to study the premises, aims and targets of these pronatalist interventions and to analyze their impact. An expanding literature analyzes fertility effects of specific policy interventions, helping to generate a broader knowledge about the outcomes and effectiveness of family policies. At the same time, our knowledge remains patchy at best. The task of measuring fertility effects of family policies is tricky and fraught with misconceptions, ethical issues, poorly defined aims, measurement difficulties, and data limitations (Neyer and Andersson 2008; OECD 2011; Thévenon and Gauthier 2011; Luci-Greulich and Thévenon 2013; Hakkert 2014; Lutz 2014; Matysiak and Węziak-Białowolska 2016; see also Section 2). Many policies are poorly justified or financially unsustainable in the long term, driven more by ideological considerations than by scientific evidence. Frequent and potentially confusing changes make it difficult to evaluate policy effects.

Many policies ignore current family diversity or target only some population groups, such as married couples or low-income families. Fertility rates are typically assessed on the basis of period Total Fertility Rates, which are unstable and can be strongly affected by the shifts in the timing of births. Period TFR may, in particular, provide a deceptive picture of fertility trends in countries where policies undergo frequent changes and where individuals may decide to have children sooner (rather than to have more of them) in order to benefit from a

newly introduced policy which may soon be withdrawn. We discuss these issues in the next section, which outlines the challenges involved in assessing the effects of family policies.

This report aims to summarize the available evidence on the effects of family policies on fertility. We combine literature review with empirical illustrations for selected countries and policy interventions. In addition, we also discuss the complexity of the policy-fertility links. The key questions addressed in our review are the following:

- What are the aims national family policies are designed to pursue?
- What are the targets, range and scope of policies aiming to halt or reverse fertility declines?
- What are the main difficulties and challenges in analyzing policy effects on fertility?
- Is there a good alignment between the determinants of low fertility identified in the literature and the policies addressing low fertility?
- What is the evidence on the effects of policies on fertility? Are some countries more successful than others in addressing low fertility?
- What are the main reasons for the mixed and ambiguous effects of policies on fertility? What can governments do better?

Given the broad scope of our study, our review has to be selective and cannot provide comprehensive evidence on all these questions. We direct our attention to national policies in low-fertility countries with high-quality data on fertility rates. Most of them have a relatively long history of low fertility as well as welfare policies and government policy interventions. This narrows our focus to Europe, Australia and New Zealand, East Asia, the United States and Canada, and Israel. We provide more detailed examples of family policies that have been vastly expanded and policies that constitute specific, well-defined interventions that can be seen as case studies. Our work builds upon a large body of evidence, including the review of population policies in low-fertility countries by Hakkert (2014), comparative OECD publications (especially OECD 2006a, 2011, 2017a and 2019) and a wide array of studies on family policies and their effects published in the last two decades.

## **2. Low and very low fertility: regional contrasts and main driving forces**

Before we discuss family policies, their diversity and measurement challenges we first provide a brief overview of contemporary low fertility, focusing especially on very low fertility rates recorded in many countries and regions, including Southern Europe and East Asia. We highlight different approaches to measuring fertility and show huge contrasts between period indicators and those pertaining to the family size achieved by women born in different years (birth cohorts). We also discuss the gap between reproductive preferences and actual fertility and the strong two-child family norm prevalent in most of the highly developed countries. Finally, we discuss the key forces behind low fertility, focusing especially on the factors contributing to fertility declines to very low levels. A more detailed review of the determinants of low fertility is provided in a companion UNFPA report by Wilkins (2019).

## *2.1 Low fertility and reproductive preferences*

Changes in fertility rates and their variation across highly developed countries have been extensively covered in the literature (Basten et al. 2014; Billari 2018; Bongaarts 2002; Frejka et al. 2008; Jalovaara et al. 2018; Kohler et al. 2002; Rindfuss and Choe 2015 and 2016; Sobotka 2008 and 2017; UNFPA 2018; Wilkins 2019). Here we give a brief outline of the key features of contemporary low fertility.

In a nutshell, period fertility is low and unstable, showing frequent ups and downs (Frejka and Sobotka 2008). Moreover, parenthood has been continuously shifting to ever later reproductive ages (Sobotka and Beaujouan 2018; Beaujouan and Sobotka 2019) and families have become more diverse and less stable, with increasingly complex partnership biographies and living arrangements.

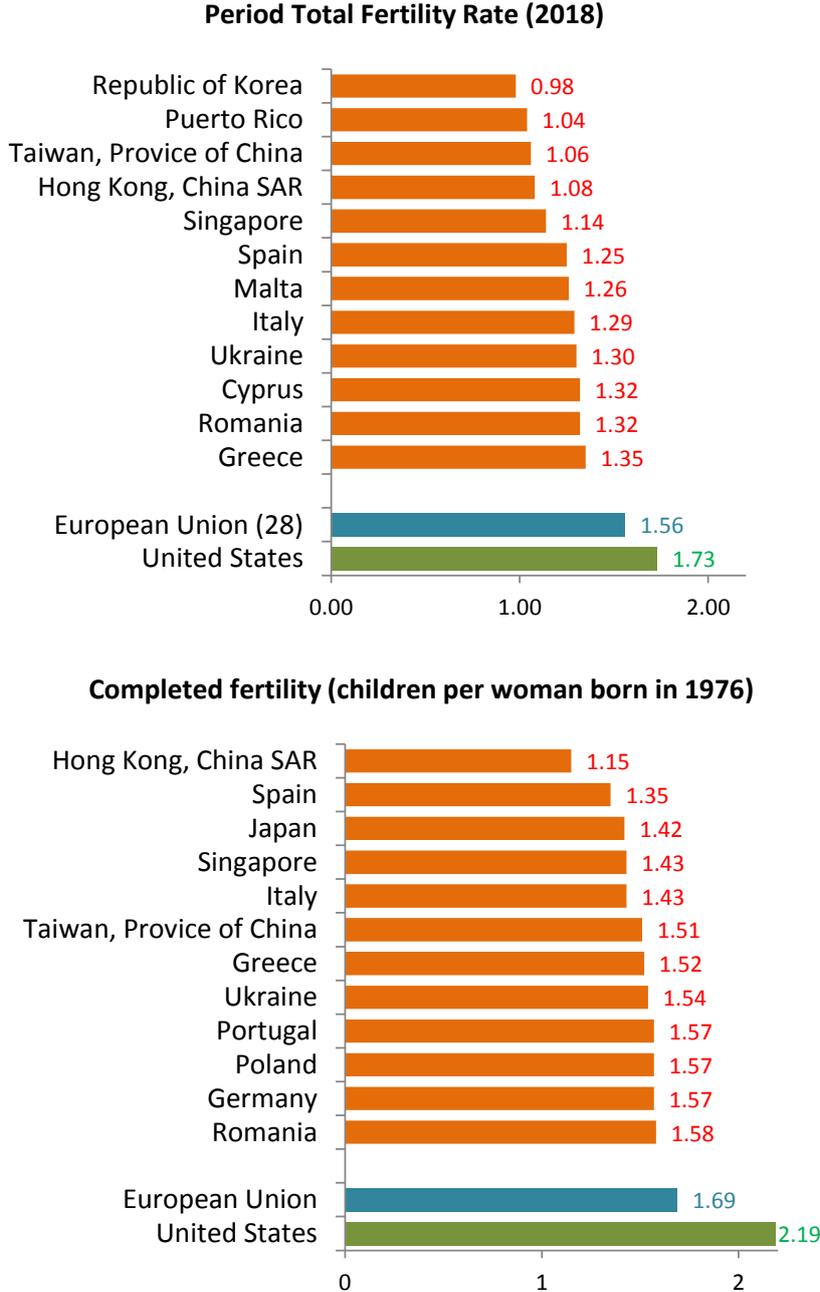
At present, all highly developed countries except Israel have low period fertility rates<sup>1</sup>. The key difference is between countries where fertility rates fell to very low levels and those where fertility remained at moderately low levels (Billari 2018). For the women born in the 1970s, who have now almost completed their childbearing, the boundary between moderately low and very low levels can be drawn with the completed fertility rates at around 1.6. Women in Western and Northern Europe, Australia, New Zealand, and the United States have retained a higher completed fertility at around 2 births per woman (Myrskylä et al. 2013; UNFPA 2018, VID 2018). Some countries are just around or slightly above the 1.6 threshold (e.g., China, Republic of Korea, Austria and Hungary). In contrast, Southern European countries (Greece, Italy, Malta, Portugal, and Spain), parts of Central and Eastern Europe (Romania, Belarus, Russian Federation, Ukraine), Germany, Japan and Singapore are below the threshold (UNFPA 2018). In most of these countries, fertility rates are even lower when measured with the period TFR. At the extreme low level, Republic of Korea reached the lowest TFR level globally, 0.98, in 2018. Singapore, China Hong Kong Special Administrative Region (subsequently referred to as Hong Kong SAR) and Taiwan Province of China had a TFR of 1.06-1.14 in 2018 and Southern European countries had a TFR at 1.25-1.4 (Figure 2).

Whether fertility rates are close to two births per woman or one birth per woman matters greatly, especially in countries without significant immigration and in countries losing population due to outmigration. In the absence of migration and mortality improvements, a long-term prevalence of a TFR at 1.8 would result in an annual population decline by 0.4%, inducing a faster population ageing. Such a moderate decline can arguably be tackled via gradual adjustments in the labor market, pension systems, health care and social security, or it can be offset by accepting moderate levels of immigration. In contrast, a long-term TFR of 1.0 would result in a population shrinking by 2.4% annually and drastic population ageing. Such a pace of population decline is challenging even for the governments accepting large numbers of immigrants or willing to implement radical reforms to their social security and pension systems.

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<sup>1</sup> Israel is an important exception which maintains high fertility rates (period TFR as well as completed cohort fertility around 3 births per woman) due to a combination of high fertility among some ethnic and religious groups (Okun 2013, Anson and Ajayi 2018) and high family-supporting attitudes rooted in religious and cultural traditions and the history of the country (Della Pergola 2009).

**Figure 2 Countries and territories with lowest period total fertility rate (TFR) in 2018 and with lowest completed cohort fertility rate among women born in 1976**



**Notes:** Data exclude countries and territories with population below 100 thousand. TFR data for Cyprus, Malta and Greece refer to 2017. The table does not include data for Bosnia and Herzegovina and the Republic of Moldova due to their lower reliability. Data for Ukraine cover the territory under government control.

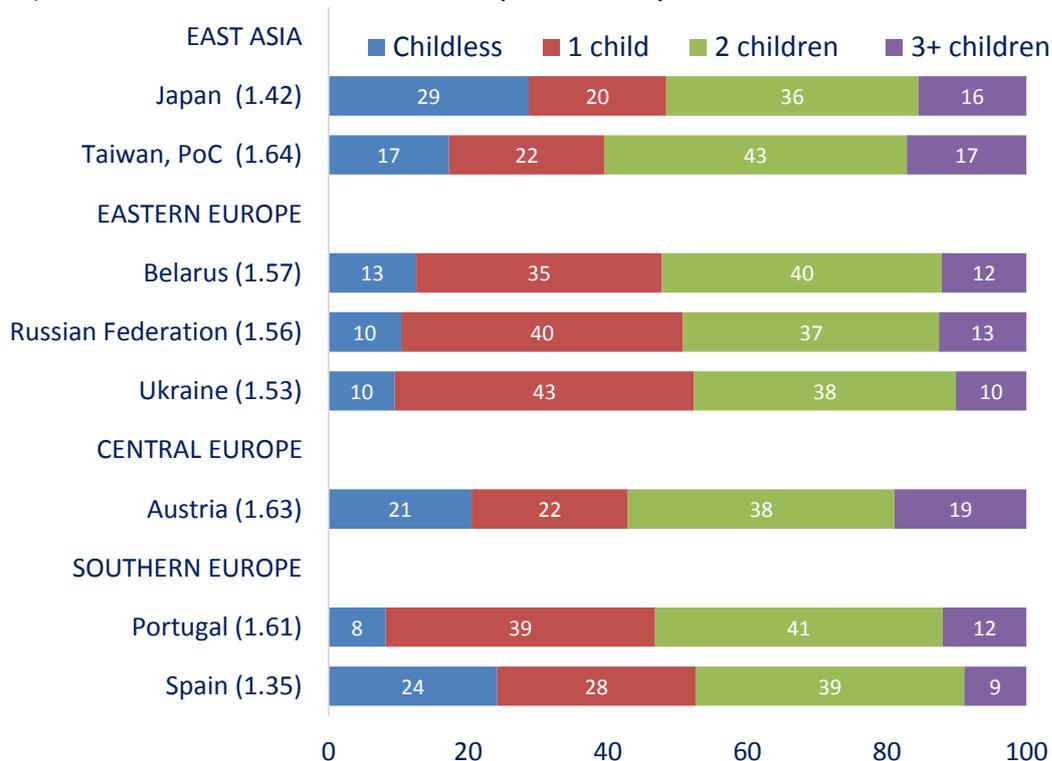
**Sources:** Eurostat (2018), Human Fertility Database (2019), European Demographic Data Sheet (VID 2018) and national statistical offices.

Low fertility rates imply that relatively few women have larger family size with three or more children. Larger families have become least common in East Asian countries, Eastern Europe, and in Southern Europe. For instance, in Belarus, Japan, Republic of Korea, Portugal, Russian Federation and Ukraine only 12-15% of women born in the early 1970s had at least three children and only 2-4% had four or more children (Human Fertility Database 2019; CFE

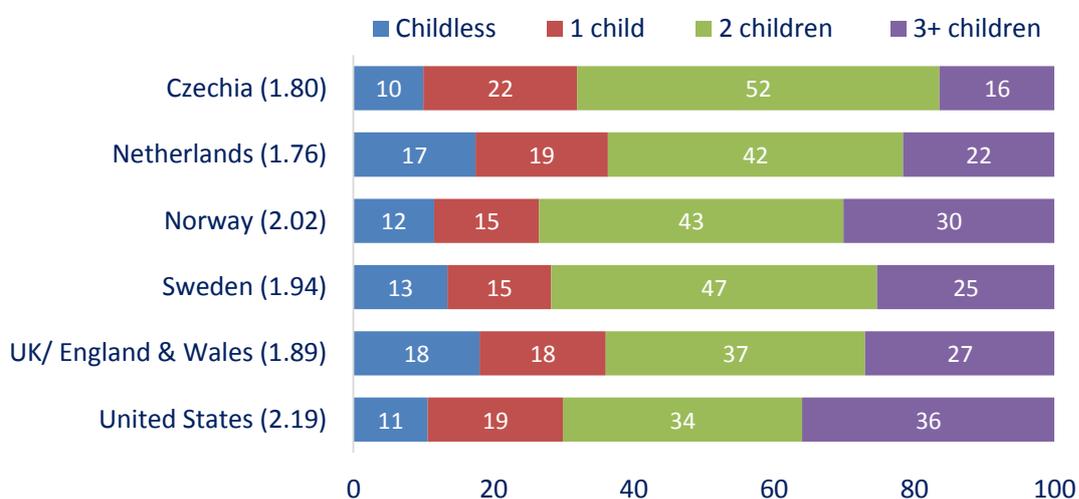
database 2019; Figure 3). In Spain, fewer than one in ten women born in the early 1970s had three or more children. By contrast, many countries with moderately low fertility, including Norway, Sweden, United Kingdom and the United States, have much higher proportion of women (25%-36%) with three or more children (Figure 3). Another difference between countries with very low and moderately low fertility pertains to the share of women with one child, which is often much higher in the former group. One-child families are most common in Southern and Eastern European countries, with four out of ten women in Portugal, Russian Federation and Ukraine having one child (Figure 3). These numbers are also relevant when designing and evaluating policies: policies aiming to encourage women and couples to have larger families may be ineffective in countries where many women face difficulties in planning their first or second child and the “pool” of women with two or more children targeted by these policies is relatively small.

**Figure 3 Women by number of children ever born (%) and completed fertility rate (in brackets), selected low-fertility countries and territories; women born in 1971-75**

a) countries and territories with very low fertility



b) countries with moderately low fertility



**Notes:** The data show number of children women reached by age 42 (45 in the United Kingdom). This is close to the completed fertility at the end of their reproductive lives as only a very small fraction of childbearing (about 1% of less) takes place after age 42. Numbers in brackets show the completed cohort fertility (family size) at age 42. Data pertain to women born in the following years: 1971 for Ukraine, 1972 for Taiwan, Province of China (denoted as Taiwan, PoC), Russian Federation, Norway, United Kingdom, 1973 for Portugal, 1974 for Japan, Belarus, Spain, Czechia, the Netherlands, Sweden and the United States and 1975 for Austria.

**Sources:** Human Fertility Database (2019), ONS (2018) for the United Kingdom (data pertain to England and Wales only).

Not only fertility levels, but also the timing of parenthood and sequencing of life course events crucial for parenthood have changed in the past four decades. The expansion of education has shifted parenthood to a later stage in life. Long education is followed by increasingly less stable and more complex career trajectories. Delaying parenthood to late 20s or well into 30s enables the prospective parents to get a safer foothold on the labor market, accumulate sufficient resources, acquire housing, achieve more stable partnerships, enjoy childfree lifestyle and get ready for parenthood (Schmidt et al. 2011; Sobotka and Beaujouan 2018). Consequently, women in most of the low-fertility countries now become mothers at age 27-30 on average, by about five years later than in the 1970s. Women in Italy, Spain, Switzerland, Japan and Republic of Korea have their first birth past age 30 on average (VID 2018). Furthermore, many women, in particular those with a degree, delay parenthood into their late 30s or early 40s (Sobotka and Beaujouan and Sobotka 2019). This “perpetual postponement” (Berrington 2004) makes it more likely for couples to experience infertility and to seek assisted reproduction.

Very low fertility does not reflect very low family size preferences. Women across Europe and other highly developed regions persistently express a strong preference for having two children; the mean ideal and intended family size stays at or above two children per woman (Morgan and Rackin 2010; Sobotka and Beaujouan 2014; Sobotka et al. 2015; Beaujouan and Berghammer 2019). Countries with very low fertility often display a wide gap between fertility aspirations at younger ages and achieved fertility later in life, signaling that many women, men and couples face obstacles in realizing their fertility plans. In Europe, the aggregate gap between intended and realized fertility is largest in Southern Europe, amounting to 0.6-0.8 children per woman in Greece, Italy and Spain (Table 1; Beaujouan and Berghammer 2019). The gap also tends to be steeper for highly educated women and couples, who often face huge obstacles in combining their career and family aspirations. At an individual level, the gap between intended and realized fertility may result from changing fertility plans as well as life events and circumstances that cannot be influenced by family policies (e.g., poor health, disagreement between partners, not having a suitable partner, partnership dissolution). However, wider differences between intended and realized fertility, in the order of 0.3 births per woman and larger, constitute one of the most compelling rationales for family policies aiming to address obstacles women and men face in realizing their family plans (Sobotka and Lutz 2010; Philipov 2009). They clearly constitute what Gauthier (2007) labelled a “policy window of opportunity”.

**Table 1 Gap between intended family size at age 20-24 and achieved family size at age 40-42 or older in selected countries in Europe and in the United States, women born in the early 1970s**

<b>Countries with very low cohort fertility</b>				<b>Countries with moderately low cohort fertility</b>			
	Intended family size	Actual family size	Gap (actual – intended)		Intended family size	Actual family size	Gap (actual – intended)
<b>South-Eastern &amp; Eastern Europe</b>				Czechia	2.04	1.81	-0.23
Bulgaria	1.88	1.63	-0.25	France	2.14	2.02	-0.12
Latvia	2.13	1.67	-0.46	Hungary	2.14	1.86	-0.28
<b>Southern Europe</b>				Netherlands	2.32	1.76	-0.56
Greece	2.27	1.56	-0.71	Norway	2.46	2.08	-0.38
Italy	2.09	1.43	-0.66	United Kingdom	2.22	1.90	-0.32
Portugal	2.14	1.58	-0.56	United States	2.33	2.18	-0.15
Spain	2.18	1.43	-0.75	<b>Average for 7 countries</b>			
<b>Central Europe</b>					<b>2.24</b>	<b>1.94</b>	<b>-0.29</b>
Austria	1.95	1.67	-0.28				
Germany	1.83	1.53	-0.30				
Slovenia	2.30	1.69	-0.61				
Switzerland	2.25	1.64	-0.61				
<b>Average for 10 countries</b>							
	<b>2.10</b>	<b>1.58</b>	<b>-0.52</b>				

**Notes:** The gap between desired family size at a young age and achieved family size was derived by comparing survey data on fertility intentions among women in their early 20s with the data on achieved family size among the same cohorts of women at age 40-42 based on the Human Fertility Database and other sources. Data on intended family size at age 20-24 are based on surveys conducted in the 1990s. Most datasets pertain to women born in the early- to mid-1970s with the exception of data for Norway and the United Kingdom, which pertain to women born in the late 1960s. See Table 3 in Beaujouan and Berghammer (2019) for details.

**Source:** Figure 1 in Beaujouan and Berghammer (2019).

## 2.2 What explains very low fertility?

An extensive literature exists on the factors driving fertility declines during the transition from a high to relatively low fertility and explaining low fertility rates (e.g., Adsera 2004 and 2005; Balbo et al. 2013; Basten et al. 2014; Canning 2011; Feyrer and Sacerdote 2008; Hirschman 1994; Lesthaeghe 2010; Morgan and Berkowitz King 2001; Morgan 2003; Morgan and Taylor 2006; Rindfuss et al. 2003; Rindfuss and Choe 2016; van de Kaa 1996; see also a companion report by Wilkins (2019)). We do not aim to review these studies. Rather, we focus on the differences between moderately low and very low fertility typical of contemporary highly developed countries (e.g., UNFPA 2018) and outline key factors repeatedly identified in the literature as important determinants of very low or “ultra-low” fertility. These factors do not act in isolation—they form a wider set of institutional conditions that make it difficult for individuals and couples to realize their reproductive plans (Rindfuss and Choe 2015; 2016). We discuss the impact of economic and labor market uncertainty, conflicts between employment and family life, domestic gender inequalities, intensive parenting, housing costs, the mismatch between rapid family changes and societal expectations about marriage and parenthood as well as the impact of societal upheavals.

While some of these forces, such as housing availability and costs, have direct policy relevance and can be partly alleviated by policy interventions, some are beyond the scope of the conventional family and social policies.

#### *Economic and labor market uncertainty*

Achieving economic security, having a stable job and acquiring adequate housing are often listed as important preconditions for parenthood (e.g., Thomson and Lee 2011). Uncertainty has a depressing effect on fertility: it negatively impacts first birth intentions, especially for men (Fahlen and Oláh 2018) and contributes to fertility postponement (Kreyenfeld 2010, Vignoli et al 2012, Pailhé and Solaz 2012). Rising unemployment and deteriorating economic conditions have been repeatedly identified as important drivers of fertility decline across different countries (Sobotka et al. 2011), also during the recent *Great Recession* around 2008-13 (Comolli 2017; Matysiak et al. 2018). In some societies the impact of economic uncertainty may prevail for long periods of time. Adsera (2004 and 2005) and Barbieri et al. (2015) identified persistent high unemployment and unstable contracts as important factors behind postponed parenthood and low fertility in Southern Europe.

In many high-income countries economic uncertainty has been concentrated among young adults, whose jobs have become insecure and often poorly paid—a trend that accelerated especially during the economic recession in 2007-10 (Sironi 2017, Katz and Krueger 2016). Across the highly developed countries, the earnings and income of people in their 20s and early 30s stagnated or fell among the generation of the *Millennials* born in 1981-2000 compared to the previous generations, with the largest falls reported in Southern Europe (Greece, Italy, and Spain) followed by Germany and the United States (Rahman and Tomlinson 2018: Figure 7). Rising costs of housing further contribute to the squeeze experienced by many young people. Many of them are therefore unable to reach the material standards – stable employment position, sufficient income and adequate housing – considered necessary to start a family. The outcome is delayed residential independence, delayed partnership formation, and delayed parenthood—in short, a “failure to thrive syndrome” (Sanderson et al. 2013).

The downward trend in earnings and economic position has been particularly notable among the group of lower- and middle-educated, contributing to stronger economic polarization and social status disparities. Ongoing globalization and technological change have led to a decline in the labor demand for the middle-skilled workers, creating downward pressure on wages of the low-skilled workers and forcing workers to accept low-paid and fragmented (fixed-term, short-hour, on-call) contracts (Autor and Dorn 2009, Goos et al 2014, Ridao-Cano and Bodewig 2018). As a result, the opportunities of the low-and-middle skilled for family formation may be particularly strongly affected by the ongoing transformations in the labor markets and increasing employment instability (Adsera 2017).

