02

Fertility in transition

This chapter examines fertility trends in the EBRD economies and the social, economic and policy factors that shape them. Fertility rates have fallen across all of the EBRD regions, with many countries now well below the replacement rate, though the pace of those declines and the underlying drivers vary. The analysis highlights how delayed childbearing, shifting marriage patterns and economic constraints interact to influence fertility outcomes, often resulting in families having fewer children than they would want. Policy responses – from cash transfers to childcare provision – have had a limited effect.

AT A GLANCE

Many EBRD economies now have total fertility rates well below the

2.1

replacement rate, with some close to **1.3**

In EBRD economies in the EU, the mean age at childbirth has risen from about **26** in **1970** to just under

30

in **2023**

Starting parenthood at the age of **32** rather than **24** reduces the likelihood of having two children from **99%** to

64%

INTRODUCTION

Fertility trends have undergone a profound transformation around the world over the past five decades. Globally, the average number of children born per woman has more than halved since the 1960s, falling from around 5 to 2.25 today.[1] Once characterised by relatively high birth rates, many economies in the EBRD regions now have fertility levels at or below the replacement rate of 2.1 children per woman (the number of births needed to maintain a stable population over time in a low-mortality setting in the absence of migration).[2]

The decline in fertility partly reflects a shift in social norms and cultural attitudes when it comes to family formation. A growing share of young adults are delaying starting families, so marriage and childbearing are happening later in life. In the post-communist economies of the EBRD regions, the share of people aged 31-35 who are married has fallen to around 65 per cent for Millennials, down from about 80 per cent for Baby Boomers. Among 18- to 25-year-olds, roughly 18 per cent of the latest cohort are married (in advanced economies, this figure is as low as 6 per cent). Higher educational attainment, changing gender roles and greater career aspirations have all underpinned this cultural shift.[3] Many still say they would like two children, but as people start families later, it is increasingly common for couples to end up with fewer children than they consider ideal.[4]

Fertility decisions can also be a consequence of economic constraints (such as high cost of living and lack of affordable housing), as well as the fact that women tend to experience a sizeable "motherhood penalty" in the form of a reduction in career earnings after having a baby. By 2023, only 22 per cent of 25- to 34-year-olds in EBRD economies in the EU had achieved all five traditional markers of adulthood (finishing education, joining the labour force, moving out of the parental home, getting married and having children), down from 31 per cent in 2005.

[1] See UNDESA (2024).
[2] This reflects the sex ratio at birth and women's survival to the end of their childbearing years. In economies where mortality is higher or the sex ratio at birth is more male-biased, the replacement rate is higher.
[3] See Kearney, Levine and Pardue (2022) and Bloom, Kuhn and Prettner (2024).
[4] See Kearney and Levine (2025).

By 2019, the majority of governments in the EBRD regions had adopted policies aimed specifically at encouraging childbearing, up from 5 per cent in 1980. These measures range from direct allowances, bonuses and extended parental leave provisions to subsidised childcare and assisted reproductive technology (ART). Their impact on fertility has been limited. While some generous benefit packages have produced short-lived upticks in births, sustaining