#### *Conflicts between career and family life*

Higher educational expansion has gone hand in hand with a massive entry of women into the labor market, who no longer quit employment after becoming mothers but rather opt

for combining parenthood with paid work (Goldscheider 2000, Goldin 2006). Dual-earner families have replaced the male breadwinner family model as a dominant arrangement among better-educated couples (Steiber et al. 2016), although part-time employment among mothers remained most prevalent in many Western economies, e.g. Austria, the Netherlands or Germany (Berghammer 2014). This shift has dramatically increased the importance of “reconciliation” policies aiming to reduce the conflict between career and childrearing, especially childcare and parental leave provision as well as the regulation of work time and employment conditions for parents, including the availability of part-time and flexible work arrangements (McDonald 2006; OECD 2011).

Under the new dual-earner model, rigid and demanding labor market, characterized by long working hours and limited work flexibility, negatively affects parenthood decisions. This is especially the case in East Asian countries and territories (Japan, Republic of Korea, Hong Kong SAR, and Taiwan Province of China), where long work hours, particularly among men, clash with extensive responsibilities mothers shoulder in relation to their children’s education and upbringing (see also Box 7). The work cultures in the region reward seniority and face time and require long working hours and availability to meet last-minute work demands (Nagase and Brinton 2017, Brinton 2019). Women who want to compete in such a demanding labor market need to adopt the competitive “male” working style. With little support from their male partners at home, they are thus unable to combine the demanding work careers with childrearing. At the same time, those who choose to reduce working hours often lose chances for promotion and eligibility to social benefits, including parental leave. Women are also overrepresented among persons on temporary contracts, which do not give rights to leave benefits either (Lee et al 2016). This makes juggling of domestic and labor market roles almost impossible for women (Tsuya 2015 and Rich 2019 for Japan).

Cooke and Baxter (2010) argue that fertility rates are lowest in the societies that have until recently embraced male breadwinner model as these countries provide only limited public or market support for mothers’ employment. East Asia, Southern Europe and German-speaking countries fall in this category. In contrast, Nordic countries and some of the Western European countries (France, Belgium) responded early on to the growing women’s participation in the labor force by expanding childcare provision for children in all age groups and reforming parental leave, making it shorter but better paid and available for both parents (see Boxes 3 and 9).

#### *Persistent gender inequalities in the division of housework and childcare*

Even though mothers are commonly present in the labor market, women still do much more housework and childcare than men all around the world (OECD 2017a). Within Europe, these discrepancies are the lowest in Nordic countries and strongest in Southern Europe where women still perform more than 75% of total housework (Fisher and Robinson 2010, Kan et al. 2011). East Asian women shoulder an even higher share of domestic responsibilities. In particular, Republic of Korea and Japan had the most skewed gender division of domestic work among the rich OECD (Organization for Economic development and Cooperation) countries around 2010, with 88% of unpaid labor performed by women (OECD 2017a: 191; Kim 2018).

Strong gender inequalities in housework and childcare were compatible with parenthood in the past, when men were mainly responsible for earning income and women for childbearing and childrearing. However, they are not sustainable in societies in which women work for pay, and typically result in low fertility. As McDonald (2000: 1) argued, “if women are provided with opportunities nearly equivalent to those of men in education and market employment, but these opportunities are severely curtailed by having children (...) then women will restrict the number of children that they have to an extent which leaves fertility at a precariously low long-term level...”. Goldscheider et al. (2016) and Esping-Andersen and Billari (2015) also perceive the shift to gender egalitarianism and a stronger involvement of men in the home as a precondition for achieving an upturn in fertility rates. This conclusion is supported by Myrskylä et al. (2011), whose study revealed that the positive impact of development (in terms of wealth, health and education) on fertility in highly developed countries is conditional on higher levels of gender equality: countries with low gender equality continue experiencing very low fertility even when their level of development reaches very high level.

Consistent with these arguments, some countries have implemented measures aiming to increase gender equality in the family. For instance, they introduced well-paid parental leaves with a certain proportion allocated to each parent on a ‘use it or lose it’ basis (non-transferrable between parents). The idea behind such parental leave schemes is that they give fathers the statutory right to take a break from work to care for their children (Brandth and Kvande 2009). In this sense, the policy eases negotiations between fathers and their employers, who still tend to perceive men as ‘ideal workers’ who are strongly committed to work regardless of their family obligations (Acker, 1990, Davies and Frink, 2014).

### *Intensive parenting*

Social norms regarding what it means to be a good parent have changed substantially. Childrearing is increasingly centered around children’s needs, requires higher emotional, time-related and financial inputs and more “expert knowledge” (Hays 1996). The trend toward intensive parenting went hand in hand with new evidence on child brain development which stressed the importance of parental investments for children’s emotional and cognitive development (Wall 2010). There is now a general consensus that the very early years of life are crucial for future success in education, labor market and interpersonal relationships (Wall 2004; OECD 2006b and 2011). Consequently, parents pay more attention to direct interaction with their children and attend more closely to children’s needs and cognitive stimulation. Studies for Europe and the United States find that maternal time spent with children has not decreased despite the rise of women’s labor force participation (Bianchi 2000; Gauthier et al. 2004). On the contrary, mothers spend more time directly interacting with children instead of monitoring them while performing other activities (Bianchi 2000). These developments are strongest among middle-class parents who “foster children’s talents through organized leisure activities and extensive reasoning” (Lareau 2002). The pressure on parents to invest more effort in children’s development is also one of the reasons for the expansion of private school markets and homeschooling in some countries as they allow for a better adjustment of school curricula for fostering

children's unique talents (Aurini and Davies 2005). The rise of financial and time-related costs of having children, resulting from intensive parenting and clashing with the spread of dual earner couples and high economic uncertainty, may have contributed to recent fertility declines in many developed countries.

### *Unaffordable housing*

Housing prices and availability (including access to mortgages) influence fertility, especially first births (Mulder 2006). Very low fertility is linked with housing market regimes that combine a high share of owner-occupation and low access to mortgages, typical of Southern, Central and Eastern Europe (Mulder and Billari 2010). In the last decade, housing prices have skyrocketed in many cities, which have become magnets for economic activity and immigration. In 2008-17 housing prices in London, Amsterdam, Berlin, Vienna or Warsaw jumped much more strongly than in the surrounding countryside (European Cities Report 2018). In Britain the *Millennials* born between 1980 and the mid- 1990s spend almost a quarter of their incomes on housing, far more than the previous generations (Resolution Foundation 2018: 69). The housing squeeze has likely negatively affected fertility. For the United States Clark (2012) shows that living in metropolitan area with expensive housing market is linked to a delay of first births by three to four years when compared with the housing markets with the cheapest housing.

### *Rapid family changes incompatible with long-standing norms, values and expectations*

Fertility rates are also affected by the rapid pace of social and family changes among younger generations that clash with long-standing societal norms, values and expectations regarding living arrangements, marriage, parenthood and parental roles. A compelling example of this conflict is the persistence of traditional expectations and obligations pertaining to marriage, family and childrearing in East Asia (Raymo et al. 2015). As childbearing outside marriage remains little accepted in the region, reproduction in Japan, Republic of Korea, Taiwan Province of China or Singapore takes place almost exclusively within marriage and the share of births outside wedlock remains very low, at 2-4% (Raymo et al. 2015). However, marriage still involves the entire bundle of gendered expectations, pressures, and obligations towards children, family and kin, which puts especially large burden on women (Bumpass et al. 2009). In addition, the context of relationships has changed and the expectations about prospective partners have shifted, with many younger women perceiving men as self-centered, immature and lacking social skills (Lei 2017 for Japan). Not surprisingly, many women lack enthusiasm about traditional marriage (Bumpass et al. 2009). The outcome is a fast increase in childlessness and non-marriage (e.g., Jones and Gubhaju 2010; Raymo et al. 2015), which contributes to the persistent low fertility in the region.

### *Societal upheavals*

Social and political upheavals, often mixed with economic turbulences, discourage people from family formation or from having another child. Historically, social crises had always led to delayed marriages and births and to fertility declines (Caldwell 2004). Besides material

deprivation and economic uncertainty, periods of social upheavals are also marked by rapid changes in norms and values, potentially leading to “normlessness,” anomie and “disorientation” among some people (Philipov 2002). In Central and Eastern Europe, a large-scale societal and economic restructuring following the breakdown of the state-socialist system in 1989-1991 precipitated a huge fertility decline as well as a shift towards delayed parenthood during the 1990s (Sobotka 2011; Billingsley 2010).

Countries in this region differed widely in the success of their economic transformation, with many Eastern European countries experiencing severe and protracted economic crisis during the 1990s. As Perelli-Harris (2008: 1163) argued in the case of Ukraine, under anomic conditions people become averse to take additional risks including childbearing as “they feel they have lost control over their environment” and may want to “avoid expending the additional physical and emotional energy that raising children requires”.

### **3. Policy responses to low fertility: analytical and methodological issues**

There is a huge diversity of potentially relevant policies affecting reproductive decisions, many of which are not explicitly designed as family policies. In a broad sense, family policies encompass “everything that government does to and for the family” (Kammerman and Kahn 1978: 3, cited by Neyer and Andersson 2008: 701). Health care provision, education policies, housing regulations, labor market regulations, provision of assisted reproduction or taxation policies all frame conditions in which people raise children and create environment that can nurture or discourage a decision to have a(nother) child. National governments are not the only “actors” supporting families: regions, municipalities and firms often have distinct schemes and initiatives supporting families and children or nurturing child-friendly environment.

In a broad sense, family policies evolved together with the evolution of the welfare state and have been strongly shaped by different types of welfare systems that have developed in low-fertility countries (Esping-Andersen 1990 and 1999). Society’s norms and values, prevailing ideologies, religious traditions, historical experiences, public discourses, available resources, as well as examples from other countries have shaped distinct policies in individual countries. Policies form broad “packages”, are created over long period of time and get frequently amended, expanded or reformed (see Boxes 8- 10 below). This is why it is difficult to evaluate the impact of any particular policy measure on fertility in isolation from all other policies in place.

Moreover, even when specific policies are well defined in terms of their timing, scope and aims, measuring their long-term fertility impact is challenging as the period fertility indicators commonly used in fertility research reflect changes in both family size and the timing of births. In other words, when a new policy gets implemented, couples may decide to have (a)nother child, or they may decide to have their desired child earlier than initially planned. Methodologically, it is difficult to separate these effects of policies on fertility level (*quantum*) and timing (*tempo*). This section discusses policy aims and the conceptual difficulties involved in studying policy effects on fertility in more detail. It sets the stage for the subsequent review of policy influences on fertility.

### 3.1 What are the main aims of national family policies?

National family policies have diverse sets of goals which cannot be easily summarized by an established classification of welfare state regimes (Thévenon 2011). Only a small share of family policies explicitly aim to increase fertility rates. Rather, most policies have wider and more diffuse aims including poverty reduction and providing broader support for families and children. This diversity of aims should be taken into account when evaluating policy effects on fertility.

Thévenon's (2011) systematic analysis distinguishes six main aims of policies supporting families:

1. *Poverty reduction and income maintenance* through allocation of benefits to lower-income families.
2. *Direct compensation for the economic cost of children* through allocation of cash benefits, fiscal transfers, tax advantages and other benefits (e.g., reduced fees or public transport subsidies) to families.
3. *Fostering employment*, especially among mothers, via parental leave entitlement, childcare provision, part-time and flexible working time regulations, and a tax and benefit system that supports working parents
4. *Improving gender equality*, by promoting equal sharing of paid and unpaid work, including childcare, between partners. These policies include dedicated paternity leave and incentives for the parents to share parental leave.
5. *Support for early childhood development*. These policies include initiatives that help parents building knowledge and skills supporting child development and, more commonly, rules and initiatives to support enrolment of children in formal childcare at early ages and to support provision of high-quality childcare services.
6. *Increasing birth rates*.

This last group of policies is at the heart of our analytical focus. However, the stated policy aims are often mixed and pronatalist goals are found among the broader sets of aims. The fertility goals are often not explicitly stated in the official documents issued by the governments and the ministries responsible for families, welfare and social protection (see also Box 1). While explicit fertility targets are relatively uncommon, pronatalist policies are often characterized by parity-specific rules that take into account the number of children born to a woman or couple. These policies provide support only for second, third or higher-order children, or their level of support increases with the number of children. For instance, since 1993, mothers with three or more children in Hungary have been eligible to a child-raising support, which gives them a fixed monthly sum until the youngest child reaches the age of eight (Spéder et al. 2017). New policies announced in February 2019 include items like life-long exemption from personal income tax for women who have at least four children or a scheme subsidizing seven-plus-seats cars for large families (About Hungary 2019).

Occasionally, governments also consider restrictive policies limiting access to contraception and abortion. State-socialist countries in Central and Eastern Europe had ample experience with these policies in the 1950s-1980s (David 1999; see Box 8), with the most notorious case

of Romania severely restricting access to abortion in 1967-89 and later drastically limiting availability of contraceptive pills, IUDs and condoms in order to boost fertility (e.g., Soare 2013; Klingman 1998; see Box 8 below). Although occasionally discussed, such restrictive policies are not common today. Some countries that strongly limit access to abortion (e.g., Poland) or provide limited or no sex education at schools, do so for religious considerations unrelated to their fertility aims.

Thévenon's categorization can be further extended to consider additional policies and initiatives helping families, such as policies supporting infertility treatment. Also worth mentioning are purely symbolic initiatives, such as issuing medals to mothers of large families (Belarus, Russian Federation) or other symbolic initiatives by religious and state authorities.<sup>2</sup>

Both new policies and reforms of the existing family policies are often based on analyses conducted by specific committees, scientists and government departments (see e.g. the 2018 *White Paper for Japan* (Cabinet Office, Government of Japan 2018), the *Population Situation Analysis for Moldova* (UNFPA 2016a) or the *Strategy of Children and Families 2012-20* for Estonia (Ministry of Social Affairs of Estonia 2011). Nevertheless, there is also a strong ideological element present in the process: governments often aim to promote policies that conform to their ideological orientation or that are in line with the norms and values among their voters. Thus, policies are often marked by the ideological footprint of the governing political parties, especially in countries where family policies are unstable. In a broader vein, policies are often influenced by prevailing values and norms related to family and reproduction. For instance, women and men in Central Europe as well as in Austria and Germany often express negative attitudes about working mothers of small children (Panova and Buber-Ennsner 2016). In agreement with these attitudes, most countries in the region provide extensive parental leave to stay-at-home parents, lasting up to three years. Policies thus both confirm the existing norms and shape them further. Neyer and Andersson (2008: 703) aptly summarize this function of policies: "...policies reflect the norms that they are intended to create, maintain, or strengthen. They signal which kind of behavior is expected or at least supported. They therefore also exert their impact through their normative or symbolic function."

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<sup>2</sup> Among these, especially curious case is a decision in 2007 of the head of the Georgian Orthodox Church, Patriarch Ilia II, to personally baptize any baby born to parents with more than two children, which is claimed to have significantly boosted the number of third births in the country since 2008 (Hakkert 2014: 54).

### Box 1. Explicit and implicit fertility targets in policy documents and initiatives

Although the launching of new family policies is often motivated by the desire of governments to increase birth rates in the country or to halt a decline in fertility, relatively few policy documents state explicit and measurable fertility targets. More frequently, desired fertility goals are proclaimed by the leading politicians in their speeches, press conferences and in interviews with the media. For instance, president of Belarus Alexander Lukashenko and president of Turkey, Recep Tayyip Erdoğan, repeatedly urged women to have three or more children.<sup>3</sup> More often, politicians refer to replacement-level fertility, arguing that fertility rates should reach 2.1 births per woman in the future.<sup>4</sup>

When fertility targets are provided in the official documents, they usually appear alongside with many other goals, such as increasing or stabilizing population size, but often also goals related to health, mortality, education and family well-being. This should be taken into account when judging their merits. At times, these goals are relatively vague, without explicit time horizon or specific fertility target. For instance, the *Population White Paper* issued by the Government of Singapore in 2013 stated that the policy aim is to raise the country's birth rate.<sup>5</sup> Similarly, the *Demographic Security Policy Concept for Georgia 2017-2030* (UNFPA 2016b: 5) argues that "maintaining the current level of replacement fertility and avoiding the future decline of fertility is the crucial cornerstone of developing a complex population policy in Georgia." The *National Development Plan for Latvia for 2014-20* (CSCC 2012, p. 16) claims that "increasing the birth rate is important for ensuring the existence of the Latvian nation."<sup>6</sup> A more specific, yet moving, goal is stated in Austrian concept of monitoring family friendliness in the country (*Familienfreundlichkeits-Monitor*), launched by the Family Minister in 2014 as a part of an effort to create the most family friendly society in Europe: it aims to increase fertility rates to the level of desired family size by the year 2025 (Karmasin 2016).

When explicit fertility targets are formulated, as in the policy documents issued by Belarus, Estonia, Japan, Republic of Korea, and Russian Federation, they differ widely in their time horizon and ambition: whereas Belarus and Estonia wish for a mere stabilization of or a

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<sup>3</sup> For instance, at a government meeting on tackling demographic problems on 21 August 2014 the president of Belarus announced that the resources saved on reduced social benefits will be directed to support families. He argued that "This is a disaster when one child grows in a family! Two are necessary. But three of them must be stimulated. Four." (...) "Well, maybe someone will strike at five - we have such people, thanks to them" (...). "But three of them are necessary!" (...) "This sphere will never - at least as long as I'm the president — be deprived of attention." (Regnum 2014, cited in Demoskop 2014). The president of Turkey, Recep Tayyip Erdoğan, in a speech for Turkey's Women's and Democracy Association on 5 June 2016 argued that "Rejecting motherhood means giving up on humanity," (...) "I would recommend having at least three children." (Guardian/AFP 2016).

<sup>4</sup> For instance, the Prime Minister of Czechia stated on 2 February 2019 in an interview with a daily *Lidové Noviny* that "We need to increase birth rates...not at 1.7 births per woman, but 2.1. We need women to give birth at age 25, not 30, also for health reasons." (p. 11, authors' translation).

<sup>5</sup> The document also makes a broad statement: "We hope that our collective efforts will encourage more Singaporeans to experience the joys of family and children, and nurture the next generation who will grow up to shape the future of Singapore." (Government of Singapore 2013, p. 24).

<sup>6</sup> The document also formulates a specific goal of increasing the number of births from a low of 18.8 thousand in 2011 to 27 thousand in 2017 and 28 thousand in 2020 (p. 41, item 257), which has been, so far missed by a large margin (the observed number of births in 2017 was 20.8 thousand).

slight increase in their fertility in the next 5-10 years, Republic of Korea and Russian Federation aim at bold fertility rises in a longer time horizon (Table 2). The government of Japan has put the efforts to tackle declining birth rates and aging population at the heart of its agenda. It has formulated an explicit fertility goal in 2016, a “desirable fertility” of 1.8 births per woman as “the second new arrow” promoted by the Prime Minister Shinzo Abe as part of his concerned effort to revitalize Japanese economy and society (Cabinet Office, Government of Japan 2016). While the document states no year when this fertility level is to be reached, it gives a precise justification of its level<sup>7</sup> and each year announces a series of “urgent measures” that will be implemented to reach this target (Cabinet Office, Government of Japan 2016, 2017 and 2018). However, as Table 2 shows, fertility rates in the analyzed countries mostly fall well short of the future policy goals.

**Table 2 Selected policy initiatives and documents with an explicit fertility target**

	Published	TFR previous year	Target fertility	Target Year	Achieved TFR in target year	Latest TFR in 2018
<b>Belarus (1)</b>	2011	1.50	TFR at 1.5-1.6	2015	1.73	1.45
<b>Belarus (2)</b>	2016	1.73	TFR at 1.75	2020	...	1.45
<b>Bulgaria (3)</b>	2005	1.33	TFR at 1.50	2020	...	1.56
<b>Estonia (4)</b>	2011	1.72	TFR at 1.71 TFR at 1.77	2015 2020	1.52	1.67 1.67
<b>Hungary (5)</b>	2019	1.49	TFR 2.1	2030	...	1.49
<b>Japan (6)</b>	2016	1.44	"desired birthrate 1.8"	no target	...	1.42
<b>Republic of Korea (7)</b>	2015	1.21	TFR 1.5 in 2020, 1.7 in 2030, 2.06 in 2045	2020-45	...	0.98
<b>Russian Federation (8)</b>	2007	1.31	increase TFR by a factor of 1.5 since 2006 (i.e., to 1.95)	2025	...	1.58
<b>Singapore (9)</b>	2013	1.29	"raising our birth rate"	no target	...	1.14

**Notes:** The stated fertility target for Hungary was not published in an official document, but stems from an interview with the state Secretary for Families Katalin Novák (BBC News 2019) which took place following an announcement of a wide range of pronatalist measures by the Prime Minister Viktor Orbán in his “State of the Nation” address on 10 February 2019 (About Hungary 2019). Empty space (dots) in the column on the achieved TFR in the target year means the year has not been reached yet or the data are not available yet for that year.

**Sources:** 1: Concept of Demographic Security in the Republic of Belarus, 2011-15 (Legislation of the Republic of Belarus 2011); 2: Nation's Health and Demographic Security in Belarus, 2016-20 (Ministry of Labour and Social Protection of the Republic of Belarus 2016); 3: National Demographic Strategy of the Republic of Bulgaria 2006-2020 (Ministry of Labour and Social Policy, Republic of Bulgaria 2007); 4: Strategy of Children and Families, 2012–2020 (Ministry of Social Affairs of Estonia 2011, p. 15); 5: see Note above; 6: A 2016 Declining Birthrate White Paper (Cabinet Office, Government of Japan 2016); 7: Third five-year basic plan for aging society and population (2015-2020) (Ministry of Health and Welfare, Republic of Korea 2015) and Lee (2015); 8: Concept of Demographic Policy in Russian Federation until 2025 (President of the Russian Federation 2007; Russian Presidential Academy 2015); 9: A sustainable Population for a dynamic Singapore (Population White Paper) (Government of Singapore 2013).

<sup>7</sup> The “desirable” fertility rate has been calculated assuming that all married couples achieve their desired family size (2.07 children on average) and all single people planning to marry in the future (i.e., 90% of them) will do so and then realize their desired family size (2.12 children on average). The resulting number (1.95) was then adjusted downwards to account for divorce, bereavement and other factors (A 2016 Declining Birthrate White Paper, Chapter 2, Figure 1-2-5; Cabinet Office, Government of Japan 2016).

### 3.2 Key issues in assessing policy effects on fertility and fertility change

#### *Challenges in measuring fertility*

Most policy documents (Box 1) and studies evaluating effects of family policies focus on period fertility measures, notably the Total Fertility Rate (TFR). It is computed as a sum of fertility rates by age in a given period (usually, calendar year) and therefore it is supposed to reflect fertility of that period. However, it is frequently misinterpreted as if it reflected a real family size (number of children ever born) among specific generations of women. Its dominance in policy analyses may lead to misleading interpretations and conclusions (Sobotka and Lutz 2011), also when it is used to assess the gap between reproductive intentions and actual fertility.

Period TFRs are relatively unstable, with annual absolute changes commonly amounting to 0.1 or more (or about 6-8% in relative terms). This would not necessarily be problematic if the TFR was strictly interpreted as a period index that can change rapidly from one year to the next as the conditions of the period change, similar to inflation rate, unemployment or consumer sentiment. However, its “children per woman” interpretation gives a false signal that it measures the real family size among women. In particular, the TFR is strongly affected by changes in the timing and spacing of births, which often drive its fluctuations. Because women and men in the highly developed countries have a good access to modern contraception, they can flexibly respond to changing period conditions and decide to have children later in life, bring them forward, space them further apart or more closely to each other. When births are shifted to higher reproductive ages, period fertility rates are deflated as some births that would have otherwise occurred in a given period were shifted into the future. As a result, period fertility rates may fall well below the actual family size among women having children at that time. By contrast, a shift in childbearing to younger ages inflates period fertility rates as more births are concentrated into a shorter time interval. In reality, period fertility rates frequently go up and down due to an interplay of the genuine changes in family size, short-term fluctuations, and the effect of changing timing of births (*tempo effect*). Data for Czechia, Russian Federation and Sweden, three countries with relatively unstable period fertility rates, reveal that TFR fluctuations strongly affect not only the assessment of the actual fertility levels at any period of time, but also comparisons between countries, with very different conclusions on offer in different time periods (Figure 4a). In the course of 35 years since 1983, all the three countries experienced periods of impressive fertility booms and busts, reaching both relatively high and low or very low TFR levels, with the extreme lows of 1.1-1.2 in Czechia and Russian Federation around 1999 and the highs of 2.1-2.2 in Russian Federation and Sweden in the late 1980s and early 1990s. By comparison, completed cohort fertility in these three countries stayed stable or changed gradually, with Russian Federation consistently having the smallest family size (Figure 4b; see also Boxes 3, 6 and 8).

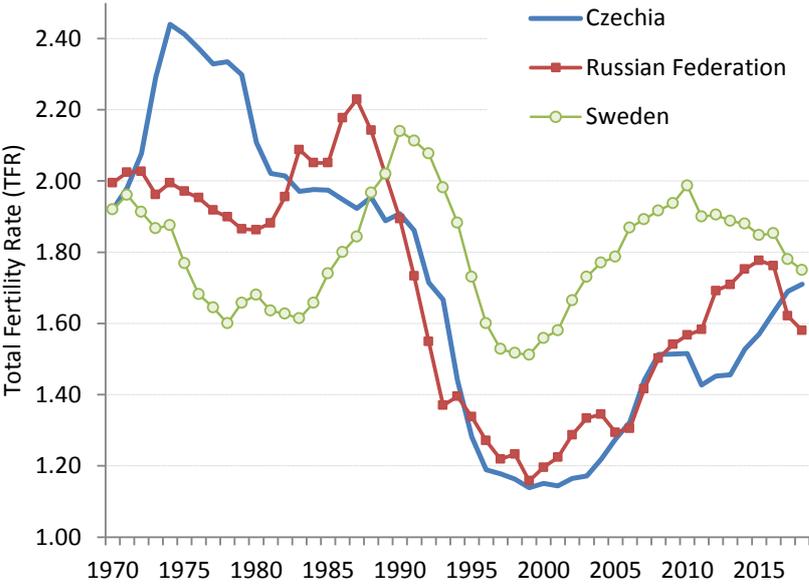
The tempo effect has been an important factor behind low and very low period fertility rates across the highly developed countries during the last half a century. The spread of effective contraception, education expansion, labor market instability and changing values and preferences led to delayed parenthood and made childbearing at higher reproductive ages

more common (Mills et al. 20011; Sobotka and Beaujouan 2018). The outcome was a protracted “postponement transition” from an early to a late age at first birth, with unstable period fertility rates often falling well below the actual family size of women for many decades (Kohler et al. 2002, Bongaarts 2003; Goldstein et al. 2009, Sobotka 2017).

What are the alternatives to using period TFR? Two main options are available. The first possibility is to use data on completed fertility (family size) at the end of the reproductive life among women born in different years (see Figure 4b), which reflects well the real fertility behavior of different generations of women. This indicator is not affected by temporary fluctuations in birth rates or by the changes in the timing of births. The second option is to employ alternative indicators of period fertility which either provide more reliable information about period changes in fertility rates or which aim to provide adjustment for the influences of changes in fertility timing on period TFR. Both options have drawbacks, however. Cohort indicators are available only once women reach the end of their childbearing years and reflect fertility behavior over the entire reproductive lives of the women analyzed, spanning over many calendar years. Thus, they are not suitable for following period changes in fertility, including short-term policy effects on fertility rates. They are much better suited for an analysis of long-term changes in family size, including possible long-term influences of family policies. The alternative indicators of period fertility are not as readily available as the TFR and there is no single measure that would be broadly recognized as a preferred indicator of choice among demographers. This limits their use for international comparisons. Rather, different types of research questions may influence the selection of the most suitable fertility indicator (e.g., Ní Bhrolcháin 2011).

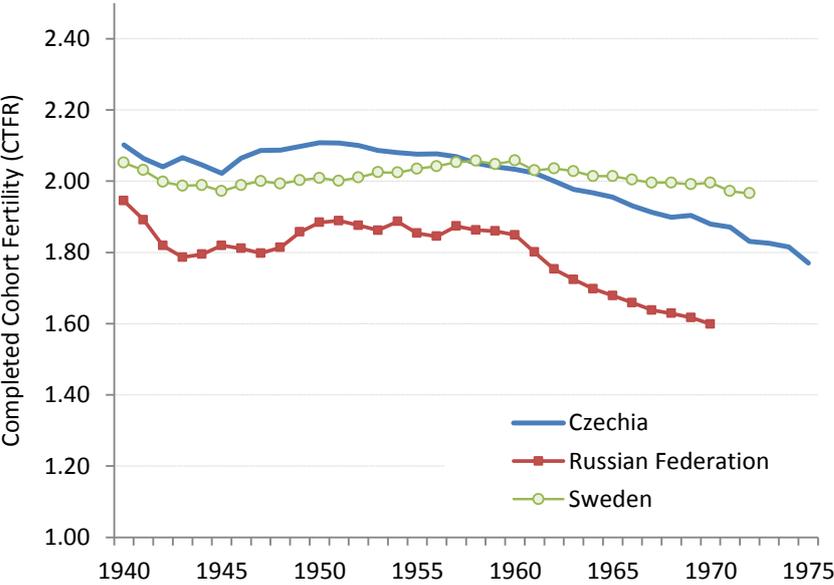
A proper consideration of the interpretation, drawbacks and limitations of individual fertility measures is of key importance when evaluating policy effects on fertility as different indicators often give contrasting impression about the direction and size of fertility changes over time (or between birth cohorts). Consider different indicators of the fertility change in Czechia plotted in Figure 5. They offer very different interpretation of the impact of two waves of family policy expansion, one starting in 1968 and another one starting in 2001. In both cases, period TFR jumped upwards in the following 5-10 years, suggesting these measures gave a sizeable boost to fertility rates (or, alternatively, that some other factors contributed to a huge rise in fertility rates in that period). However, the analysis of changes in the period indicator of Tempo- and Parity-adjusted Total Fertility (adjTFRp; see Bongaarts and Sobotka 2012) and in completed cohort fertility rate of women who were in prime childbearing years reveals that much of the upswing observed in the period TFR after the year 2000 was due to the shift towards earlier childbearing (and shorter birth intervals) at that time rather than due to a huge increase in family size (Figure 5; see also Box 8). In other words, the new family supporting policies coincided with a small increase in family size and a temporary shift in the timing of births, boosting the period Total Fertility Rate well above the levels of cohort family size. Similar examples can be provided for many other countries with fluctuating period TFR, including Russian Federation and Sweden (see Box 3). When feasible, we will therefore consider a wider range of fertility indicators than the conventional TFR in our discussions and analyses of policy-induced changes in fertility.

**Figure 4a Total Fertility Rate in Czechia, Russian Federation and Sweden, 1970-2018**



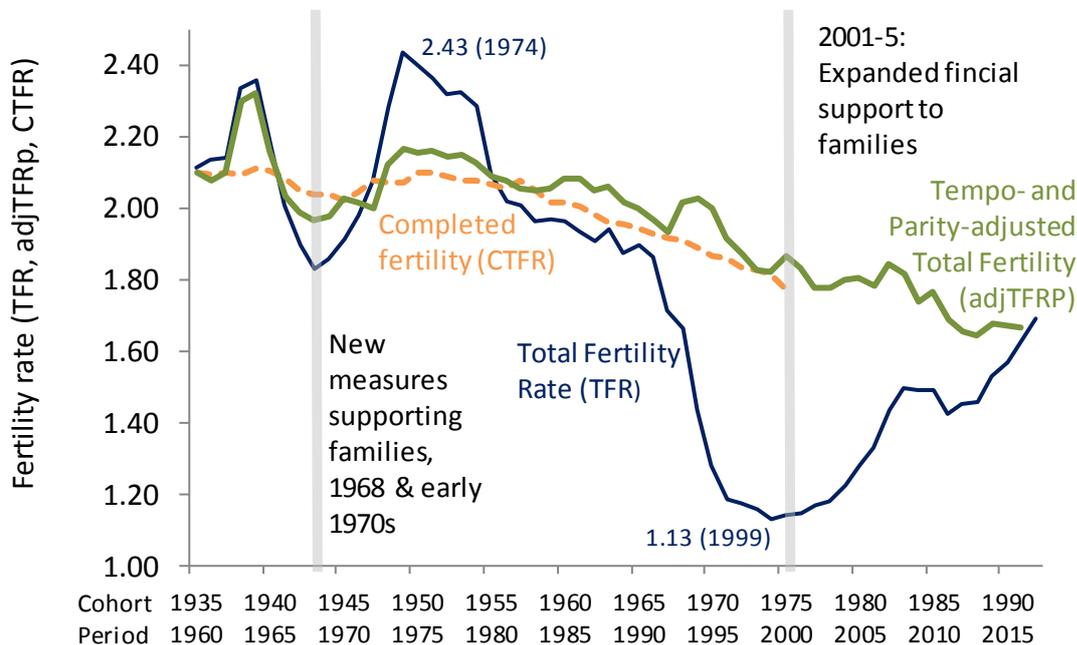
Sources: Human Fertility Database (2019), Eurostat (2019), Rosstat (2019) and national statistical offices.

**Figure 4b Completed cohort fertility in Czechia, Russian Federation and Sweden, women born in 1940-1975**



Sources: Human Fertility Database (2019), Council of Europe (2006) for Russian women born in 1940-50.

**Figure 5 Total Fertility Rate (TFR), Tempo- and Parity-adjusted Total Fertility (adjTFRp) and completed cohort fertility rate (CTFR) in Czechia in 1960-2018 (and among women born in 1935-75)**



**Notes:** Cohort fertility data displayed in the figure are shifted by 25 years, reflecting the mean age at childbearing in the 1960s-1990s. For instance, fertility rates in the year 1980 are compared with the family size among women born in 1955, who were in their peak childbearing years in that year. Completed fertility for women born in 1971-75 show fertility rates achieved up until 2016 combined with an estimate of a small proportion of fertility realized after that year.

**Sources:** Human Fertility Database (2019), Eurostat (2019) and own computations. Acknowledgements to Kryštof Zeman for providing his computations of Tempo- and Parity-adjusted Total Fertility (adjTFRp).

### *Difficulties in measuring and comparing policies: policy packages vs. individual policies*

Measuring and comparing policies is challenging. There is a bewildering and complex array of policies that may potentially affect fertility decisions. Family policies thus form broader “packages” (Fagnani and Math 2008; Thévenon 2011; Luci-Greulich and Thévenon 2013), which are often linked to the general character of the welfare state (Esping-Andersen 2009; see Box 9 below). In addition, policy reforms and expansions often involve re-designing of the whole package rather than re-designing individual policy measures, which makes policy analysis yet more complex.

Yet, policy studies are often restricted to one type of policy and seldom feature a comprehensive indicator of total policy support (Gauthier 2007). Besides classifying policy packages into broader categories, researchers have attempted to summarize the entire set of policies. This can be done either by constructing a summary measure of the total government spending on policies (e.g., OECD 2011 and 2019), or by constructing summary indexes of the overall policy performance, such as the Index of conditions for work and family reconciliation proposed by Matysiak and Węziak-Białowska (2016).

Gauthier (2007) highlights some of the challenges in comparing policies. In the case of access to cash benefits these challenges include diverse eligibility criteria based on past employment, income, number of children, family status, age and other factors, different levels of compensation (e.g., means-tested benefits and benefits ceilings), employer-provided benefits or region-specific benefits. To tackle these limitations, some studies construct comparative measures of cash support and other policy-relevant measures specified by age, number of children or birth order of children, different employment and family configurations (including solo parents), and different income specifications (with median income being most frequently used) (e.g., OECD 2011). These complex measures are key for understanding how policies work for different families, but need to be simplified into aggregate indicators when used in comparative analytical models.

Policies can also be repeatedly expanded or amended over long periods of time in response to the needs and experiences of parents and families, budget situation and shifting government priorities. Examples include long-term expansion of family policy in Germany (Box 10) as well as complex and frequently expanded pronatalist policies in Japan (see Figure 6 and Box 7). These changes in family policies often make it difficult to pinpoint a specific date which should be decisive for analyzing their impact. To deal with this, Neyer and Andersson (2008) suggest an idea of identifying “critical junctures”—points in time, when a significant change in policies occur which constitutes a break with the previous policy orientation. These “critical junctures” then can serve as focal points in the analysis of policy effects.

### *Assessing the impact of policies*

While measuring fertility change is a challenge, it is even more challenging to analyze the impact of family-related policies on fertility (McDonald 2002; Gauthier 2007; Neyer and Andersson 2008; Hakkert 2014). This is also the key reason why the estimates of policy impact on fertility differ considerably between studies even when they focus on analyzing the impact of the same policy intervention (see Box 6 on Russian Federation).

Policies are likely to work over different time horizons. Some family policies have only short-term effects, creating baby booms and busts largely caused by changes in the timing and spacing of births. For instance, one-time financial incentives such as “baby bonus” schemes that had been established in Australia, Quebec, and Spain (and later discontinued) are likely to have only a short-term effect (Thévenon and Gauthier 2011). Other policies are likely to be important for long-term fertility decisions, but might not leave an immediate footprint on period fertility rates. For example, policies supporting gender equality and work-family reconciliation are unlikely to cause baby booms, but they may be paramount for supporting long-term reproductive plans and higher family size among women and men.

At any period of time when policies are introduced, reshaped or discontinued, many other factors affect fertility simultaneously. It is therefore difficult if not impossible to precisely analyze the impact of individual policies (Neyer and Andersson 2008), also taking into account past fertility trends, appropriate time lags and other factors. Excellent study cases are policies that affect only some regions in the country or that are implemented

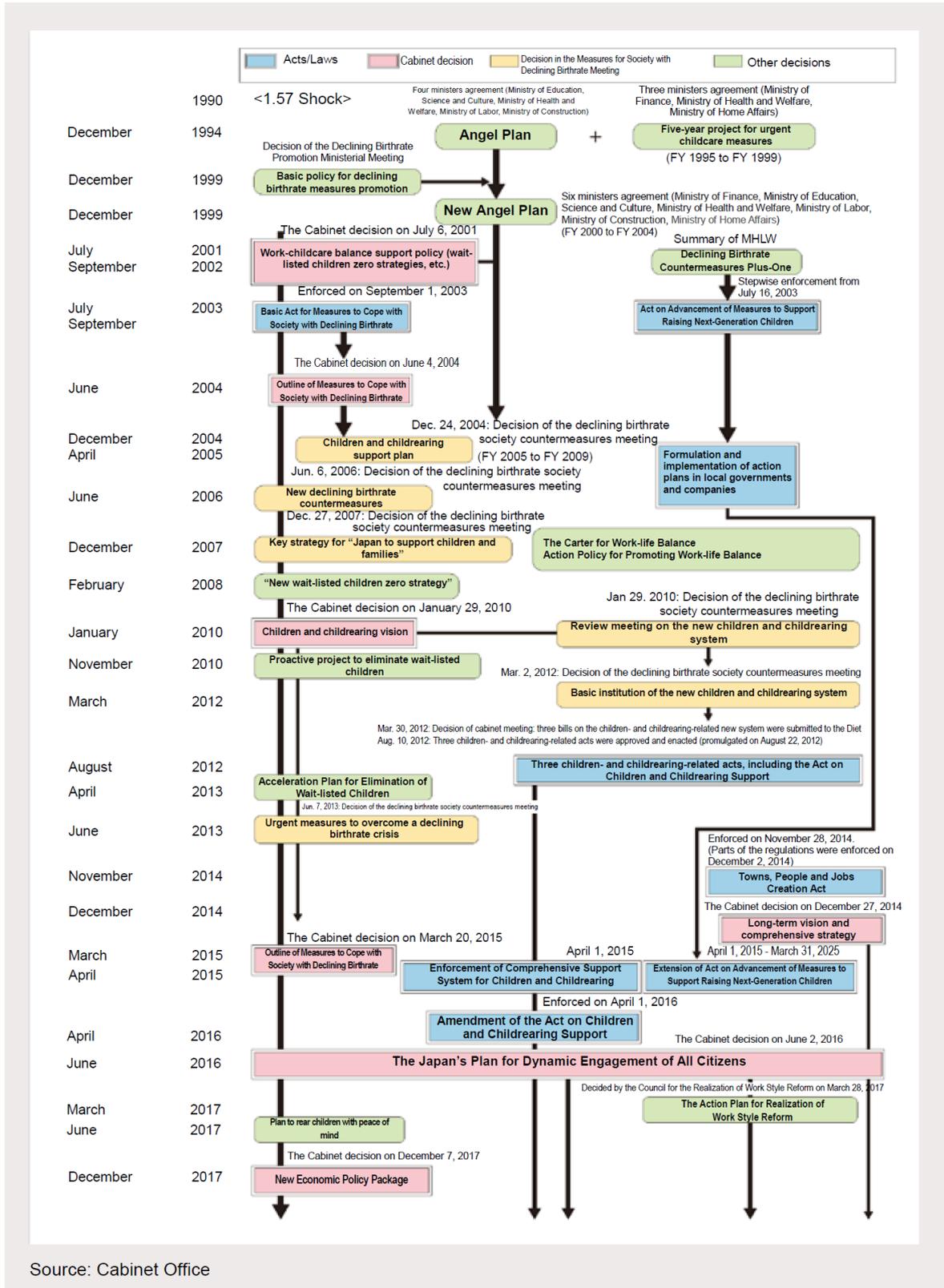
unexpectedly and affect precisely defined populations (e.g. women who gave birth after a certain date). These situations are best suited for analyzing policy effects, as they allow a “natural experiment” comparing fertility developments in two similar regions or populations at the same time of which only one was affected by the policy change (see e.g., studies on parental leave reforms in Austria and Germany by Lalive and Zweimüller 2009; Štastná and Sobotka 2009; Cygan-Rehm 2015, a study on the introduction of paternity leave in Spain by Farré and Gonzales 2019 and a study on child benefits in Israel by Cohen et al. 2013).

Further complicating policy evaluation is the variation of policy effects by individual-level characteristics, like the socioeconomic status (Cygan-Rehm 2015; Billingsley et al. 2018). In such cases, analyses carried out at an aggregate-level are likely to lead to false conclusions. A good example of this sort of ecological fallacy are fertility rates in France and the United Kingdom. Their striking similarity may make one think that family policies and conditions for raising children are almost the same on both sides of the Channel. However, when looking more closely, as Ekert-Jaffé et al. (2002) did, it turns up that British fertility is very much polarized: it varies greatly by socioeconomic status, with many successful female professionals remaining childless or having one child and a high proportion of women with lower socioeconomic status having larger families and becoming mothers at a young age. Overall, there are many more childless women in Britain than there are in France, which is not reflected in the aggregate-level fertility rates because of a higher number of large families. The authors of the study argue that the key effect of extensive family policies in France is their capacity to “erase fertility differentials by social class” (p. 502). Thus, in some cases, the main effect of family policies might not be in pushing the overall fertility level up, but rather in affecting fertility rates of some social groups more than the others.

Finally, family policies may have unintended or inevitable side effects, impacting fertility rates differently than initially envisioned. For instance, policies that aim to provide support for working parents may inadvertently stimulate delayed entry into parenthood by creating incentives to get a stable job before having children. This is the case of leave benefits in Sweden and other Nordic countries, which are linked to previous work experience and earnings during the year before delivery. The outcome is delayed parenthood, especially in times of economic uncertainty and higher unemployment (Santow and Bracher 2001). The analysis of individual-level data for 21 countries by Billingsley et al. (2018) found that both traditional family policies supporting stay-at-home mothers and the more gender-equal policies supporting mothers’ labor force participation were linked to first birth postponement. In turn, delayed parenthood can negatively affect ultimate family size. For this reason a comprehensive and well thought-out policy package is needed which would in such instances stimulate an earlier progression to the next child.

Figure 6 A timeline of development of pronatalist family policies and schemes in Japan since 1990

Fig. 1-2-4 Chronological history of activities



Source: Figure 1-2-4 (Chapter 2) in 2018 Declining Birthrate White Paper (Summary) for Japan (Cabinet Office, Government of Japan 2018)

## 4. Policy effects on fertility: Review and illustrations

This section gets to the core question of assessing policy effects on fertility. We give a review of policy effects on fertility, focusing especially on countries and policy interventions that are either well covered in the literature or which can be analyzed with available data. We try to reflect methodological issues and considerations sketched above. Our illustrations and analyses focus especially on fertility changes following radical policy shifts, in line with Neyer and Andersson's (2008) idea of "critical junctures". When possible, we go beyond conventional indicators of period fertility and analyze the effects of policies on fertility timing and cohort fertility. Finally, while we discuss some policies that potentially restrict reproductive rights of individuals, we do not support or advocate any measures that limit the reproductive choices and freedoms, but rather highlight their negative social consequences.

First we sketch major differences in policies and policy spending in the highly developed countries. Then we look at specific policies and policy instruments, reviewing relevant literature, providing empirical illustrations and highlighting policies that are especially beneficial for supporting fertility decisions and for enhancing children's development. We also analyze the data and provide illustrations for selected countries that have undergone significant family policy expansion during the last two decades. Finally, we discuss the evidence on the broader impact of policy "packages" and summarize key findings of the past reviews on policy effects on fertility.

### *4.1 Major differences between countries in policy orientation and policy spending*

Highly developed countries differ widely in their total spending on family-related policies and also in the way this spending is distributed between cash benefits (especially child allowances and parental leave allowances), services (childcare provision, early childhood education and family services), and tax support (tax exemptions, credits and allowances for families with children; OECD 2011).

Figure 7 illustrates these differences and trends over time (between 2001 and 2013) for selected OECD countries grouped by broader regions. Governments in two regions with very low fertility, East Asia and Southern Europe, spend relatively small share of the national income on supporting families (although the family spending in East Asia increased considerably). In Central Europe (represented here by Austria, Germany and also Czechia), governments spend considerably more resources on families, with the majority of spending consisting of cash supports. The picture is much more mixed for the regions with moderately low fertility. Nordic countries and most Western European countries (especially France, but also the United Kingdom) spend considerable resources, 3-4% of their total GDP, on families; much of this spending is directed towards services, especially childcare provision. Western European countries also differ in the resources allocated for family support, with the Netherlands providing smaller spending on families (1.8% in 2013), especially on cash benefits, than the OECD average of 2.5%. The formerly state-socialist countries of Central and Eastern Europe are even more diverse and their spending pattern is also changing more rapidly over time. Some Central European countries show higher spending on families, especially on cash benefits, as illustrated for Czechia (similar spending pattern is also found

for Estonia, Hungary, and Slovenia), but other countries, such as Latvia and Poland, show a lower amount of spending on families in 2013. Outside Europe, government spending on families is very low in Canada and the United States, whereas Australia provides relatively generous cash benefits, similar to Central European countries. Comparable data on family spending are not available for non-OECD countries in South-Eastern and Eastern Europe. In many of them, family policy has undergone dynamic evolution, with family policies in Belarus, Latvia, Russian Federation and Ukraine in part motivated by pronatalist agenda and mainly based on cash benefits, and governments in Lithuania, Romania and Serbia applying a more conventional mixture of cash benefits and services (Frejka and Gietel-Basten 2016; Box 6 on Russian Federation).

Over time, spending on families tended to increase or remain stable in most countries, with the largest increases often concentrated on expanding childcare provision and other services (e.g., a huge jump in childcare support in Republic of Korea and notable increases in Austria, Germany and Spain).

These data do not include all the family-related expenditures— such as health provision to children, housing support or the provision of assisted reproduction—but they illustrate well the cross-country differences, broader regional groupings, and trends over time. Going beyond simple regional groupings, Thévenon (2011) employed principle component analysis of OECD data on family support to identify broader clusters of countries with comparable “packages” of family policies. Based on his research and other studies countries and regions can be divided as follows:

- *The Nordic countries*, which provide continuous and strong support for working parents with small children and for fathers’ involvement in care (see Box 9 on Sweden)
- *Anglo-Saxon countries* (United Kingdom, United States, Australia, New Zealand), which mainly provide support especially via cash benefits, especially by targeting low-income families
- *Southern Europe, Japan and Republic of Korea* with more limited policies, shorter period of paid childcare leave, limited cash transfers to families and lower provision of public childcare
- *Continental European countries*, comprising the three predominantly German-speaking countries (Austria, Germany, and Switzerland), Belgium, Luxembourg, the Netherlands, and France, where family support had historically been relatively high, but mostly related to supporting traditional division of labor and providing financial support to families with children. This “conservative” policy model has been revised over time, with a gradual shift towards a stronger support of women’s employment and work-family reconciliation (see Box 10 for Germany). Belgium and France have been at the forefront of this transformation, developing comprehensive public childcare support since the 1960s-1970s (Anttonen and Sipila 1996; Vandebroek 2003; see also Box 9 on France).
- *Central-Eastern European countries* (Czechia, Hungary, Poland, and Slovakia), where family policies have been undergoing reforms and changes in different directions, but policies supporting a combination of motherhood and paid employment remain

relatively underdeveloped. Policies either explicitly support familialism by providing very limited childcare for children below age 3 and creating extensive parental leave programs (Czechia, Hungary; see also Box 5), or providing little support for families at all (Poland and Slovakia) (Javornik, 2014). By contrast, family policies in Slovenia, Estonia, and Lithuania support work and family reconciliation and more extensive early childcare provision (Javornik 2014; Szalewa and Polakowski 2008)

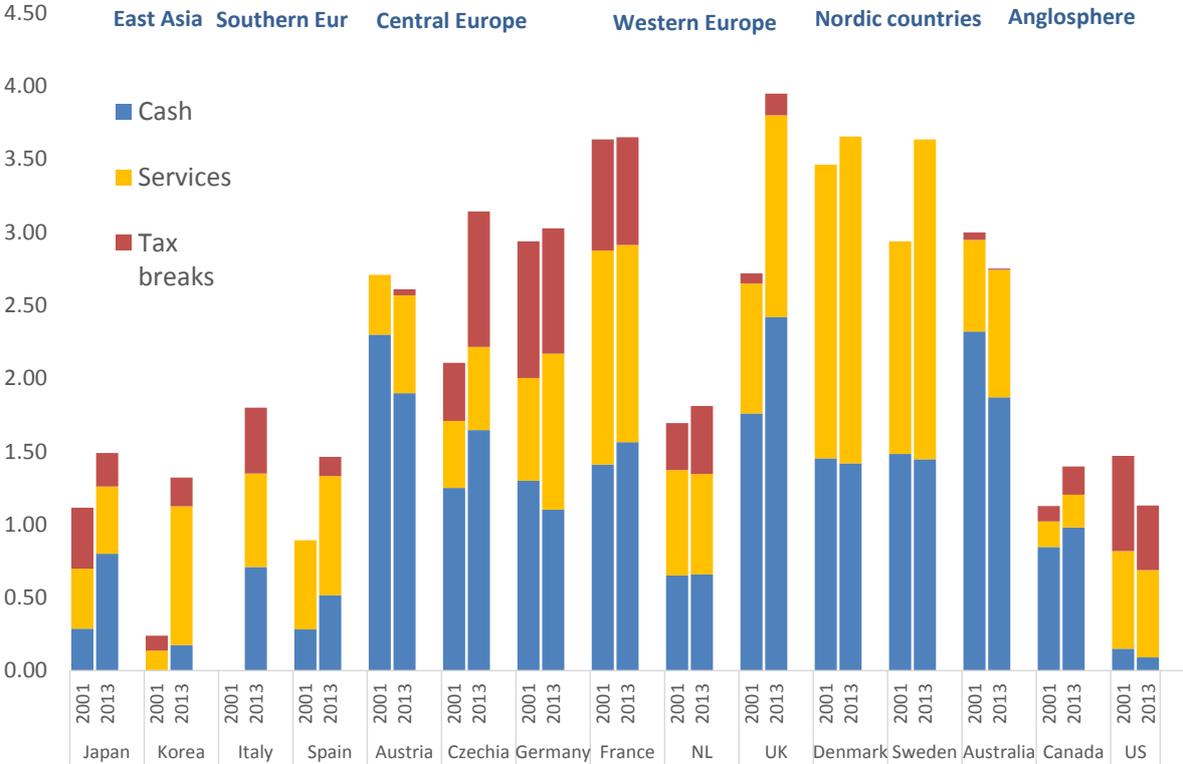
This typology misses many country-specific nuances and it also gives a very limited picture of policy changes over time. With some simplification, time trends in policies across countries can be summarized into three broad categories:

- 1) Major and comprehensive expansion of family policies, which combines a broad array of measures including financial benefits, support for larger families, but also measures supporting childcare provision, mothers' employment and more flexibility in combining work career and parenthood. These major changes are motivated by concerns about low fertility rates and are typical of East Asian countries, especially Japan and Republic of Korea (see Box 7), and to a smaller extent, some Central and Eastern European countries, especially Estonia (see Box 4) and Hungary. Lee (2018) and Adema et al. (2017) document the recent massive expansion of family policies in Republic of Korea, which included an introduction and expansion of family benefits, measures to support employment of mothers and shorter working time as well as the provision of extensive paternity leave for fathers. In Japan, the government has been closely engaged with expanding a broad array of family and pronatalist policies, involving also company schemes and regional and local initiatives (Box 7).
- 2) A shift towards supporting parents' employment and the combination of career and family life. Many countries implemented new policies that address the employment-family conflict among parents, especially mothers. In Germany and to a smaller extent in Austria policy reforms included childcare expansion, better-paid and more flexible parental leave and a support for part-time work among parents (see Boxes 5 and 10). Estonia has established generous parental leave scheme with parental benefit equaling the pre-leave wage (see Box 4).
- 3) Policy expansion centered especially on cash benefits. This trend has been typical of many countries in Central, Eastern and South-eastern Europe, whose governments have embraced pronatalist rhetoric and interventions. The examples include the maternity capital scheme in Russian Federation since 2007 (see Box 6), "Family 500+" scheme in Poland providing tax-free benefit to parents with two or more children since 2016, as well as diverse family-support schemes established in Belarus, Bulgaria, Latvia, Hungary, Russian Federation, and Ukraine. In some countries, including Latvia, the new policies were also aimed at strengthening the "traditional" family and encouraging marriage (Abolina 2015).

Is the level of family support in rich countries correlated with fertility rates? We have examined this question with the OECD data on public spending on families in 2007-2013 and

period fertility indicators for 2014 as well as completed fertility of women born in 1976 (the latest cohort data available). The data show rather close correlation between family spending and each of the fertility indicators analyzed (Figure 8). This correlation was similar for total spending as well as for the more specific spending on services. United States are the main outlier, showing a combination of low spending and relatively high fertility. However, a correlation between changes in the spending on families in 2007-13 and the change in total fertility rates in 2008-14 failed to show a close link, either because fertility rates at that period were affected by the financial crisis, or because the expanded or trimmed family budgets did not affect fertility.

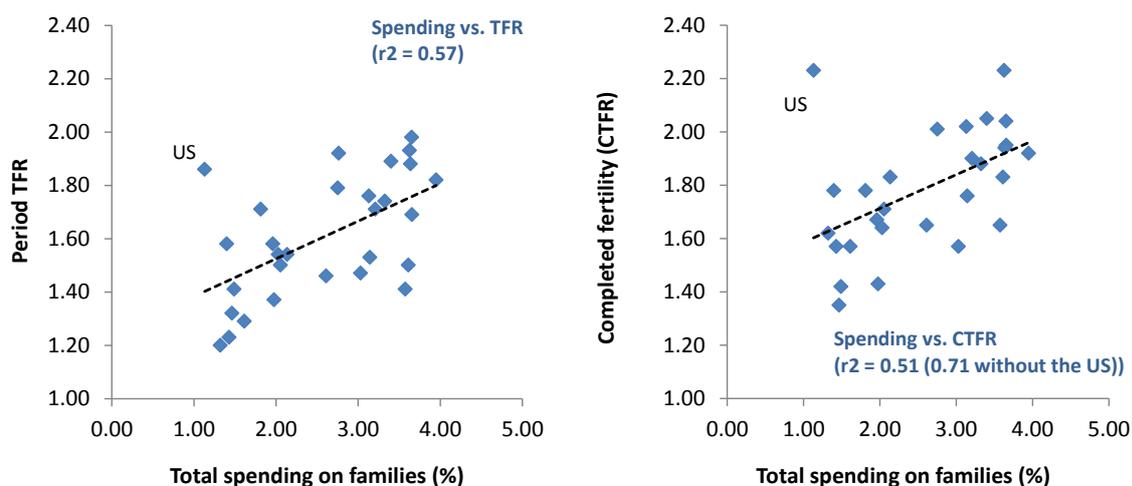
**Figure 7 Government spending on families in selected OECD countries in 2001 and 2013 specified by three main components (in % of country GDP level)**



**Note:** Korea refers to the Republic of Korea, NL to the Netherlands, UK to United Kingdom and US to the United States.

**Source:** OECD Family Database (2019), Table P.F.1.1.A

**Figure 8 Correlation between spending on family policies in 2013, Total Fertility Rate in 2014 and completed fertility rate (CTFR) among women born in 1976**



**Source:** Spending on families: OECD Family Database (OECD 2019), Table P.F.1.1.A; Fertility rates: Human Fertility Database (2019), Eurostat (2019), European Demographic Data Sheet (VID 2018), national statistical offices.

#### 4.2 Childcare coverage, availability and costs

High quality and well accessible public childcare, especially for children below age 3, is crucial from the perspective of supporting work and family reconciliation and children’s development. It is an important policy measure which may support fertility decisions of dual-earner couples.

Empirical evidence shows that accessible childcare services have positive effect on fertility (Baizán 2009; Goldstein et al. 2017; Hilgeman and Butts 2009; Kalwij 2010; Luci-Greulich and Thévenon 2013; Rindfuss et al. 2010; Rindfuss et al. 2007; Rovny 2011). Childcare provision influences not only fertility timing, but also the completed family size. For instance, Luci-Greulich and Thévenon (2013) estimated that a 10 percentage point increase in childcare enrolment in OECD countries would result in an increase in tempo-adjusted TFR by 0.08, which is comparable to the lower estimate of Rindfuss et al. (2010) found for Norway (see Box 2). In another study, Kalwij (2010) found that completed fertility in Western Europe would increase by 0.4% as a result of 10% increase in childcare subsidies. Childcare provision is more likely to influence the fertility behavior of highly educated women, who are more active in the labor market (Baizán et al. 2016; Haan and Wrohlich 2011; Kravdal 1996). Baizán et al. (2016) estimated that an increase in childcare coverage for children aged 0-2 from around 10 percent to 50 per cent in 15 analyzed countries of the European Union would increase the completed family size of highly educated women from slightly above 1.4 to 1.9 births per woman. A similar increase in child coverage would lead to a smaller rise in completed fertility of low-educated women from 1.8 to 2.0 births per woman.

Childcare availability is not the only aspect of care provision that is important for parents and parents-to-be in their fertility decisions. Quality of care, its costs and opening hours are other elements of a “good childcare system”, which may stimulate fertility. Parents will

decide to make use of childcare facilities only if they can be sure that daycare can be beneficial (or at least not harmful) for their children. Ensuring high quality of care is also key for children's development. Several aspects of childcare quality can be assessed: number of children per teacher, group size, education of teachers, curriculum, and safety (Plantenga and Remery 2009). The findings of the PISA survey (Programme of the International School Assessment) conducted in 2015 showed that low children-to-staff ratios in early childcare programs together with generous public expenditures on early childcare are related to children's better performance at school at age 15 (OECD 2017b). Balanced curricula which aim at teaching children new skills through playing and put equal emphasis on various educational activities (development of language skills, numeracy, literacy, creativity, social skills, ICT skills, ethics and citizenship values or increasing awareness of the importance of physical activity and health) are also important aspects of childcare quality (OECD 2017b). Common regulations for all childcare institutions and a national system of quality monitoring can further help to ensure high quality of early childcare and an easy transition to school. Sweden and Norway are important examples of countries which invested in childcare development, putting strong emphasis on care quality. This strategy may explain the exceptionally high childcare enrolment in the two countries and a positive relationship between childcare enrolment and fertility in Norway (Box 2).

The services offered by childcare institutions should be adjusted to parents' diverse needs and situations. For instance, France offers diversity of childcare services which specialize in childcare for children of various ages and needs: crèches for children below age 1, crèches for children aged 1-3, kindergartens for children aged 3-5 and after school care for school-aged children. The care can be provided in traditional daycare centers organized by municipalities, but also in family daycare centers where care is provided by accredited carers, company crèches and kindergartens (usually run by public companies) as well as drop-in centers which provide temporary irregular care for a number of hours (OECD 2006b). Likewise, the opening hours should be adjusted to parents' working hours. The short opening hours of kindergartens in Germany were for a long time enumerated as one of the important barriers to women's full-time labor market participation and a reason for low fertility (Hank and Kreyenfeld 2003).

Childcare costs shouldered by parents vary greatly between countries and are an important aspect of public childcare. Studies show that lowering childcare costs may have positive influence on fertility (DiPrete et al. 2003). Even in Sweden, where childcare is heavily subsidized, the reduction in childcare costs in 2001 led to an increase in the birth rate by 3-5 children per thousand women (i.e., by 4-6 %) during an 18-month period (Mörk et al. 2009).

Expanding childcare system takes time and investment. However, childcare services can be run not only by the state and the municipalities, but also by private enterprises, non-governmental organizations or private institutions. Supporting and subsidizing NGOs and other private institutions providing childcare may be a useful solution especially when public childcare cannot be easily expanded. Such a policy has been, for instance, implemented by the municipality of Vienna (Austria), which subsidizes private and non-governmental childcare facilities and stipulates that they follow the same minimum quality standards as the public institutions. One of the largest recent expansions of childcare took place in

Republic of Korea, where a dynamic increase in childcare provision was enabled by a huge rise in government spending on childcare, jumping from 0.1% of the GDP in 2000 to 0.9% of the GDP in 2014 (Adema et al. 2017). This spurred a rapid growth in the number of facilities, especially those run by private companies and parents' associations which now account for 85% of childcare facilities in the country. As a result, enrollment in childcare between 2005 and 2014 went up from 9% to 36% among children aged 0-2 and from 31% to 91% among children aged 3-5 (Adema et al. 2017).

## **Box 2. Pre-school childcare in Norway: High quality, close-to-full coverage and supporting fertility**

Until 1970 only a handful of Norwegian children attended day-care, with the enrolment rate at 5% for children aged 3-4 and just 1% among toddlers aged 1-2. Since then, however, childcare coverage has grown rapidly: by 1997 60% of children aged between one and five years had been enrolled. In 2016, their enrolment rate reached a high level of 91%. The expansion has been particularly massive among children aged between one and three years, of whom 37% attended a kindergarten in 2000; by 2016 the number jumped to over 80%. In parallel, Norway has enhanced the quality of pre-school childcare.

This rapid expansion of high quality childcare has slowed down fertility decline in Norway in the 1970s-1990s. A simulation by Rindfuss et al. (2010) indicated that women born in 1957-1962 would only give birth to 1.5 children on average by age 35 if childcare availability remained close to zero, as observed in the early 1970s. Their actual completed fertility was above two children per woman, partly thanks to a rapid childcare expansion after 1973. Rindfuss et al's (2010) simulation suggested that a jump in childcare availability gives a considerable boost to fertility, by about 0.10-0.12 children per woman for each 10 % increase (in absolute terms) in availability (Figure 9). Childcare expansion was particularly important for preventing the decline in second and third order births.

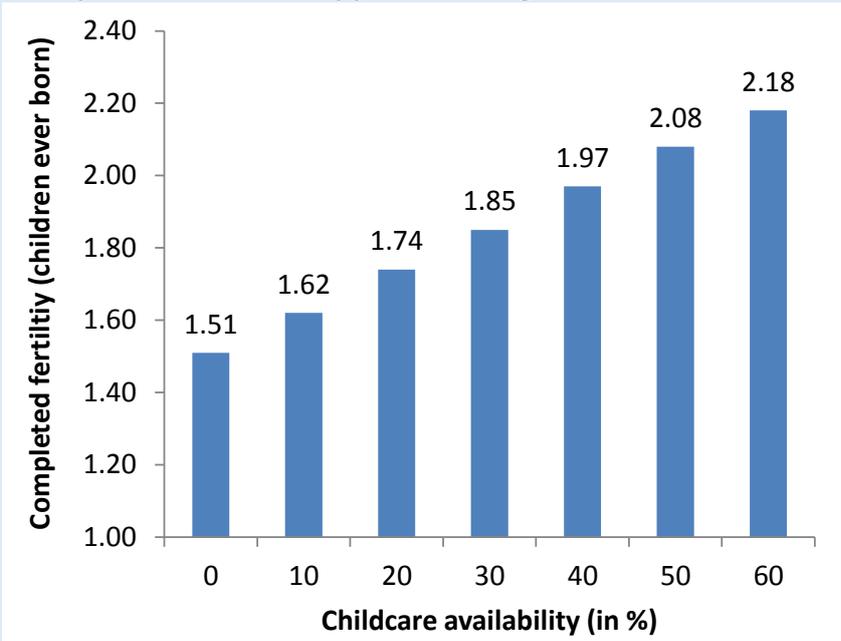
### *A drive to improve both childcare coverage and quality*

In the early 2000s, a broad political consensus was reached in Norway on expanding the quality of childcare. All successive governments worked towards this goal, gradually increasing public expenditure on childcare, which almost doubled between 1998 and 2012, reaching 1.4% of the GDP. The additional financial resources were allocated not only for creating new kindergartens but also for increasing subsidies to the existing day care centers. While in 2000 the government covered just about 55% of kindergartens' operating costs, by 2012 the public involvement grew to 85%. As a result, parental contributions declined substantially, making kindergartens more affordable: childcare fees now constitute about 10% of average salary as compared with an average of 25% for the OECD countries. In addition, low-income families get additional financial support from their municipalities. The political commitment to achieve a full childcare coverage was also affirmed by introducing a legal entitlement to a place in kindergarten for all children from age one in 2009.

Obviously, such a massive expansion of childcare posed tough challenges for the Norwegian government. The first one was to build all the new facilities and to train new staff. The mixed public and private system responded extremely efficiently to the growing demand. In the past, public kindergartens were privileged in getting government funding but with time private facilities proved indispensable for striving towards a full coverage and the subsidies to public and private childcare institutions became almost equal. Easing the shortages of qualified staff was facilitated by staff specialization. Each kindergarten has a head teacher (manager), pedagogical teachers and assistants with only the head teacher and the pedagogical teachers being required to have a three-year tertiary degree focused on kindergarten teachers' education.

The expansion of the childcare system went hand in hand with investments in care quality. Norway has very strong regulations of quality standards, which specify the necessary qualifications of staff, the minimum staff-child ratio or the curriculum. The regulations and standards are regularly monitored and controlled, both internally (self-evaluation and/or peer-review by internal staff) and externally (inspections at the municipal level). The control system focuses on three areas: monitoring service quality, monitoring staff quality and monitoring child development and outcomes.

**Figure 9 Simulated completed fertility (by age 35) among women in Norway born in 1957-62 by level of childcare availability for children aged 0-5**



Source: Table 1 in Rindfuss et al (2010).

This box is based on the following studies: Engel et al. (2017); OECD (1999), Rindfuss et al. (2010), and Statistics Norway (2018).

### 4.3 Parental leave systems

Various types of leave may be claimed by parents of small children. Maternity leave is directed to mothers and is usually short (up to six months), taken around the birth of the child to protect the health of the mother and the child. Paternity leave is granted to fathers, also around the birth of the child, in order to allow fathers to spend time with their newborn children and adjust to their new role. Finally, parental leaves are offered to both parents after the end of their maternity or paternity entitlements. Maternity, paternity and parental leaves are often paid to compensate parents for the time spent out of work. However, countries differ widely with respect to the leave duration and payment entitlements, with some countries offering flat leave benefits while other countries making them dependent on parents’ pre-birth earnings (see Boxes 3-5). Furthermore, parental leave benefits can be universal or they can be conditioned on employment or on meeting specific income criteria.

In theory, parental leave entitlements should be positively related to women’s and couples’ fertility decisions as they allow parents to take a break from work to care for their young

child without having to terminate their employment contract. Parental leave provides a guarantee for parents that they are able to return to their work position, which reduces their uncertainty regarding future employment. Parental leave payment, in addition, compensates for the income lost during the career break. When the leave benefit is also paid to parents who were not employed before the birth, it allows them to take care of their child without a pressure to look for employment or without falling into poverty. However, longer leaves lead to a depreciation of human capital and reduce parents' earnings potential and future promotion opportunities (e.g., OECD 2011; Budig et al. 2012; De Henau et al. 2011; Evertsson and Duvander 2011; Pettit and Hook 2005). These negative consequences of leave programs on parents' employment careers may alter parents' fertility decisions and lead to childbearing postponement; they could also discourage some couples from achieving a desired family size. It is thus important that parental leave reforms take into account the multiple consequences of parental leave programs for partners' fertility decisions, their employment careers and family well-being.

More generous parental leave payments, both in terms of duration as well as payment level, make it easier for couples to have a child. For instance, Matysiak and Szalma (2014) compared fertility behaviors of women in Hungary and Poland, where parental leaves used to be of a similar duration but differed substantially in payment conditions. They found that women in Hungary, who were offered more generous earnings-related parental leave benefits, were more likely to have a second child during the leave than Polish women who tended to return to work more quickly. In Norway, an introduction of a cash-for-care benefit led to an increase in second birth rates (Aassve and Lappegård 2009). The cash-for-care benefit is a flat payment, which allowed parents to prolong their stay at home with children by two years (until the child's third birthday) after the end of the earnings-dependent parental leave. The positive effect of this payment was driven by the low educated women, who were the main beneficiaries of the program. Similar findings were obtained in Finland, where third birth rates were found to be highest among women receiving a flat-rate home-care allowance, granted up to child's third birthday (Vikat, 2004).

It is not clear, however, whether more generous parental leave payments influence mainly the timing of childbearing or whether they also affect completed family size. Few studies which addressed this issue suggest that the effects of parental leave payments on completed fertility are rather small or even insignificant. For instance, Luci-Greulich and Thévenon (2013) estimated that prolonging the fully paid parental leave by 100 days in OECD countries would lead to an increase in the tempo-adjusted TFR by 0.06. At the same time, Kalwij (2010) showed that a 10% increase in maternity and parental leave benefits in Western Europe could reduce childlessness by 3.2%, but would have no effect on completed fertility. No effects of paid parental leave on completed fertility were also found by Baizán et al (2016) for 15 countries of the European Union.

Parental leave reforms should be implemented with caution as changes in parental leave duration and entitlements may cause unexpected shifts in the timing of births. The best known example of such a policy is a prolongation of the parental leave in Sweden from 15 to 24 months in 1980, which motivated many women to have their subsequent child before the end of the parental leave, fueling a temporary baby boom (see Box 3). A similar policy

reform was introduced in Austria in 1990 when the parental leave was prolonged from 12 to 24 months. At that time the right to parental leave was conditioned on a minimum employment period and a woman could regain the right to another parental leave only if she gave birth during the actual parental leave (with a short additional “bridging period”) or after having worked for at least 20 weeks upon returning to work. As it became much more feasible to give birth to the next child during the parental leave after 1990 many women used this opportunity to have their second or third child before resuming employment. The prolongation of the parental leave has clearly reduced second and third birth intervals. It remains debated, however, whether it influenced completed fertility: while Lalive and Zweimueller (2009) found long-term effects of this policy reform on fertility, Štastná and Sobotka (2009) concluded that it did not have any impact on second and third-birth cohort progression rates.

### **Box 3. Swedish ‘speed premium’: a long-term success?**

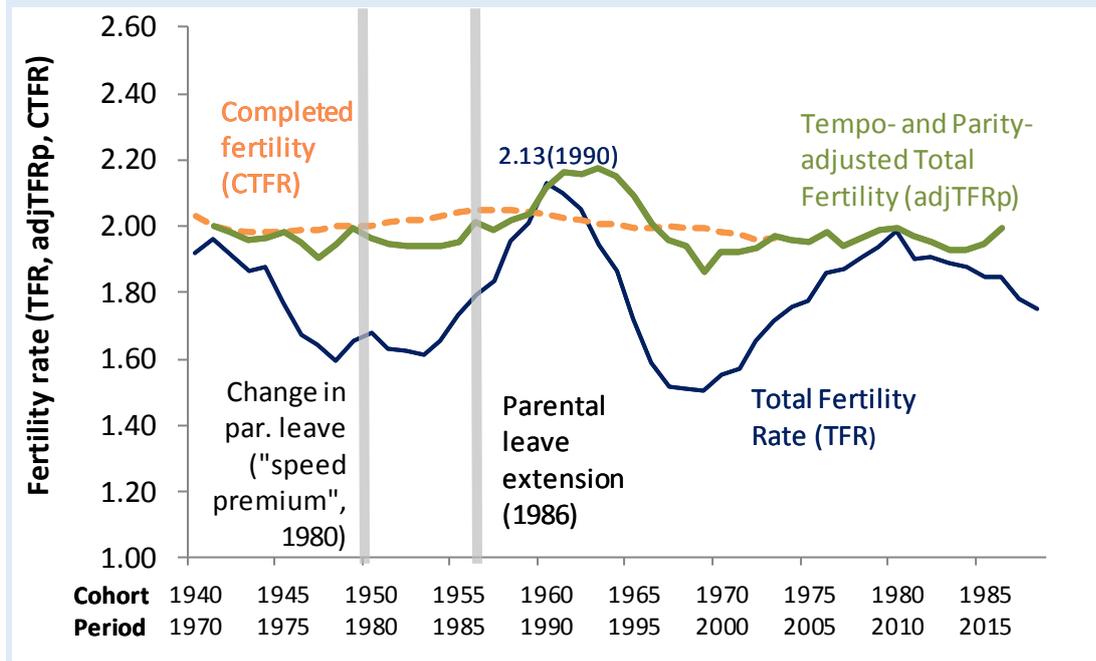
Sweden has a long tradition of paid parental leave, with the leave benefit determined by the parent’s pre-leave earnings. Since 1980 parents on leave were eligible to receive the same leave allowance for their next birth if they had the next child within 24 months. In 1986 the maximum birth interval was extended to 30 months, making it easier for parents to time children closely together and enjoy an uninterrupted leave and identical leave benefits after the next birth.

This ‘speed premium’ (Andersson et al. 2006) contributed to a substantial increase in the parental leave benefit as many parents, especially mothers, previously used to opt for part-time employment after the birth of their first child and earned, correspondingly, a lower salary. Period fertility rates started rising soon after the ‘speed premium’ got established, jumping from 1.61 in 1983 to 2.14 in 1990. Thereafter, fertility plummeted equally fast as it had previously surged; in the late 1990s the TFR hit the level of 1.5 before it bounced up again (see Figure 10).

Was the rise in period TFR driven by tempo effect, brought about by the hastening of the births of children who would have been born anyway? The fertility increases of the 1980s were indeed largely driven by tempo changes, especially by the shortening of birth interval, with relatively steep increases in second birth rates within 30 month of the first birth (Andersson et al. 2006). The Tempo- and Parity-adjusted Total Fertility increased much less (by about 0.2 children per woman) and the completed fertility of women who were in their prime reproductive age at the time the ‘speed premium’ was introduced showed only a tiny change (Figure 10). However, the positive effect of the ‘speed premium’ on fertility was soon exhausted. The 1990s saw a steep fertility decline, which was accelerated by a tempo-effect working in an opposite direction, namely by first birth postponement triggered by an economic downturn.

Swedish fertility trends, often described as ‘roller-coaster’ fertility because of their large fluctuations, are closely related to the business cycles in the country. As parental leave benefit is based on earnings, fertility tends to decline fast in times of economic downturns, when employment rates and earnings plummet, as in the 1990s. In response to worsening labor market prospects, Swedes tended to postpone first and further births until more favorable economic (and financial) conditions. This effect of economic uncertainty also clearly shows the limits of the ‘speed premium’ policy in boosting fertility and reveal the procyclical nature of the effects of Swedish parental leave benefit on fertility. More generally, leave benefits that are linked to the past wage, often tend to accelerate childbearing in the more prosperous times and suppress it in times of economic downturns.

**Figure 10 Total Fertility Rate (TFR), Tempo- and Parity-adjusted Total Fertility (adjTFRp) and completed cohort fertility rate (CTFR) in Sweden in 1970-2018 (and among women born in 1940-74)**



**Notes:** Cohort fertility data are shifted by 30 years, reflecting the mean age at childbearing. A small share of completed fertility at higher childbearing ages (42+) is estimated.

**Sources:** Human Fertility Database (2019), Statistics Sweden (2019) and own computations. Tempo- and Parity-adjusted Total Fertility (adjTFRp) was computed by Kryštof Zeman.

*This box is based on the following studies: Andersson (2004); Andersson et al. (2006), and Neyer and Andersson (2008)*

#### **Box 4. Designing comprehensive, universal and generous parental leave: the case of Estonia**

In Estonia a combination of low fertility and outmigration resulted in substantial population losses during the 1990s and 2000s. Faced with demographic challenges, Estonia has embarked on an ambitious expansion of family policies, which have been modelled on an example of comprehensive policies in the Nordic countries. The key reform was the shift to generously paid parental leave in 2004, when the previous option of a three-year leave with a low compensation for lost income was replaced by parental leave with a benefit amounting to the full salary during the year prior to childbirth (Puur and Klesment 2011, Frejka and Gietel-Basten 2016). Subsequently, the duration of paid leave in Estonia was expanded from 11 months in 2004 to 14 months in 2006 and 18 months in 2008, of which the first 70 days are reserved for the mother. Since 2008 parents who space their births closely together (within 30 months) can retain the same level of leave benefit without returning to the labor market in between (Puur and Klesment 2011), a policy similar to the “speed premium” in Sweden (see Box 3). The maximum leave benefit is rather high, set up at three times the level of average income (i.e., at EUR 3,089 per month in 2018; Pall 2018)

The combination of relatively long leave and full replacement of previous salary in Estonia is even more generous than the leave systems in the Nordic countries, where the leave is either short and with full wage replacement (32 weeks in Denmark and 46 weeks in Norway, up to 9 months in Iceland) or it is longer, but provides a lower compensation amounting to 70-80% of pre-leave wage (Finland, Sweden, longer leave variant in Norway; Blum et al. 2018).

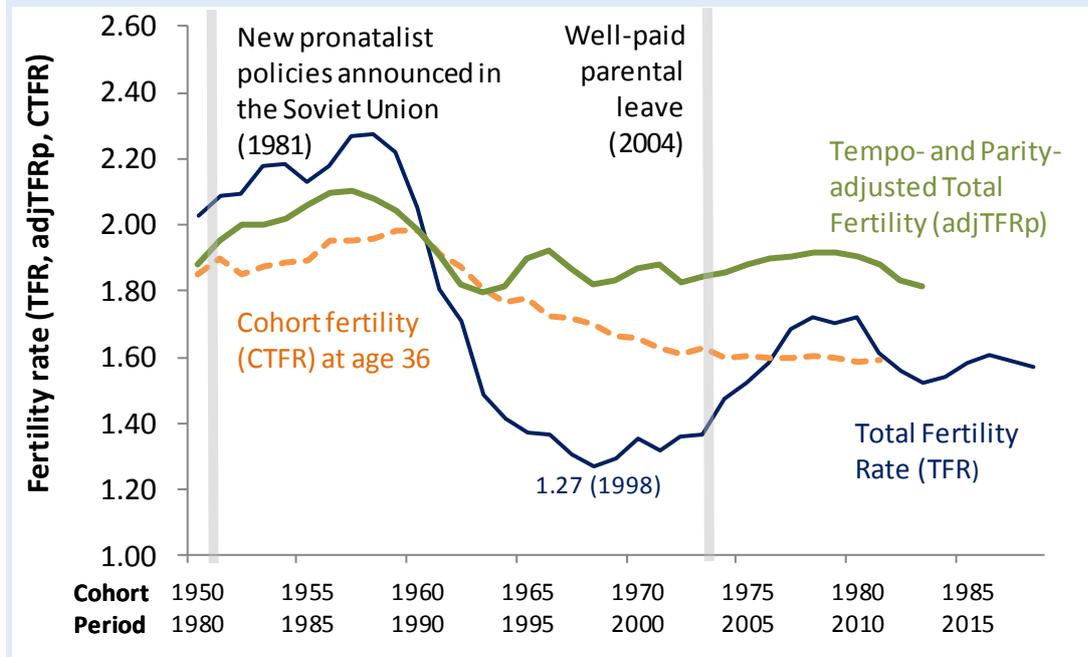
Recent reforms aim to make the Estonian system more flexible, easier to combine with continuing employment and to increase fathers’ involvement in the leave (Biin 2017). Since 2018 parental leave can be taken in one bloc or in several segments up to the child’s third birthday. Parents are allowed to continue being in employment and draw parental benefit after the childbirth, but the benefit gets reduced once the parent’s income exceeds a half of the maximum benefit level (Pall 2018). Next on the government agenda is a shift to a combined parental benefit, which will include a period designated for mothers only, a shared period and a 30-days period designated for fathers only, with the overall benefit period prolonged to 605 calendar days (over 20 months) (Pall 2018, Biin 2017).

Public childcare provision gradually increased as well after dipping in the 1990s (Puur and Klesment 2011; Pöldma 2014). Enrollment in childcare among children aged 0-2 was 28.5% in 2016 (OECD 2019), up from 20.4% in 2000 (UNICEF 2018). The current enrolment level is close to the European Union average and it puts Estonia next to Slovenia at the forefront of early childcare provision in Central and Eastern Europe. As a result of expanding parental leave benefit and increased childcare provision, government spending on cash benefits for families increased fast between 2003 and 2009, from 1.2% to 2.1% of the GDP, before dipping to a lower level.

Period TFR showed a continued increase after the leave expansion: it jumped from 1.37 in 2003 (prior to the first leave expansion) to 1.72 in 2010, declining only after the onset of economic recession in 2010-2013. However, the Tempo- and Parity-adjusted Total Fertility

increased only slightly after 2003 and cohort fertility rates have broadly stabilized (Figure 11). Thus, the expanded family policies have contributed to a halting of the decline in cohort fertility and to its subsequent stabilization, but their contribution to a sustained increase in period fertility appears to be rather modest.

**Figure 11 Total Fertility Rate (TFR), Tempo- and Parity-adjusted Total Fertility (adjTFRp) and completed cohort fertility rate at age 36 (CTFR) in Estonia in 1980-2018 (and among women born in 1950-81)**



**Notes:** Cohort fertility data are computed up to age 36 only and exclude a small portion of childbearing above that age. Cohort fertility is shifted by 30 years.

**Sources:** Human Fertility Database (2019) and own computations. Tempo- and Parity-adjusted Total Fertility (adjTFRp) was computed by Kryštof Zeman.

Overall, evidence on the effects of parental leave provision on fertility is mixed, most likely because these effects depend on numerous factors and leave provisions vary strongly across countries. Although empirical research does not provide a clear evidence on the positive effects of parental leave on fertility, there is a consensus among family scholars that paid parental leave is needed to bridge the time between the birth and the child's entry into daycare system and to allow parents to interrupt employment without having to terminate their employment contract (Billingsley and Ferrarini 2014; Ruhm 2000; Thévenon and Solaz 2014). There is no broad agreement on optimal duration of the parental leave, as longer leaves might be preferred by some parents, but at the same time negatively affect women's employment. In reality, the optimal leave length depends on many factors, such as the type of occupation, position at the workplace, possibility to work part-time, external childcare opportunities, including care by grandparents, and personal preferences. For this reason countries are increasingly introducing flexible parental leave schemes which offer multiple leave durations (and which also differ in benefit levels), allow parents to take leave in blocks or combine it with part-time work (Boxes 4 and 5). Multi-choice parental leaves make it

possible for parents to choose the option which is best suited for them. For instance, a relatively short parental leave with an earnings-dependent benefit is probably most convenient for working parents who do not want or cannot take long career breaks, while longer leaves paid at lower rates (often as flat-rate payments) are better suited for parents who prefer to stay longer at home with their small children or do not have access to daycare facilities or other childcare support (e.g. from relatives).

### Box 5. Flexibility in parental leave use

Family policy has been catching up with increasingly flexible family and work life. Parental leave schemes are a good example of such efforts. Parents are not only encouraged to share the care for their offspring, but are also allowed to do so in a more flexible manner. Increasingly countries are introducing parental leave schemes which allow parents to choose between a shorter parental leave with a higher benefit and longer parental leave with lower payment, either flat rate or income-dependent. Such schemes allow parents to decide to choose the parental leave option which is best suitable to their work conditions, availability of external childcare or personal preferences. For instance, parents in **Czechia** receive leave allowance of CZK 220,000 (EUR 8,500 in 2019 exchange rate; to be increased to CZK 300,000 or EUR 11,600 from 2020) that can be distributed in monthly instalments during their parental leave over the period of 7 to 48 months (the longer the leave, the lower the monthly payment, with the maximum payment amounting to their pre-leave wage or to CZK 32,640). They are entitled to the benefit even when they continue working, with the only condition that they are considered the main carers for the child (if their child is below 2 years old they cannot use public childcare for more than 46 hours per month). Both parents can take parental leave simultaneously, but only one is entitled to receive the benefit at any time. There are no restrictions on the number of times parents can alternate in receiving the payment. Alternatively, parents can take 12-month parental leave with income-dependent benefit paid at 70% of their daily earning (but not more than EUR 1,400 per month).

A similar leave system has been introduced in neighboring **Austria**. Parents can draw a total benefit of around EUR 15,500 over the period of 456 to 1063 days (which corresponds to 14 and 35 months, respectively). The leave regulations provide an incentive for both parents to share the leave in order to boost the participation of fathers. If each of the parents does not take at least 61 days of leave, the total amount of leave benefit is reduced to EUR 12,400 to be used for between 365 and 851 days (i.e. between 12 and 28 months). When receiving the benefit, each year parents can earn up to EUR 16,200 or 60% of their last yearly income. They can also chose to take income-dependent parental leave for 12 months (14 months if each parent takes at least 2 months of leave) amounting 80% of the last net income (up to the ceiling of EUR 2,000). Parents who share the parental leave can alternate twice (thus, the leave can be taken in maximum three blocks, each lasting at least two months) and they cannot take it simultaneously except for one month the first time they alternate. If they share the leave about equally (at least in a proportion of 60:40 or more equal), each parent is additionally entitled to receive the so called 'partnership bonus' (*Partnerschaftsbonus*) of EUR 1,000.

**Germany** has a similar scheme, but in addition it offers a possibility of returning to part-time employment during the parental leave and keeping the right to part-time parental leave benefit. This is possible up to the child's second birthday. Parents, who return to the labor market, but work only part-time, receive a 65% compensation of their lost income. **Finland** and **Norway**, where maternity and parental leave benefits are paid for about one year and are strongly income dependent, offer in addition flat-rate cash payments to parents who wish to stay longer at home with their child (e.g. cash-for-care scheme in Norway up to the child's second birthday and home care leave in Finland up to the child's third birthday). By

comparison, parental leave system in **Sweden** allows huge time flexibility for the parents. Each parent is eligible to use 240 days of parental leave benefit (195 days are earning-related at 77% of their wage, 45 days are paid at a flat rate) that can be divided in many blocks a full-time, half-time, quarter-time or one-eighth time basis up to child's 12<sup>th</sup> birthday (Duvander and Haas 2018).

This box is mainly based on the following report and its country-specific chapters: International Network of Leave Policies. 2018. 14<sup>th</sup> *International Review of Leave Policies and Related Research* (Blum et al. 2018).

Parental leaves should be well aligned with the provision of public childcare to provide continuity in public support for parents with young children. In other words, a parent who finishes the parental leave and returns to work should have a possibility to make use of a daycare system. Sweden is an excellent example where the two systems are well aligned. It offers a system of well-paid and extremely flexible parental leave with regard to both parents' participation, length of leave, leave segmenting over the child's life, level of employment during the leave, and the possibility to use the leave days up until the child's 12 birthday (see Boxes 3 and 9, Gunnarsson et al. 1999; Duvander and Haas 2018). A counterexample is Italy. The country provides accessible full-time childcare for children aged 3 and older, but has very limited childcare provision for younger children. At the same time, each parent is granted only six months of parental leave. This implies that many parents of children aged 0-2 have to either rely on grandparents or pursue costly private childcare options (usually childminders and nannies) or terminate their employment. Young Italians who want to (or have to) continue their employment may thus be inclined to postpone childbearing until their grandparents retire or until they reach a good financial standing to afford private childcare.

#### *4.4 Supporting shared parental leave among both parents*

Parental leave schemes had initially been directed to mothers. There is a growing tendency to encourage both parents to share the leave. This reduces the opportunity costs of parenting experienced by mothers and thus also encourages them to have larger families. Furthermore, an introduction of parental leave programs directed to fathers aims at allowing men to take a break from work and establish a stronger bond with their children from an early age. The first step in this direction was to allow both women and men to make use of the parental leave. Such a seemingly gender neutral policy had almost no impact on leave uptake among fathers as it was introduced at a time when women were considered the main care providers and men the breadwinners (Brandth and Kvande 2009). The second step was to introduce individualized parental leave rights which cannot be transferred to the partner ("use it or lose it" schemes). Nordic countries pioneered an introduction of such individualized parental leave schemes in the mid-1990s which brought a substantial increase in leave uptake among men. In Sweden, where currently 90 days of parental leave are reserved for fathers, men account for 45% of parental leave recipients. They still take considerably fewer days of parental leave than mothers (26% of total days taken), but a clear upward trend in fathers' leave uptake is observed (in 2000 the proportion of total leave days taken by fathers was 14%) (OECD 2019). Parental leave use among fathers has also been

rising in other countries, which have introduced incentives for men's leave participation in the last two decades (see also the example of Austria in Box 5 and Germany in Box 10). These incentives either involved non-transferable parental leave rights for each parent or additional leave months which are granted when both parents make use of the leave. According to the OECD data, the proportion of men among parental leave recipients slightly exceeds 30% in Denmark, Germany, Belgium and Portugal (OECD 2019).

Empirical evidence on the influence of the introduction of parental leave entitlements on fertility is still scarce and the amount of the leave taken by men still probably too short to make a difference. Nonetheless, studies from the Nordic countries show that fathers who took parental leave are more involved in childcare after returning to work (Duvander and Jans 2009; Haas and Hwang 2008) and couples who shared parental leave are more likely to have a second child (or have it sooner) (Duvander and Andersson 2006; Duvander et al. 2010). It should be noted, however, that fathers who took the leave may be more family oriented, which may lead to an overestimation of the effect of parental leave use in these studies.<sup>8</sup>

#### *4.5 Financial incentives*

Financial transfers are designed to support families with dependents, including children. They may be granted to reduce the risk of poverty, to offset some of the costs related to children, to improve the financial standing of the household and to create better life conditions for children. As they reduce the direct costs of children they are also perceived as a family policy measure which may help parents to realize their fertility desires.

Families receive different types of financial transfers. Family benefits, tax exemptions and tax credits are provided on a regular basis, while "baby bonuses," birth grants and other transfers are paid as a lump sum. Tax credits, which are direct reductions to taxes, and family allowances are usually aimed to benefit lower-income families, in particular if they are conditioned on income. Tax exemptions, which lower the tax base, provide higher benefits at higher tax rates and thus are more beneficial for employed parents with above-average income.

Most empirical research finds that regular cash transfers have small but positive effects on period fertility. For instance, Azmat and González (2010) estimated that an introduction of the additional tax credit for working mothers with children below age 3 and an increase in tax deductions for families in Spain led to an increase in a birth probability by 3 births per thousand women (i.e., by 5%). Similar effects were observed in Argentina after the government launched in 2009 a national anti-poverty program which provided monthly cash transfers to unemployed parents at around 13% of the minimum wage (Garganta et al. 2017). In Hungary, a 1 percent increase in child-related benefits was assessed to increase

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<sup>8</sup> A stronger participation of fathers in paternity leave and parental leave could also have a detrimental effect on fertility if it makes women more strongly engaged in their career or if the fathers become more aware of the opportunity costs of childrearing. This has been suggested by Farré and Gonzales (2019) who reported that fathers' increasing involvement in childcare after the introduction of two weeks of paid paternity leave in Spain in 2007 resulted in a slightly stronger labor force participation of mothers and coincided with a lower desire for another birth among men in the subsequent period.

period total fertility by 0.2% (Gábos et al. 2009). In Israel, a reduction of monthly child subsidy after 2003, which was especially strong for third and higher-order births, was associated with a reduction in childbearing propensity across all population subgroups, including women aged 35+ (Cohen et al. 2017).

Few studies verified, however, whether cash transfers had a long-term influence on fertility, encouraging women and men to have children they would not have otherwise. Research which addressed this issue shows that the long-term effects are typically small (if any). This suggests that cash transfers usually encourage people to have children earlier, but rarely to have larger families. In their study on 18 OECD countries Luci-Greulich and Thévenon (2013) estimated that an increase in the expenditures on cash benefits as a share of GDP per capita by 1 percentage point would lead to an increase in the tempo-adjusted TFR by 0.02. At the same time, Kalwij (2010) found no effect of cash transfers on completed fertility in Western Europe and Baizán et al (2016) reported a positive effect only for the highly educated. Brewer et al. (2012) evaluated the effects of the welfare reform in the UK which introduced a working family tax credit and increased the means-tested financial support for jobless families, resulting in a 50% increase in per-child expenditures. The reform led to an increase in fertility, which was significant only in the year after the reform, suggesting that the reform influenced mainly the tempo of fertility.

Apart from regular cash transfers governments may offer “baby bonuses”, paid around the birth of the child. Small lump-sum payments of this type are unlikely to influence fertility behavior on a large scale. In the past, some countries had, however, introduced generous baby bonuses. These programs brought some increases in completed fertility, but at very high financial costs and usually did not last long: the schemes in Australia, Quebec, and Spain were eventually stopped. They also led to strong shifts in the timing of births. The Allowance for Newborn Children (ANC) introduced in Quebec (Canada) in 1988 offered a one-time payment of C\$500 (over 400 US Dollars at that time) at first and second birth and 8 quarterly payments of C\$375 for the third and higher order births. These amounts were increased in subsequent years and in 1997, when the program was terminated, parents received C\$500 after the first birth, C\$1000 in total (paid in two installments) after the second birth and C\$8000 in total (paid in 20 quarterly installments) for the third and higher order birth. The program had a substantial effect on fertility, with strongest effects on higher order births. Milligan (2005) estimated that period fertility increased by 12% overall and the third or higher fertility by 25%. The ANC also had a positive impact on completed fertility. The program was, however, expensive: it cost C\$1.4 billion over 8 years which means that the Quebec government spent around C\$15,472 (or an equivalent of C\$ 25,000 today) for each child who would not have been born if the program had not been implemented (Milligan, 2002).

In Australia, a similar baby bonus scheme was established in 2004, shortly after the period fertility in the country reached record-low level, and scrapped ten years later, in 2014. It offered a one-off payment of A\$ 3,000 (around US \$ 2,200 at that time), increased to A\$ 4,000 in 2006 and A\$ 5,000 in 2008. Drago et al. (2011) estimated the baby bonus had a small significant effect on both birth intentions and birth rates, increasing the birth rate by about 3.2% and implying a marginal cost of an additional child at A\$ 126,000 (over US \$

90,000). Another study, by Parr and Guest (2011), found no effects of the program at all. Moreover, the experience of Australia shows that the introduction of baby bonuses and similar schemes may also have some unexpected and rather negative consequences. In Australia, where the baby bonus was implemented shortly after it was announced, around 4-6% of births, which should have occurred in June, were moved to early July (Gans and Leigh 2009). The majority of births were shifted by postponing the cesarean sections or induction procedures, which might have had consequences for the health of the newborns. It might have also influenced the functioning of the hospitals.

A generous system of financial transfers to mothers of second or later births, “maternity capital,” has been established in Russian Federation since 2007. Its design, changes over time and fertility effects are summarized in Box 6.

Experience of other countries and regions which introduced similar, but less generous, pronatalist programs, shows that the policies may influence the childbearing of some social groups—especially the poorer and lower educated ones—for instance by discouraging them from terminating pregnancies (see also the evidence on Russian Federation in Box 6). This may even lead to some increases in completed fertility, but the overall effects of the policies were shown to be small. Such an observation was made in the North-Eastern Italian region of Friuli-Venezia Giulia in years 2000-03 when the provincial government introduced a baby bonus of EUR 3,000 for second births and EUR 4,600 for third and higher order births (Bocuzzo et al. 2008). The bonus was paid only to women whose income was below a certain income threshold. The number of births in this period increased by 2-3%, and the increase was concentrated mainly among the low educated women with two or more children. At the same time, the abortion rate declined strongly. Similar findings were obtained for Spain which had introduced a short-lived baby bonus of EUR 2,500 in 2007 (González, 2013).

Overall, financial transfers may support individuals in their childbearing decisions, but their impact on completed fertility is rather small. This is due to the fact that financial transfers, even when generous, cover only a small proportion of the costs of children. Furthermore, the effects of financial transfers usually have the biggest influence on fertility of the low educated, low-income or jobless for whom public transfers are of higher value. Generous monetary incentives, which are directed to low as well as high-income households, may bring larger results, but also imply very high costs.

### **Box 6. “Maternity capital” and fertility in Russian Federation**

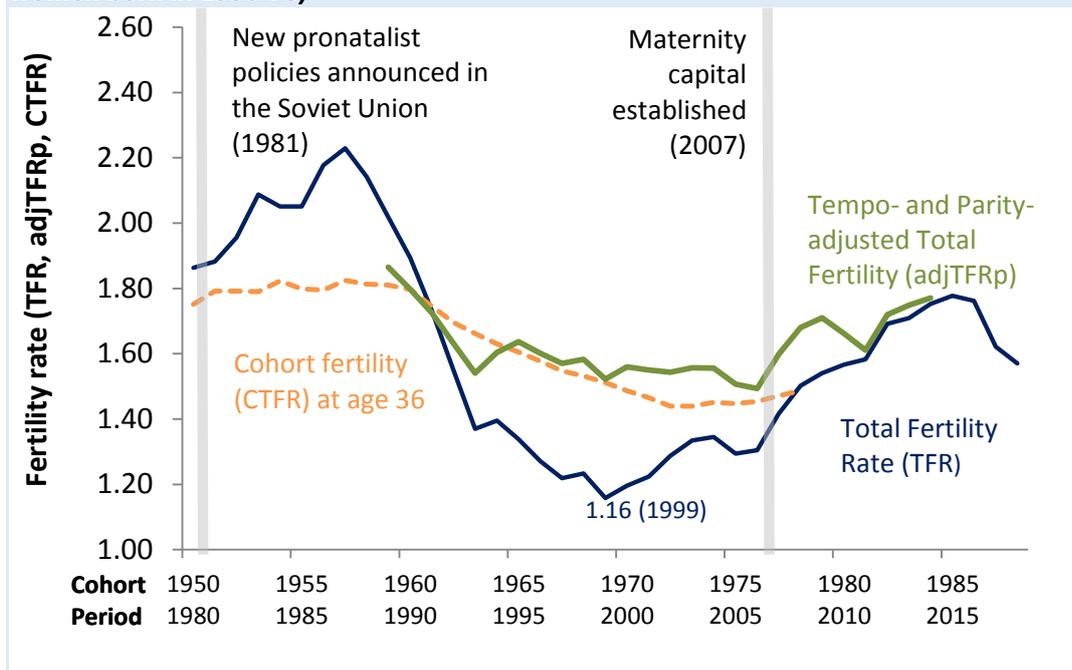
Russian Federation introduced explicitly pronatalist policies since January 2007 through a 2006 Federal Law *On Additional Measures of State Support of Families with Children* (Russian Presidential Academy 2015). As many Russian women had only one child (Figure 3 above) and one-child families became normatively accepted in the country, the policies specifically aimed to stimulate second and third births. The main policy pillar was an establishment of “maternity capital” (or “maternal capital”), one-off cashless benefit administered by the Pension Fund of the Russian Federation, transferred to the mothers of a second, third, or later child (only one payment can be transferred to each mother, irrespective of the number of children she has). The benefit can be used for specific purposes, such as housing purchase and renovation, mortgage repayment, child’s education, but also as a contribution towards mother’s pension (Pension Fund of the Russian Federation 2019). The scheme was supposed to be temporary, lasting until 2016, but has been extended. The initial amount of the benefit was set up at RUB 250,000; its current value, since 2015, has been fixed at RUB 453,000 (US \$ 6,900 with the exchange rate in April 2019). The scheme has been quite popular as it is partly addressing financial and housing difficulties faced by many families in Russian Federation. Over time it has been supplemented with many regional schemes, typically aiming to offer a specific payment for the children not covered by the federal scheme, most often to the third births (Chapter 8 in Zakharov 2018). These regional maternity capital schemes vary in size and scope and serve as interesting policy experiments.

The policy introduction coincided with the subsequent increase in the period TFR, from 1.28 in 2006 to a peak of 1.79 in 2016 (Figure 12). Much of this increase was, however, caused by shifts in fertility timing as parents decided to have their children earlier and make use of the programme before it might get terminated (Elizarov and Levin 2015; Frejka and Zakharov 2013). Nonetheless, the tempo-adjusted period fertility also went up during the six years after the policy was introduced, and the increase was especially strong for the second and third births: the Tempo- and Parity-adjusted Total Fertility (adjTFRp) increased by 0.21 between 2006 and 2012 (Figures 12 and 13). The policy also succeeded in stopping and even slightly reversing the decline in cohort fertility, which was taking place among women born since 1957.

The evaluation of the fertility effects of the maternal capital scheme differ considerably. Biryukova et al. (2016) reported statistically significant increase in the probability of second and subsequent births between September 2007 and Summer 2011 after controlling for demographic and socioeconomic factors. Slonimczyk and Yurko (2014) estimated that the introduction of the maternal capital led to an increase in average family size by 0.15, taking into account changes in economic conditions. Elizarov and Levin (2015) concluded that the policy “achieved its objective” through increasing second and third births rates among women past age 30. The report by the Russian Presidential Academy (2015) reported a large jump in the monthly data of births in mid-2007, concomitant with the expected effect of the new policy, and suggested that one of the key effects of the policy was to reduce the number of abortions as more women decided to carry their pregnancy to term. In contrast, several studies reported very small if any impact (e.g., Zakharov 2016). Miljkovic and Glazyrina (2015) applied econometric fixed-effects model working with fertility data for

seven broad federal regions in Russian Federation and concluded that the policy stipulated a significant but minor increase in the TFR by 0.04. Frejka and Zakharov (2013), working with cohort data concluded that the main effect of the policy has been to lower the age at childbearing and to shorten birth intervals, thus raising period fertility but not the completed cohort fertility. The policy had differentiated impact by social status and influenced especially fertility of families with low income (Biryukova et al. 2016; Slonimczyk and Yurko 2014).

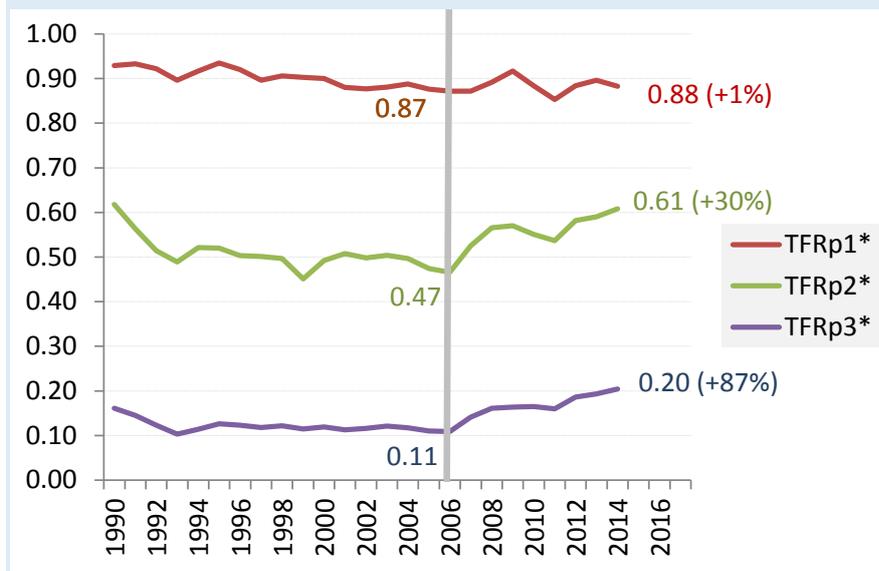
**Figure 12 Total Fertility Rate (TFR), Tempo- and Parity-adjusted Total Fertility (adjTFRp) and completed cohort fertility rate at age 36 (CTFR) in Russian Federation in 1980-2018 (and among women born in 1950-78)**



**Notes:** Cohort fertility data are computed up to age 36 only and exclude a small portion of childbearing above that age. Cohort fertility is shifted by 30 years, reflecting the mean age at having a third birth among the women born in the 1950s-1970s.

**Sources:** Human Fertility Database (2019), Zakharov (2018, Chapter 7), Rosstat (2019) and own computations. Tempo- and Parity-adjusted Total Fertility (adjTFRp) was computed by Kryštof Zeman.

**Figure 13 Tempo- and Parity-adjusted Total Fertility (adjTFRp) by birth order in Russian Federation in 1990-2014**



**Source:** Human Fertility Database (2019). Tempo- and Parity-adjusted Total Fertility (adjTFRp) was computed by Kryštof Zeman.

#### 4.6 Labor market conditions

Partners' fertility decisions are not only influenced by family policies, but also by the labor market policies and conditions. There are two main pathways how labor market affects fertility. First, the availability and stability of jobs matter: for both women and men it is important to have a job to accumulate resources before parenthood and to support their family and children later in life. Countries with high unemployment and high instability of employment contracts have lower fertility (Adserà 2004 and 2011; Comolli 2017; see also Section 2.2). Second, it is important for the parents to be able to combine employment with family life. Reconciliation policies, such as childcare provision and parental leave entitlements, should be of help, but they may be less successful in countries with the culture of rigid work patterns and long working hours, especially in East Asia (see Box 7 on Japan and Republic of Korea and Section 2.2 above).

The possibility to work part-time when children are small makes it easier for many parents to keep a job and provide care for their small child. In that respect part-time employment can ease partners' fertility decisions. Some studies indeed found a positive effect of part-time jobs on fertility, in particular among highly educated women (Baizán et al. 2016; D'Addio and d'Ercole 2005). However, the type and quality of part-time work matters a lot: part-time employment will not stimulate fertility if it is of worse quality than full-time employment in terms of job protection, social benefits or hourly earnings (Del Boca and Pasqua 2005; McDonald and Belanger 2016). Part-time employment is also less likely to bring positive effects on fertility in countries with rigid and highly segmented labor markets in which it is difficult to switch into full-time employment after an episode of part-time work. Moreover, reducing working hours may not be a desirable option in countries in which having two full-time salaries is an important pre-condition for family formation among the couples, as has been the case in Central and Eastern Europe after the fall of the state-socialist political

system in the region (Cipollone et al. 2014; Hobson et al. 2011; Kanjuo-Mrčela and Cernigoj Sadar 2011).

Work flexibility can be achieved not only through part-time employment but also by granting parents more control over their working lives. The possibility to adjust working hours to family obligations reduces work–family conflict (Byron 2005; Hill et al. 2010) and has a positive influence on partners' fertility intentions (Begall and Mills 2011; Harknett et al. 2014). Higher flexibility in working hours is increasingly possible due to the spread of the new information and communication technologies which allow employees working from home and beyond the standard working hours, although it may also prolong the working time. Furthermore, companies may introduce flexible working schedules, such as flexitime (which allows employees to set the starting and ending time and the number of working hours in a week beyond the core hours established by the employer) or working time banking (a system of recording the working hours which allows to accumulate more working hours in some time periods and work less in others) (Plantenga and Remery 2010).

The opportunities to work part-time are often discussed from the perspective of allowing women to reduce the working hours in order to combine paid work and care. Recently, it has been increasingly pointed out that men's absorption in paid work and men's long working hours can also be detrimental for fertility as they make it difficult for men to participate in childcare (Hook 2010; Thébaud 2010) and push women out of employment (Cha 2010 and 2013). In a study covering 15 European Union countries and Norway Baizán et al. (2016) found that men's long working hours have a negative effect on completed fertility of medium and highly educated couples. This negative influence is particularly large for the highly educated women: the authors estimated their completed fertility at 1.8 in countries where men work on average 38 hours per week and around 1.45 in countries where men work 45 hours on average. Strengthening working time regulations in order to reduce overtime, shorten the working hours and introduce more flexible working time for men (and not only for women) may thus make it easier for couples to have children, in particular in the long working hours cultures.

### **Box 7. The strong push for family policies with ambiguous fertility impact: the case of Japan and Republic of Korea**

Japan is the first larger country in Asia that experienced rapid modernization, industrialization and education expansion after the World War II. These forces catapulted it to becoming one of the most economically developed countries globally, reaching the highest GDP per capita among larger countries in 1990, before experiencing protracted economic stagnation (“the lost years”) during the 1990s. As Japanese economy developed, fertility rates tumbled, earlier and faster than in any other country in Asia and, indeed, than in most other rich countries. The period TFR had briefly dipped below 2 children per woman in the early 1960s, later falling permanently below this threshold in the mid-1970s. Subsequently, fertility decline slowed down, but fertility rates continued sliding gradually, with the TFR falling below 1.5 in mid-1990s and temporarily reaching a “lowest-low” level below 1.3 in 2002-2005 (Figures 14 and 15).

The decline in fertility brought serious concerns due to the rapidly progressing population ageing (Japan has, together with Germany, the highest median age of the population globally, over 47 years), the challenges of caring for the expanding population of the elderly, shrinking labor force, and the imminent population decline. These challenges are particularly severe in Japan (and other East Asian countries) because of low immigration rates. These concerns fueled long-lasting and intensive efforts to develop policies supporting families, marriage and childbearing (Matsukura et al. 2007). Since the early 1990s, a wide range of policy initiatives and programs have been implemented and expanded over time. This expansion has brought about a departure from the traditional male-breadwinner support to families, largely based on cash benefits and tax reductions, towards a wide range of different policy measures typical of many economically developed countries today. This expansion was also mirrored in the total spending on families which almost quadrupled from 0.36% of the country’s GDP in 1990-91 to 1.31% in 2015 (OECD Family Database; OECD 2019), while still remaining below the OECD average of 1.97%.

One set of policy programs expanding over time relates to childcare provision: starting with the Angel Plan of 1994 numerous plans and initiatives aimed to expand childcare provision, support creation of new nursery centers and company-base childcare programs, reduce the number of children on waiting lists, reduce childcare costs to parents, and support after-school care programs (Matsukura et al. 2007; Tsuya 2015, Cabinet Office, Government of Japan 2018). At present the enrollment in public childcare still remains below the OECD average for small children aged 0-2 (22.5% against 33.2% in 2016), but surpasses it for 3-years old. Parental leave in Japan has been established in 1992 with a duration of 12 months and without income compensation; since 1995 the leave has been paid, with the rules repeatedly amended and the level of compensation and leave flexibility generally increased. At present, the leave compensation amounts to 50% of monthly wage prior to the leave. Different policies aim to increase men’s participation in the leave and their involvement with childcare. Since 2010 the leave period has been extended to 14 months if both partners participate in the leave. However, very few Japanese men take the leave (in 2016 the use of childcare leave was 3.1% among men (Cabinet Office, Government of Japan 2018)) and employees with part-time contracts, limited working days and those who have been

employed for less than 12 months are not eligible for the leave, which may constitute an important barrier to subsequent childbearing for mothers who decided to reduce working time after the birth of the first child. Moreover, there is no legal sanction against non-compliance from the employers. A number of smaller businesses still do not have specific rules on parental leave, which might restrict the leave use for their employees (Tsuya 2015).

Other family policy measures in place include child benefits, which have been expanded since 2000, and a host of less conventional measures and policies. Many new initiatives have been developed since 2016, when the “Plan for Dynamic Engagement of All Citizens” has been approved by the government, which includes measures and plans to tackle declining birth rates and aging population, including the aim to achieve “desirable fertility rate” of 1.8 children per woman (Cabinet Office, Government of Japan 2018: Chapter 2). The plan set in force “work style reforms” to improve work conditions of irregular workers and to limit work hours of employees (with excessive work time being a long-term issue in Japan).<sup>9</sup> It also stipulated efforts to promote marriage (especially the schemes implemented by companies, towns and regions), measures to expand childcare provision and to provide childcare and higher education free of charge, reforms to increase mothers’ employment and men’s involvement in childcare as well as measures to create “childrearing friendly society”, which often encourage specific regional and company initiatives (Cabinet Office, Government of Japan 2018).

Since the expansion of family policy in Japan has been stretched over the last three decades, it is difficult to pinpoint specific policy turning points besides the general shift towards policy expansion starting in 1990 and the range of recent initiatives beginning in 2016. The assessment of the policy effects on fertility gives mixed results. On the face of things, Japan’s family policies appear to be largely ineffective in supporting fertility: period total fertility rate remains low (1.43 in 2018), completed fertility is among the lowest globally (Figure 2), childlessness, at 28%, is the highest globally after Hong Kong SAR (Sobotka 2019), number of live births reported in 2018 (estimated at 921 thousand) is record low and the goal of reaching desired family size of 1.8 seems as far away as ever. However, these seemingly dismal numbers can also be presented in a different light: the period TFR has recovered from a record low of 1.26 in 2005, the completed cohort fertility has stopped falling and childlessness has broadly stabilized (Figure 14).

Most important, fertility in Japan, until 1980 the lowest in Asia, has stayed above fertility rates of other rich countries and territories of East- and South-eastern Asia since 2006 (Figure 15). By comparison, Singapore, Hong Kong SAR, Republic of Korea, and Taiwan Province of China experienced further fertility declines, reaching the world lowest TFR levels between 0.98 and 1.14 in 2018 (these levels are the lowest or near their record-lows in each country). The trend to “ultra-low” fertility rate is most striking in the Republic of Korea which has, similar to Japan, implemented ambitious family policy reforms, including expansion of childcare provision, longer and better-paid parental leave as well as efforts to curb excessive working hours (Adema et al. 2017; Lee 2018; Ministry of Health and Welfare 2015). Up to

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<sup>9</sup> As a part of the effort to curb notorious overwork culture in Japan a new labor reform coming in force since April 1, 2019, limits overtime work for the employees of larger companies to 45 hours per month (Japan Times 2019).

now, these reforms did not have any perceptible effect on fertility rate and the TFR plunged to a record low of 0.98 in 2018, the lowest level globally.<sup>10</sup> It is too early to give a clear assessment of the long-term effect of family policies in Republic of Korea. Fertility reaction to various policy reforms in the country could emerge with a time lag and may yet fuel a gradual fertility increase in the future.

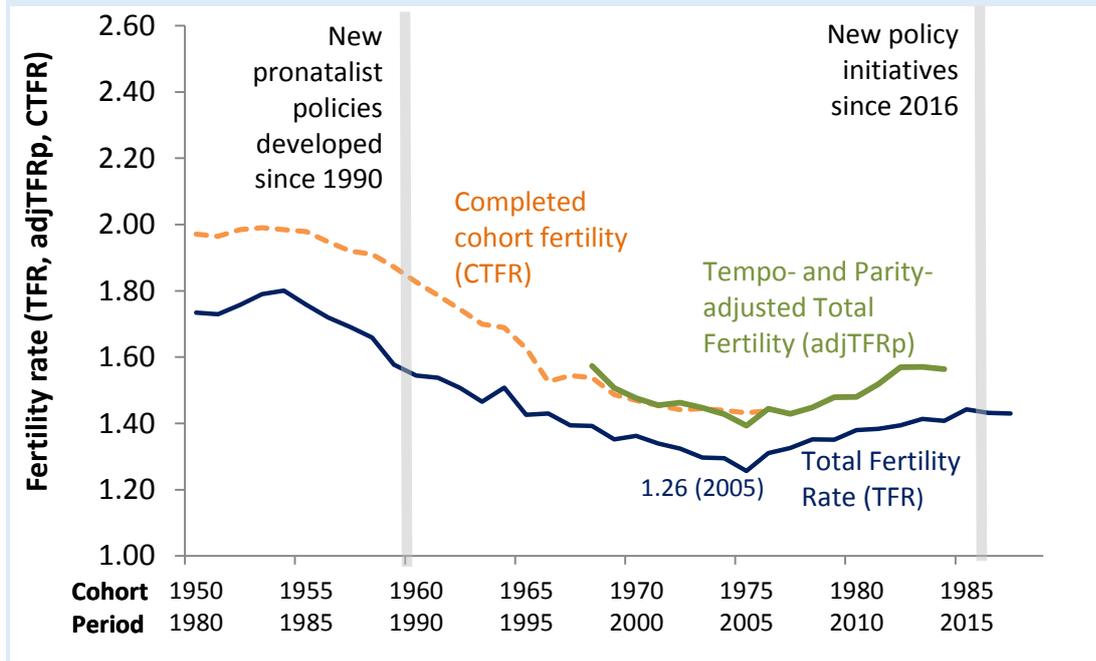
It seems, however, that the intensive policy efforts introduced in Japan and later in Republic of Korea have not been effective in tackling some of the root causes of very low fertility in the region. Most important, women may not have fully benefited from these policies because of the traditional division of labor, deeply rooted in the patriarchal culture, intense work-pressure and highly competitive educational systems (Kim 2018, Brinton 2019). Long and inflexible working hours, with frequent overtime work, clash with childrearing and other family responsibilities that are largely shouldered by women (see also Section 2.2 above). The East Asian countries are characterized by most asymmetrical gender division of labor among all OECD countries (OECD 2017a).

These difficulties are further exacerbated by increasing instability of work contracts, in particular among the young generations and the “education fever” which puts high pressure on children to succeed in school exams and to get enrolled in high-ranking universities, but also incurring high time and monetary costs to the parents (Lee and Choi 2015; Ma 2014 and 2016; Anderson and Kohler 2013). Parents who want their offspring to succeed in such competitive and expensive educational systems may opt against having more than one child (Tan et al. 2016). More effort should also be made to curb the long working hours and improve the social rights and leave entitlements of part-time and fixed-term employees.

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<sup>10</sup> Even more dramatic has been a long term development in the number of live births, reaching around 330 thousand in 2018, down from 770 thousand in 1983, last year when the period TFR stayed above 2.

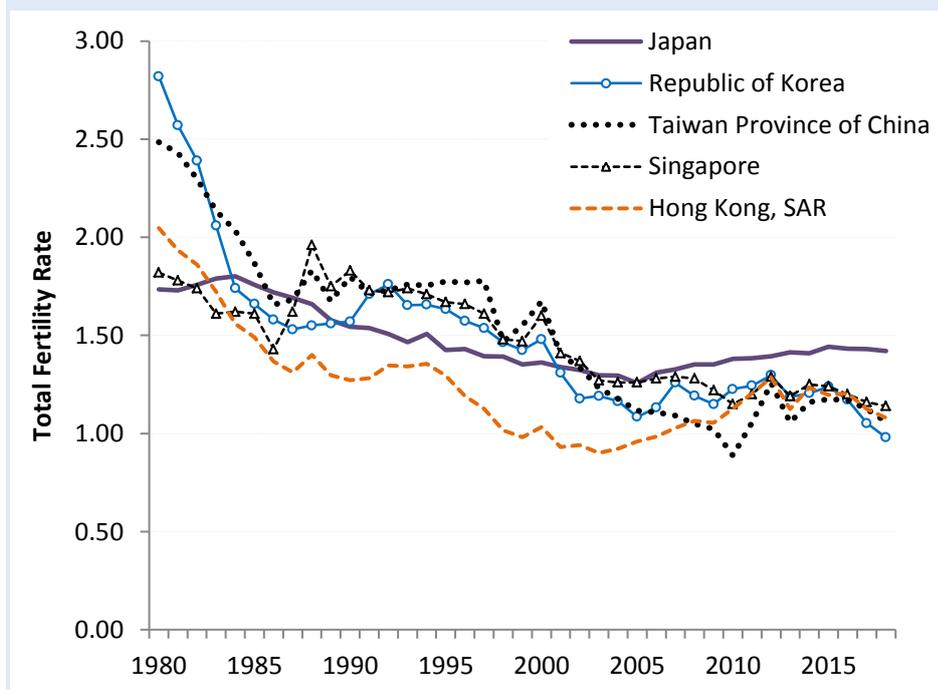
**Figure 14 Total Fertility Rate (TFR), Tempo- and Parity-adjusted Total Fertility (adjTFRp) and completed cohort fertility rate (CTFR) in Japan in 1960-2017 (and among women born in 1930-76)**



**Notes:** Cohort fertility data displayed in the figure are shifted by 30 years, reflecting the mean age at childbearing in the 1980s-2010s. Completed fertility for women born in 1971-76 show fertility rates achieved up until 2016 and an estimate of a small proportion of fertility realized after that year.

**Sources:** Human Fertility Database (2019) and own computations. Data on Tempo- and Parity-adjusted Total Fertility (adjTFRp) were computed by Kryštof Zeman.

**Figure 15 Total Fertility Rate (TFR) in Japan, Hong Kong SAR, Singapore, Republic of Korea, and Taiwan Province of China, 1980-2018**



**Sources:** Human Fertility Database (2019), national and local statistical offices.

#### 4.7 Assisted reproduction

Government policies influence the use of assisted reproduction (AR) via two channels. First, by subsidizing the provision of assisted reproduction and establishing rules about eligibility to receive subsidized services, based on criteria such as number of children and age of woman, her marital and family status, and number of AR treatments she has already received. Second, by setting up broader regulatory framework stipulating who can receive AR and which treatments are available, with some options such as oocyte donation, cryopreservation, surrogate parenthood, and the use of AR by single women, women over age 50 and lesbian couples prohibited or restricted in many countries (Präg and Mills 2017; ESHRE 2010 and 2017).

Different costs and availability of AR influence its use and thus also its overall contribution to birth rates (Connolly et al. 2010). Since the early 2000s some studies have argued that AR provision should be incorporated among the strategies European Union and individual countries are adopting to reverse fertility declines and slow population aging (Grant et al. 2006; Hoorens et al. 2007; Ziebe and Devroey 2008). Among rich countries Israel stands out for its extensive AR support. It applies a pronatalist policy which has adopted AR provision as one of its important pillars. The AR treatments in Israel are strongly subsidized, enjoy wide popular support and are embraced by both secular and religious authorities.<sup>11</sup> They have become part of reproductive choices and options for individual women and couples (Sperling 2010; Birenbaum-Carmeli 2016).

The impact of AR policies on fertility rates is relatively small, but individual assessments vary. For instance, Hoorens et al. (2007) suggested that if the access to assisted reproduction in the United Kingdom would increase to the same level as in Denmark, the TFR in the United Kingdom would rise by 0.04 in absolute terms (or by 2.4%). Data collected by the European Society of Human Reproduction and Embryology reveal huge differences in the share of children born after assisted reproductive technology in Europe in 2014 (De Geyter 2018: Table III), which ranged from 0.2% in Serbia to 2% in Germany, Italy and France, up to around 6% in Austria, Czechia, Greece, Denmark, and Spain. The European-wide average of 2.1% is slightly above the figure of 1.8% for the United States. When these shares are translated into the contribution of AR to Total Fertility Rates, they vary from 0.00-0.01 in Serbia, Lithuania, Romania, and Ireland to 0.03 in Italy, Germany, whole of Europe, and the United States, 0.05 in France, and up to 0.09 in Slovenia and Czechia, 0.11 in Denmark, and 0.13 in Israel (Figure 16). The high value for Israel is due to a combination of a high share of children born after AR and a high fertility in the country (with the TFR and cohort fertility above 3 children per woman), unmatched in any other highly developed country. Comparing countries with average levels of AR-related TFR at around 0.03 and those with high levels at 0.08-0.11 gives an indication of a crude effect of generous policies subsidizing and providing wide access to AR.

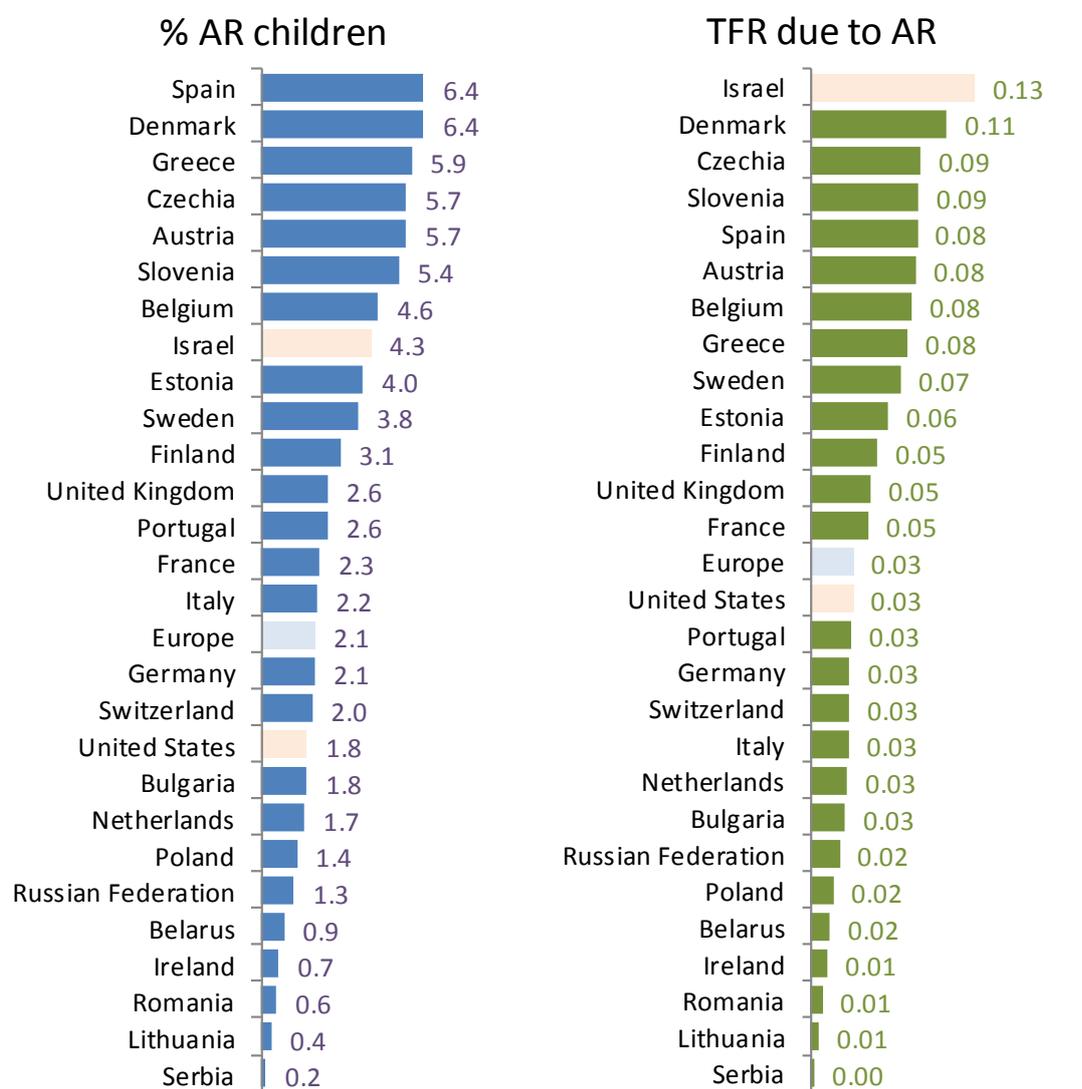
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<sup>11</sup> In Israel women aged 18-45, irrespective of their family status or sexual orientation, are entitled to „unlimited, funded treatment up to the birth of two live children with her current partner“ (Birenbaum-Carmeli 2016: 17).

However, these crude estimates do not provide the “net effect” assisted reproduction has on fertility, as they do not account for spontaneous pregnancies that would otherwise occur to some AR users (Eijkemans et al. 2008; Van Eekelen et al. 2017) or unplanned “extra” births among AR users experiencing twin or triplet deliveries. Studies that aim to control for these factors find a small impact of AR on fertility rates. Sobotka et al (2008) estimated that the “net effect” of AR use on completed fertility of Danish women born in 1970 ranges at 0.036-0.057 compared with the “crude effect” of 0.068. Higher estimates of potential AR impact are derived in a hypothetical model by Habbema et al. (2009) which looked at the option of providing AR to all infertile women after three years or after one year of infertility. Full access to AR treatment after three years would increase the TFR by 0.08 children per woman, whereas full access after one year would give the TFR an additional boost by 0.04, with high costs and a considerable increase in multiple deliveries, which are seen as problematic from the health and medical viewpoints. One policy “experiment” showing that AR costs do influence the use of infertility treatments took place in Germany: a reform of the healthcare system law in 2004 introduced a co-payment of 50% for all subsidized AR treatments and medication, resulting in a sharp downward trend in AR cycles and AR live births, and halting the previous rise in AR use (Figure 17; see also Connolly et al. 2009). It took almost ten years before the AR births reached the pre-reform level from 2002 (excluding the spike in 2003 caused by the anticipated reform) and today’s AR use is arguably still much lower than it would be if AR treatments remained fully subsidized.

In sum, accessible AR might have a small positive effect on fertility rates, which is typically in the order of up to 0.05 (or up to 4%) when accounting for spontaneous pregnancies, unplanned births and the fact that not all women and couples are willing to undergo stressful AR procedures. Its importance may increase in the future as more women postpone childbearing to higher ages, new AR techniques such as “egg freezing” spread to respond to this trend and AR becomes more effective at later reproductive ages. AR would also increase in importance if there is a sustained long-term decline in sperm quality and volume among men, as frequently suggested by some studies (e.g., Levine et al. 2017).

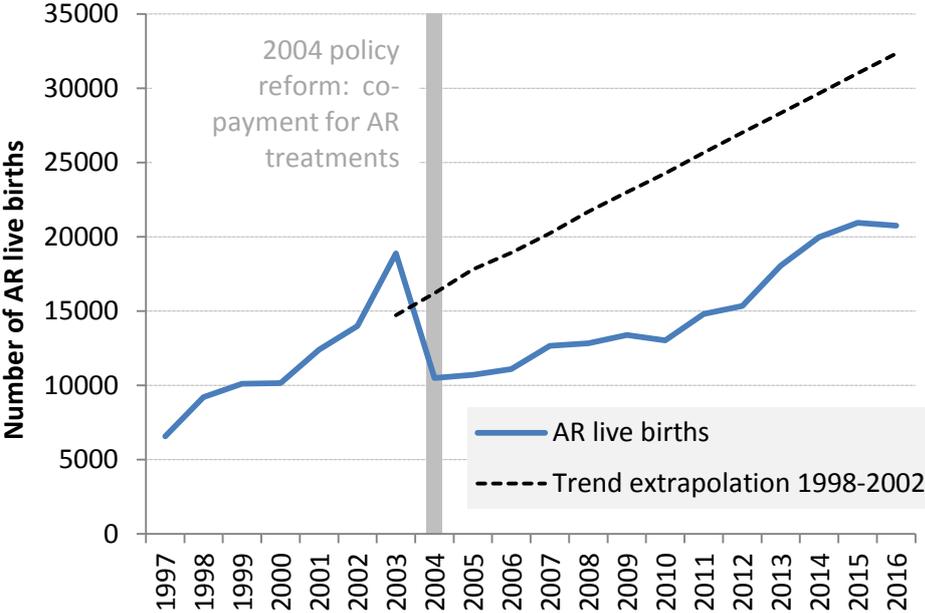
**Figure 16 Share of live-born children conceived through assisted reproduction treatment and the estimated contribution of assisted reproduction to the TFR in selected countries in Europe, Israel and the United States, 2014**



**Notes:** Data for Israel refer to 2013, data for the United States refer to 2015. Assisted reproduction treatments refer to all interventions that include *in vitro* handling of both human oocytes and sperm or of embryos for the purpose of reproduction (Zegers-Hochschild et al. 2017); they exclude intrauterine inseminations. Data for some countries include AR performed to women from other countries.

**Sources:** Share of children born after AR treatment: De Geyter (2018: Table 3); Birenbaum-Carmeli (2016) and CDC (2017). TFR due to assisted reproduction: own computations based on these sources and on the data from Eurostat (2019) and Human Fertility Database (2019).

**Figure 17: Number of live-born children following assisted reproduction in Germany (1997-2017), observed and projected using simple extrapolation of trend in 1998-2002**



**Source:** *The German IVF Registry Annual Report 2017* (Blumenauer et al. 2018), trend extrapolation is a simple linear extrapolation based on our computation.

### **Box 8. Pronatalist policies and fertility in state-socialist countries of Central and Eastern Europe, 1960s-1980s**

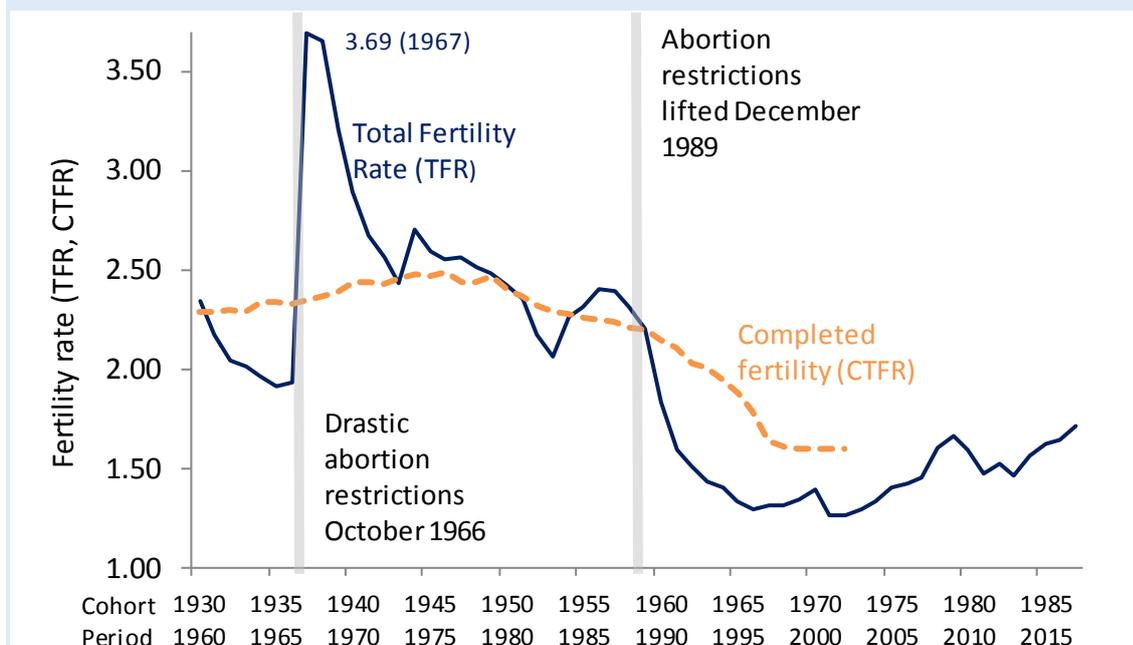
The former state-socialist countries in Central and Eastern Europe had a long history of policies and interventions aiming to support families and boost fertility rates. Most of the region experienced low or declining fertility rates already in the 1950s and 1960s as higher education expanded, many people moved from the countryside to the cities, women were expected to join the labor force and faced considerable difficulties in combining employment, childcare and household work. Most countries in the region were strongly shaped by traditional views and expectations about gender roles, maternity, and gender division of work in the household. Since the 1960s governments started introducing different measures aiming to encourage procreation, which ranged from childcare provision, expanded maternity leaves, and child benefits to special loans for the newlywed couples, earlier retirement age for women with children, and preferential housing distribution for families with children (David 1999; Sobotka 2011). Policies often also incorporated restrictions, such as extra taxation of single people who did not marry by a certain age (e.g., in Bulgaria and Soviet Union) or restrictions in access to abortion which was widely used as a method of birth control (David 1999, Frejka 1983, Stloukal 1999). The family and pronatalist policies in the region had mixed effects. We review the evidence on the effects of policy interventions in three countries, Romania, former GDR (East Germany), and Czechoslovakia.

The policies reviewed here – with the exception of Romania – are similar to some of the measures being implemented and considered in different countries today, but they had been applied in a completely different institutional context. The state socialist countries were characterized by authoritarian one-party rule, almost full employment, limited income and social status differences, rigid and centrally planned economic system and the absence of political freedoms (Sobotka 2004). Therefore, these findings cannot be “applied” to contemporary countries with market economy, but they give useful insights into past fertility effects of relatively robust government interventions. This review of historical evidence also allows us to go beyond short-term period changes and look at the long-term effects of family policies from the perspective of women’s generations most affected by these policies.

The pronatalist policies were most forceful in **Romania**, where N. Ceaușescu, the autocratic leader in the 1960s-1980s, showed long-term obsession with population growth (Soare 2013). Since November 1966 induced abortion, which had been widely used, became severely restricted. Later, in the 1970s and 1980s, further restrictions were added and the import and sale of contraceptives were limited as well (Baban 1999; Klingman 1998). The drastic law did have an intended effect and created huge temporary baby booms, with large jumps in fertility rates followed by fertility declines. Period TFR jumped up from 1.93 in 1966 to 3.69 in 1967 and then fell rapidly, eventually fluctuating at 2.0-2.7 in the 1970s-1980s, responding to additional restrictions and changing period conditions. Also the completed cohort fertility, which had been declining fast among women born in the 1900s-1920s, reversed among women born after 1930 who were most affected by the restrictive abortion legislation. Consequently, completed fertility increased from 2.29 to 2.46 children per woman among women born between 1930 and 1946 (Figure 18).

The draconian pronatalist policy incurred high and lasting costs for the health and wellbeing of mothers and children and families at large, including very high maternal mortality rates resulting from illegal abortions, large number of unwanted children placed in orphanages (Baban 1999), and detrimental education and labor market effects for the large cohort of women and men born after the abortion ban (Pop-Eleches 2006).

**Figure 18 Total Fertility Rate (TFR) and completed cohort fertility rate (CTFR) in Romania in 1960-2017 (and among women born in 1930-71)**



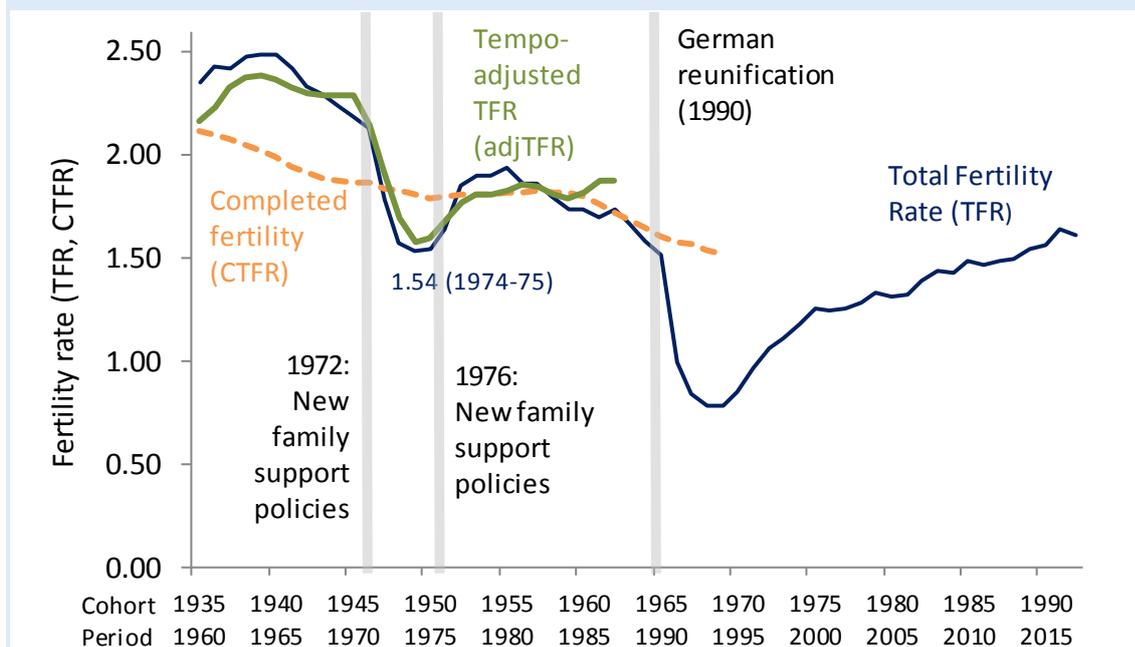
**Notes:** Cohort fertility data displayed in the figure are shifted by 30 years. For instance, fertility rates in the year 1980 are compared with the family size among women born in 1980, who were strongly affected by the pronatalist policies at that time.

**Sources:** TFR: Ghețău 1997, Eurostat (2019) and own computations. CTFR: Ghețău 1997 and Population Census 2011 (CFE Database 2019).

Family policies in **East Germany** (former German Democratic Republic) were based on a more standard set of measures and incentives. East German policies were explicitly directed to increasing fertility since 1972 and population goals were incorporated in the political agenda of the government (Kreyenfeld 2004). In 1972 a set of measures supporting families was rolled out. It included marriage loans for young couples, expanded child benefits, longer maternity leave as well as reduced working hours for mothers with three or more children (Kreyenfeld 2004, Table 1). Single mothers were entitled to additional benefits, such as one year of paid leave when no childcare place was available. At the same time, abortion was legalized and contraceptives were provided free of charge. The outcome was a continuing fall in fertility to the very low levels with the TFR reaching 1.54 in 1974-75, one of the lowest levels globally at that time (Figure 19). This is one of the curious examples of unintended policy effects as the new pronatalist policies coincided with subsequent fertility declines. Another unintended consequence of the new policies was a long-term decline of marriage and a continuing increase of childbearing outside of marriage, driven in part by the extra benefits provided to single mothers (Salles 2006).

In 1976, another broad expansion of family policies took place, including one year of paid leave and reduced working hours for mothers with two or more children and extended maternity leave. In the following years period fertility rates increased, especially for the second and third births. The evaluation of the impact of these policies on fertility strongly depends on the yardstick used. Both conventional and tempo-adjusted indicators of fertility clearly increased after 1976 and then stabilized at a higher level. Completed cohort fertility stopped declining and even slightly increased (from 1.79 to 1.83) among women born between 1950 and 1957, who benefited most from the new policies (Figure 19). East German fertility which had initially declined at a similar pace as fertility in West Germany, started diverging from the West German trends. At the same time, fertility rates did not return back to their levels prevalent until 1971 and East German fertility rates in the 1970s and 1980s remained at the lowest level among the state-socialist countries in Europe, especially in the late 1980s. Two studies have empirically assessed the effects of the 1976 family policies in GDR. Monnier (1990) simulated cohort fertility change based on age-specific trends before 1976 and compared the simulated and achieved fertility in 1980 and 1984 among women born in 1944-55. His analysis concluded that policies had mostly affected the timing of births and had only a minor effect on family size among these cohorts except for the youngest ones, 1953-55, whose fertility was lifted by 0.1-0.2 children per woman. Büttner and Lutz (1990) used age-period-cohort simulation to project period fertility rates in 1977-87 in the absence of the new policies and concluded that policies lifted the period TFR in that period by 15-18% or by 0.19-0.25 in absolute terms (except in 1980 when their effect was stronger). Interestingly, this difference broadly corresponds to the gap in completed fertility between eastern and western Germany among women born in the 1950s and early 1960s.

**Figure 19 Total Fertility Rate (TFR), tempo-adjusted TFR and completed cohort fertility rate (CTFR) in eastern Germany (former GDR) in 1960-2017 (and among women born in 1935-69)**



**Notes:** Cohort fertility data displayed in the figure are shifted by 25 years, reflecting the mean age at childbearing in the 1960s-1980s. For instance, fertility rates in the year 1980 are compared with the family size among women born in 1955, who were in their peak childbearing years in that year. Tempo-adjusted TFR is an indicator computed using the method developed by Bongaarts and Feeney (1998); the graph shows 3-year moving averages to smooth fluctuations.

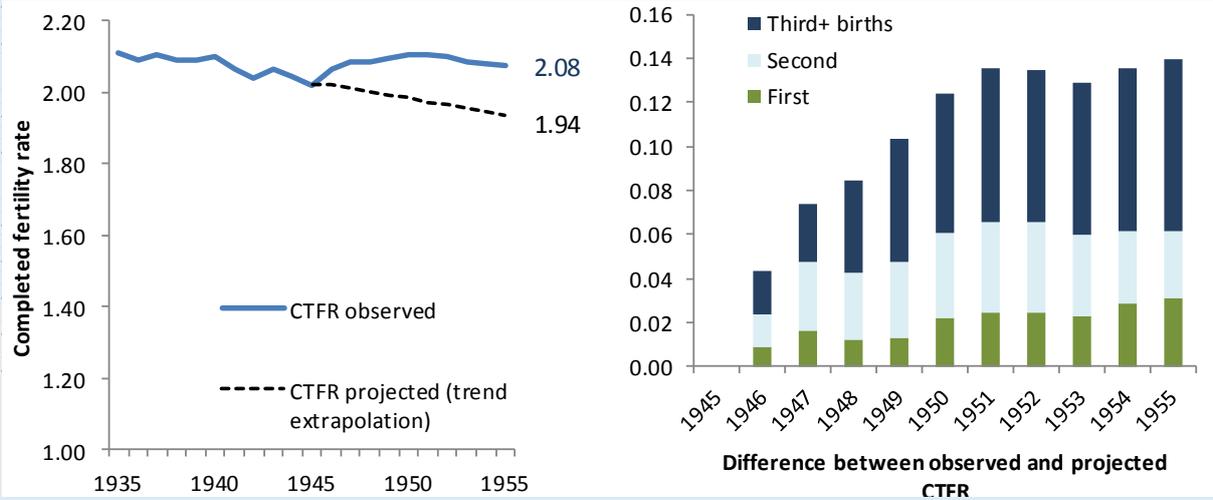
**Sources:** Human Fertility Database (2019), Statistisches Bundesamt (2019)

Around the same time as in East Germany a range of measures supporting families had been implemented in **Czechoslovakia**. Between 1968 and 1973 maternity leave was extended, childcare allowances increased—especially for the second and third births— and extended paid maternity leave was introduced for mothers with children below age 2. Since 1973, newlywed couples below age 30 qualified for low-interest loans, partly written off when they had children (Heitlinger 1979, Frejka 1980). In addition, housing construction, mainly of large blocks of flats, took off rapidly, especially in larger towns and cities. These measures were quite substantial as family supporting policies constituted about 10% of total government spending (Frejka 1980). Period TFR jumped up, especially in Czechia which had lower fertility than Slovakia (Figure 5 above).

The evaluation of the policy impact is clouded by the fact that the population was affected by the Soviet Union-led invasion in 1968 that crashed the social and political reforms in the country. Subsequently, many people reacted by retreating from social and public activities to their private and family lives, which might have given a boost to fertility (Kučera 2008). Most of the policy effect on fertility was due to the shift to earlier childbearing and shorter birth intervals. This is apparent when comparing fertility change in Czechia from a trough in 1968 to the peak in 1974: whereas the conventional TFR jumped by 0.60, from 1.83 to 2.43, the Tempo- and Parity-adjusted Total Fertility (adjTFRp) increased much less, by 0.20 (from 1.97 to 2.17; Figure 5 above). Frejka's (1980) analysis suggested that in the early 1970s cohort fertility had also been affected, especially among women in their 20s, who had more second

and third births. Figure 20 presents a simple extrapolation of cohort trends by birth order observed among women born in 1938-45 for the next ten cohorts (1946-55) who were most affected by the pronatalist policies of the early 1970s. A comparison with the observed cohort fertility rates suggests that the pronatalist measures gave a boost to family size by up to 0.14 births per woman (i.e., by up to 7%), with the strongest contribution by third and later birth rates (Figure 20).

**Figure 20 Observed and hypothetical projected trend in completed cohort fertility rate (CTFR) in Czechia among women born in 1935-55 (left panel) and the difference between the two measures (by birth order, right panel)**



**Notes:** The hypothetical CTFR projection is based on a linear extrapolation of fertility trends for the cohorts born in 1938-45, computed separately for the first, second and third and later births.

**Sources:** Own computations using data from the Human Fertility Database (2019).

In sum, the pronatalist policy interventions in Central and Eastern Europe were often introduced in major leaps and jumps which spurred a temporary baby boom. Distinct waves in the number of births and period total fertility rates often started fading after several years. These waves were largely fuelled by the changes in the timing of births—shifts towards earlier childbearing and shorter birth intervals—but they also had a genuine impact on fertility levels, as shown by modest increases in Tempo- and Parity-adjusted Total Fertility and by a stabilization or slight increases in the previously declining cohort fertility rates. We have illustrated these modest effects, in the order of 0.10-0.25 births per woman on the examples of the former GDR and Czechia. Similar evidence has been found for a policy-driven fertility increase in **Russia** in the 1980s (Zakharov 2016; see also Figure 11 above). Only drastic anti-abortion limitations and other restrictive measures, as applied by Romania, temporarily achieved a stronger fertility effect on account of a serious violation of individual human and reproductive rights.

#### *4.8 Policy bundles: evaluating the overall impact of family policy “packages” on fertility*

The examples presented above show that family policies often influence fertility, although these effects are often small and manifested more in short-term indicators of period Total Fertility Rates and changes in the timing and spacing of births rather than leaving a durable impact on cohort fertility (family size). Some findings on policy effects are inconsistent, depending on the country, data, methods and study design, indicators and assumptions applied as well as population groups studied. A typical example is the varied assessment of the impact of “maternity capital” policies in Russian Federation, summarized in Box 6 above.

*Overall, on the basis of the presented literature review we can draw following conclusions: The provision of public childcare consistently shows positive effects on completed fertility and its effects are largest for the highly educated women. Nonetheless, childcare provision is most likely to bring positive effects if:*

1. It is of high quality so that parents can trust it will be beneficial for their children;
2. It is available for children of all ages, especially young children below age 3, but also school-aged children who need to be taken care after they finish regular classes;
3. Its opening hours are aligned to parents’ working hours, providing care to children whose parents work full-time, start the working day early or finish later in the evening;
4. It does not incur high costs on parents.

The effects of *parental leave schemes* are rather inconsistent, which may be due to a huge diversity in parental leave entitlements, including leave duration, its flexibility and options of sharing it between the parents, level and universality of leave benefit, and entitlement conditions. Parental leaves are most likely to bring positive effects on fertility if they are well paid. Parental leave schemes should be well aligned with the availability of public childcare to bridge the gap between the birth of the child and its entry to public childcare. Flexible parental leave schemes allow parents to adjust the duration of the parental leave to their needs (Box 5). Individualized parental leave entitlements allow fathers to make use of the parental leave according to the “use it or lose it” rule and facilitate more equal division of childcare between partners. Besides any effects on fertility, parental leave schemes are of key importance as they stimulate the well-being of the newborn children, allow mothers to recover after delivery, allow the parents to take a break from work without terminating their employment contract, and allow parents to establish close contact with their newborn children.

*Financial incentives* often show positive effect on fertility, but their long-term impact on completed fertility is less obvious: when it is demonstrated, it is rather small and impacting mainly lower-educated and lower-income groups. Financial transfers have limited power to increase fertility as they can only cover a small proportion of the overall costs of children. Generous monetary incentives may bring larger results, but also imply very high costs for the governments—as a result, they are frequently cancelled or revamped, especially in times of economic austerity. Such measures are also quite likely to change the timing of births as women and couples try to make use of them before they are terminated. Fertility is also affected by *labor market policies*. Countries with rigid labor markets where employment

entry after school or a career break is difficult usually have low fertility. Flexible labor markets, where entering employment is easier and where parents can adjust working hours to fit their family obligations are most family friendly. Although part-time jobs encourage reconciliation of paid work and family life, they should offer similar conditions as full-time jobs in terms of hourly wages, social security entitlements and access to training. Furthermore, labor markets should adapt to changing roles of men, allowing fathers for taking parental leaves, reducing working time or using flexible work arrangements. Such possibilities are largely available to women while men are still perceived as “ideal workers” whose work performance is not affected by their family situation. This is the case even in Sweden, considered as a highly gender-equal society (Haas and Hwang 2019).

Subsidized and widely accessible *provision of assisted reproduction* has a small positive effect on fertility rates. Wider societal and cultural acceptance of AR, typical of Israel or the Nordic countries, is also linked with its higher use among infertile couples.

Single policy measures are unlikely to increase fertility, especially when they are modelled on the outdated assumptions about families and gender roles. Rather, a comprehensive package of consistent and mutually compatible family, labor market and health policies is needed. Such policies should reflect the changes in the family and in society during the last decades, including the retreat of marriage, the shift to later parenthood, the new diversity of family forms, the expansion of higher education—especially among women—and the new career and leisure aspirations women and men are pursuing. The new policies should also respond to the new economic and labor market uncertainties, rising economic inequality among younger women and men in many countries, soaring costs of housing, and also to the diversity of reproductive choices and preferences among women and men. In short, policies should respond to diverse needs of the population and not to the ideological beliefs of the policy makers. They should also remain relatively stable over time.

Countries follow different pathways in building their package of family policies, depending on their economic situation, cultural and family values, gender norms and gender relations, labor market, religious and ideological influences, their actual demographic trends and many other factors. Some countries have successfully developed comprehensive and well-functioning family policies bundles over time. Box 9 presents the evolution and the main features of modern family policies in two cases of such successful development—Sweden and France. Box 10 shows the more recent evolution of such family policy package in Germany, a country where family policy was until recently oriented towards supporting traditional gender role division among the parents.

### Box 9. A long path to modern family policy package in Sweden and France

**Sweden** has been developing a consistent policy package for many decades. The foundations of the modern welfare and family policies in Sweden were laid already in the 1930s, when the key reformers such as sociologist Alva Myrdal promoted policies incorporating a child-centered perspective, reproductive rights and gender equality (Myrdal 1941). In the early 1970s, policies responded to the growing labor force participation of women and to the declining fertility by offering parents extended parental leave rights and cash transfers. The government also reacted to the change in women's social roles by gradually expanding the childcare coverage. It was recognized that dual earner family model can have numerous positive consequences for families as children will have the opportunity to grow up in wealthier families and receive high-quality pre-school education (Wells and Bergnehr 2014).

Already in the 1970s Sweden introduced parental leave (which replaced mother-oriented maternity leave) and started to expand public childcare. In 1979 the government granted parents with preschool children the right to reduce their working time by 25% (Wells and Bergnehr, 2014). Parental leaves were paid and the benefit was tied to parents' earnings before the leave. This system was designed to encourage women to establish their position in the labor market before having a child and to provide incentives for men to make use of parental leave. Since such policy might have led to delayed parenthood, the Swedish government introduced incentives for parents to space their children more closely (see Box 3). The parental leave entitlements and the right to work part-time were accompanied by a gradual expansion of public childcare for children aged 1 to 6. The number of publically funded childcare places increased from 12,000 in 1965 to over 136,000 in 1980 and to 730,000 by 2002 (Earles, 2014). Childcare expansion intensified in the 1990s when the government introduced the right to childcare for every child aged 1 to 6 with a waiting time no longer than 3 months (Earles, 2014). Since 2008 parents can also choose to provide care themselves and to this end receive a home care allowance (Ferrarini and Duvander 2009).

Sweden was one of the first countries which recognized the need to support fathers in pursuing their rights to take care of their children. Already in the 1970s Sweden introduced the right for fathers to make use of parental leave and individualized it in the 1990s, gradually extending the proportion of the leave reserved for fathers (Duvander and Johansson 2012). This policy was consistent with the idea of improving gender equality in both the public and private sphere, which has been underlying the Swedish family policy model since the 1970s. Finally, employers in Sweden have relatively high awareness about employee's family obligations (Den Dulk et al 2014). Companies in Sweden have flexible working hours and often allow people to work from home and company meetings are not scheduled in the early mornings or late afternoons (Hobson et al 2011; Wells and Bergnehr 2014).

A consistent family policy package has also developed in **France**. While the main objective of the Swedish family policy model has been to achieve gender equality, the French policies have been foremost concentrated on improving family and children's well-being (Gauthier 1996). The French family policy model is thus built on generous cash transfers toward families combined with an extensive childcare provision. From the beginning public childcare

aimed to guarantee children equal opportunities. Later on, the aim to allow women to participate in the labor force increased on importance. French cash transfers have a pro-natalist character and are foremost directed to large families (Martin 2010). Tax breaks form one of the cornerstones of the French family policy system. Taxable income can be reduced with increase in family size (Letablier 2003). In addition, France grants universal family allowances to parents with at least two children, special allowances for poor families and housing allowances (Thévenon 2016).

Families in France enjoy an exceptionally well developed system of childcare services. The idea behind childcare expansion in France is deeply rooted in a widely shared belief that the state is responsible for children's well-being, including care. A special feature of the French childcare system is its diversity, which accommodates parents' and children's diverse care needs. Childcare can be provided in traditional daycare centers organized by municipalities, but also in family daycare centers where care is provided by accredited carers, company crèches and kindergartens (usually run by public companies) as well as drop-in centers which provide temporary irregular care for a number of hours (OECD 2006b). An important feature of the French family support system is a shorter working time, with a standard work week of 35 hours. Although work week was mainly shortened to reduce unemployment and facilitate work sharing, the second objective of this reform was to improve work-family balance (Letablier 2003). The policy has indeed led to the shortening of the actual working time and a decline of the working time gap between parents, supporting full-time participation in the labor force of both partners (Letablier 2003).

The consistent and generous family policy packages of Sweden and France, which have been adjusted to societal changes and population needs over time, have been often considered as important reasons for relatively high fertility in the two countries (Björklund 2006; Thévenon 2016) and for low educational differences in fertility in Sweden (Jalovaara et al 2018). They may serve as examples for family policy reforms in other countries dealing with the challenges of changing policy needs and declining fertility. Box 10 discusses an example of such family policy reforms in Germany.

### Box 10. A journey to modern family policy in Germany

During the last two decades Germany has made a long journey from seeing women's, in particular mothers', labor force participation as a threat to the family to actively supporting modern family forms with less strict gender roles. Similar to Sweden and France (see Box 9) western Germany (or the former Federal Republic of Germany until 1990) used to have a consistent family policy package, but unlike in these countries German family policy had been geared towards supporting the traditional male breadwinner model. It relied on child benefits, extensive and poorly paid parental leave, tax income splitting among married couples which financially rewarded male breadwinner families, and poor childcare provision with short opening hours incompatible with dual-earner families. This family policy model, even though rather generous and consistent, did not respond to the increasing desire among women to participate in the labor force. By contrast, eastern part of Germany, the former German Democratic Republic, has a long tradition of the dual-earner family model: crèches and kindergartens were widely available and women were expected to go back to full-time employment long before their child's third birthday (see also Box 8).

Limited opportunities for mothers to participate in the labor market contributed to a decline in fertility in Germany. Facing persistent low fertility, political consensus was reached to seriously reform the German policy model to make it more responsive to changing gender roles. In 2007, Germany implemented a new package of family policies, which largely draws on the Swedish family policy model. It facilitates reconciliation between work and family, and at the same time allows parents to provide home-based care if they prefer. It also provides incentives for fathers to participate more in childcare, which led to increased uptake of parental leave among fathers (Geisler and Kreyenfeld 2019).

The first step towards bringing mothers back to the labor market was the introduction of legal entitlement to kindergarten for children aged three to six years (i.e. until reaching the school age) in 1996. In the first half of the 2000s, Germany adopted laws enforcing a step-wise **expansion of all-day schools and childcare facilities** for children below age three. Working parents have been allowed to deduct childcare costs (up to EUR 4,000) from their income tax. Since 2007 they have also been given the right to an **income-dependent parental leave benefit** paid for 12 months at a replacement rate of 67% (capped at EUR 1,800 per month). This includes an eight-week post-birth maternity leave with a 100% income substitution (another six weeks paid at a full replacement rate are foreseen to be used before the birth). The paid parental leave can be extended up to 14 months if each parent participates in the leave for at least two months. This aims at encouraging fathers to be more involved in childcare. Fathers' uptake of the leave has been increasing steadily from 21% to 36% for children born in 2008 and 2015, respectively.

The rise in the number of fathers taking the parental leave has been speeded up by creating flexible conditions for combining leave and employment among both parents: since 2015 parents have been able to use their **parental leave on a part-time basis** for up to 36 months. In this way both parents can simultaneously combine part-time employment with caring for their children. The income loss, i.e. the wage difference between the full-time and part-time employment, is substituted at 67%.

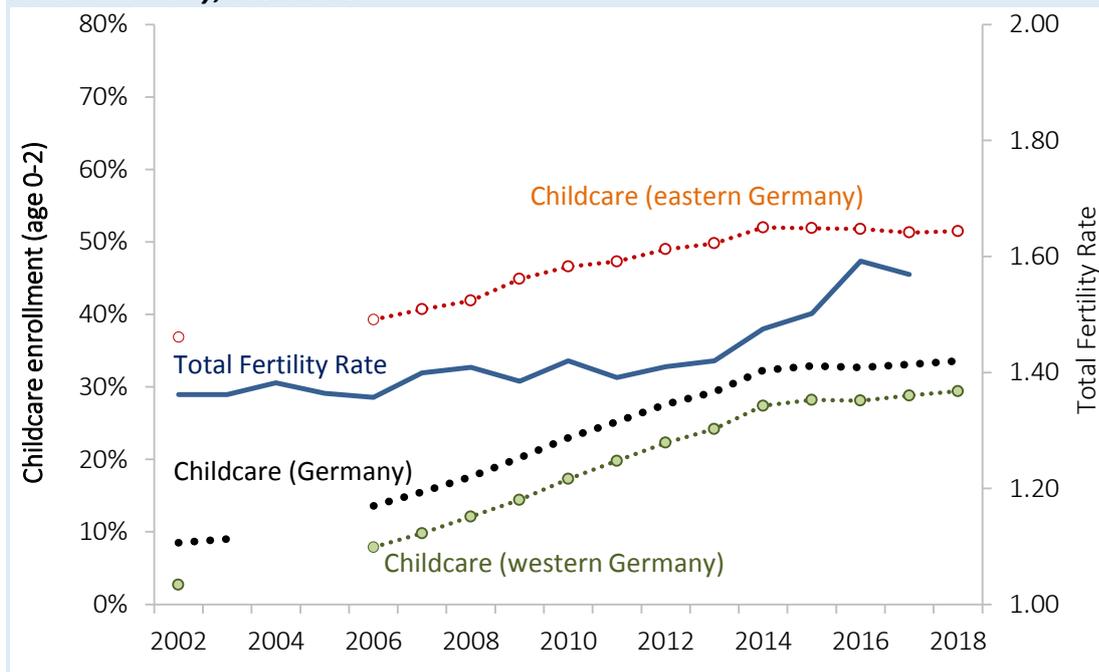
The growing flexibility in combining family and work life goes hand in hand with further expansion of childcare, especially for children below age 3 (Figure 21). Since 2013, parents have had a **legal claim to institutional childcare from their child's first birthday**. The fees vary by federal states (*Bundesländer*) but typically depend on parents' income and are increasingly subsidized by the states; in some places the entire costs are covered by the local government. As a result, institutional childcare is becoming more and more popular, with over 90% of children between age three and six spending at least part of the day in kindergarten. Although almost 30 years have passed since the reunification, differences in childcare uptake between eastern and western Germany still remain strong (Figure 21). In the East children start attending daycare facilities at a younger age and stay there for longer hours than in the West, where the majority go to kindergarten on a part-time basis only when they turn three years old. Moreover, childcare provision for children aged 0-2 still lags behind the demand, especially in western part of Germany. In 2017, 45% of parents with children below age 3 stated they wished to have them enrolled in childcare, whereas only 33% of children of that age were actually enrolled (BMFSFJ 2018)

In addition to measures facilitating childcare, each family with children is entitled to **child benefit** (*Kindergeld*) for each child until its 18<sup>th</sup> birthday (or 25<sup>th</sup> birthday if the child is in education). Currently the benefit amounts to just below EUR 200 per month for the first and the second child, whereas it is slightly higher for a third child and then increases a bit for all further children. Moreover, parents with income beyond a certain threshold are eligible for tax allowances. There is an additional support for single parents and low-income parents (means-tested allowances).

Since 2007 German family policies have moved much closer to the policy packages in the Nordic countries. At the same time, period fertility rates in Germany remained stable and then increased moderately in 2013-16 (Figure 21). These trends can be attributed to different factors, including higher fertility of new-coming migrants (Pötzsch 2018), but the policy reforms have given a boost to fertility rates of highly educated women at later childbearing ages (Bujard and Passet 2013; Wang 2018).

*This box is extensively based on the report by Radenacker et al. (2014)*

**Figure 21 Public childcare coverage among children aged 0-2 (dotted lines) and the Total Fertility Rate in Germany, 2002-2018**



Source: For 2002-2003 and 2018: OECD and German Federal Statistical Office (different publications); data for 2006-17: BMFSFJ (2018: Figure 4). Period TFR: Human Fertility Database (2019) and Eurostat (2019).

In contrast to countries which implemented comprehensive family policy packages which consist of various policy instruments and address diverse social needs of the families, some countries concentrated mainly on expanding single policy measures. These are, for instance, the Eastern European countries which have recently expanded their financial support for families. These policies cover the extensive financial cash transfers in Russian Federation (maternity capital, Box 6), expansion of family benefits and tax reductions for large families in Hungary, and the Family 500+ Program in Poland. These policies respond to the needs of some families as financial constraints have been one of the important barriers to family formation in the region (Marczak et al. 2018). It is unlikely, however, that higher monetary transfers are sufficient for supporting fertility decisions. They are likely to help especially the lower educated people with limited economic resources. They are less relevant for the rest of the population who need to combine childcare with paid work and who may struggle to acquire adequate housing for their family. They are, in particular, of little support to highly educated mothers, who are rarely interested in long career breaks and for the fathers, who may not be able to resist employers' pressure to work long and inflexible hours after the birth of a child.

## 5. Policy effects on fertility: Concluding discussion and future research agenda

### 5.1 What makes family policies (un)successful: Key considerations

#### *Policy instability and fiscal sustainability*

Frequent reforms and reversals of family policies make them unpredictable, unreliable and confusing, potentially having a negative impact on fertility even in countries which provide relatively generous support for families. Spéder (2016) documented such shifts in family policies in Hungary following the breakdown of the state-socialist system. Between 1990 and early 2010s, each successive government aimed to leave its ideological imprint on family policies, but also needed to deal with budget constraints, especially in periods of austerity, with considerable cuts to benefits in 1995 and 2009. Changing policies and policy schemes cancellations had a negative effect on fertility in that period (Spéder 2016; Aassve et al. 2006) despite Hungary retaining relatively high spending on families. Budget cuts often make universal policies means-tested or conditioned on other criteria, reduce the levels of benefits, or eliminate specific schemes altogether. Such policy cuts took place in many countries during the economic recession after 2008, when many governments aimed to reduce the ballooning budget deficits (see the list of policy changes in Table 1.2 in OECD 2014). For instance, the “baby bonus” of EUR 2500, paid to the parents of each new-born child in Spain starting in July 2007 was scrapped only a few years later in January 2011 as the country faced rapidly deteriorating economic situation.

#### *Explicit fertility policies might not be the most influential ones*

Policies supporting children and families are clearly important, but often other factors and policies not pertaining directly to families might have a stronger impact on reproductive decisions. Countries where young women and men experience considerable economic uncertainty, as has been the case in the last decade in Southern Europe, are unlikely to see large fertility upturns even if they embark on a substantial expansion of their family policies. Yet more policy-challenging is the complex combination of demanding labor market conditions, traditional gender norms and intense pressure on children to excel in their education progression, taken to the extreme in East Asian countries, especially in Republic of Korea (e.g., Rindfuss et al. 2004; Anderson and Kohler 2013; Raymo et al. 2015; Myong et al. 2018). Under such circumstances, reversing fertility declines may require much wider institutional reform, dealing with labor market rules and culture, education institutions and gender inequalities. This may also explain why fertility rates in Republic of Korea were declining to extreme low levels during the 2010s despite Korean government embarking on ambitious reforms aiming to expand parental leaves family benefits and childcare availability (Tsuya 2015; Adema et al. 2017; Lee 2018).

### *Policy (in)compatibility*

While family policies are best seen as broader “packages”, the package might not be well balanced as the policies in place result from a long history of initiatives, reforms and changes, which were often introduced by different ministries or responsible bodies without much coordination. Some policies that look excellent on paper might not have much effect if they are not well aligned with other policy measures. The way how different policy elements fit together and link to a broader social system may be more important than the overall level of policy support (McDonald 2002). In extreme cases, policy interventions that aim to compel childbearing behavior rather than to enhance intrinsic motivation for childbearing may eventually lower people’s sense of autonomy and make their fertility increasingly contingent on external stimulation (Botev 2015; see also Box 8 on historical policy experiences in Central and Eastern Europe).

A typical example of incoherent policy measures is the childcare-employment nexus. Today many countries offer flexible parental leave allowing parents to choose a period they plan to stay at home with their small children after childbirth. However, limited public childcare availability and lacking labor market flexibility might make this choice of limited value. Czechia, for instance, has a parental leave scheme, which gives parents considerable flexibility in terms of how long they want to stay home with their children and how they want to share the leave between each other (Box 5). Nevertheless, most families opt for a traditional solution: the mother takes a long parental leave, typically lasting until the child’s third birthday. An earlier return to employment is difficult to achieve for women as the public childcare provision is very low for children below age three, the gender pay gap is one of the highest in Europe and the labor market is geared toward full-time employment (Sobotka 2016).

### *Policy (mis)targeting*

In many countries family policies vary by the number or birth order of children in the family. This is often justified by the higher costs and higher poverty levels among larger families with three or more children (OECD 2011). But these policies may also have explicitly demographic aims, as in the case of “maternity capital” policies in Russian Federation aiming to encourage parents to have a second birth (Box 6). Such policies, however, do not in any way ease the transition to first child as one of the main obstacles for family formation is a limited housing availability and affordability. Thus, substantial financial support such as “maternity capital” is often needed more at an earlier life stage, among women and men planning to start a family.

Furthermore, policies might also be misaligned with the perceived obstacles and barriers to childbearing among prospective parents. They may also ignore the needs of specific population groups (unmarried couples, single parents, same-sex couples, economically disadvantaged families). An example of such a limitation are family policies in East Asian countries which either focus on providing benefits and services to married women and couples or which aim to support marriage among the unmarried ones. Another example are taxation policies favoring income splitting among married couples, present in Germany. This

system supports gendered division of labor and discriminates unmarried couples, which is not compatible with the socioeconomic and cultural changes of the last four decades such as the rise in women's higher education, their massive employment, and the erosion of marriage.

*Ethical considerations: Family policy reflecting family diversity and reproductive rights*

Modern family policies must be non-coercive, should fully support individual reproductive rights and allow people making informed reproductive decisions. As UNFPA (2018: 7) highlights, 179 governments endorsed the Programme of Action of the International Conference on Population and Development in Cairo in 1994. They agreed that all couples and individuals should have the information and the means to decide freely and responsibly on the number, spacing and timing of their children. Some examples of policies implemented in the past violated individual reproductive rights, for instance by limiting the information on and the availability of modern contraception (see the example of Romania in Box 8). At present, components of family-related policies in many countries continue discriminating certain population groups and embracing normative views of the family and living arrangements as they provide support only to specific families, such as married or heterosexual couples. Such criteria are relatively frequent in the rules concerning subsidies and provision of assisted reproduction (Berg Brigham et al. 2013). As families are becoming increasingly diverse, selection criteria both discriminate some individuals and couples and reduce the potential impact of policies on their childbearing decisions. Another problematic example of selectivity are the rules concerning parental leave programs and some other benefits are available only for employed women who are insured with the national employment insurance fund. About one third of employed women, often with irregular and part-time employment, are not eligible (Adema et al. 2017: 18-19).

Our report has covered extensive empirical evidence on family policies, their development, cross-country diversity and their impact on fertility. However, policies also have subjective and highly symbolic role. By designing family policies, governments send an important signal that they care about families and their wellbeing. This symbolic representation can, in theory, make policies that are relatively small or even symbolic in scale psychologically important and “punching above their weight”.

The specific design and changes in family policies also provide cues about desirable, normative and expected behavior. Ultimately, part of the effects and successes of family policies, big and small, depend on whether and how they are accepted, supported and used by the families and whether policies meet their expectations. This point is aptly brought forth by Neyer and Andersson (2008: 703-704):

“[family policies] always act on two levels: on the level of facts and on the level of perception. The potential effect of family policies on actual behavior depends on how a policy is perceived in the minds of people and what it signals with respect to their current and future life course. (...) Consequently, investigations into the effects of family policies on fertility need to consider both the normative or symbolic connotations of family policies and their correspondence with societal development.”

## Acknowledgements

Many thanks to Michael Herrmann and other colleagues at UNFPA for supporting our work on this report and commenting on its earlier drafts. We are also thankful to Kryštof Zeman, who has shared his computations of the Tempo- and Parity-adjusted Total Fertility (adjTFRp) with us.

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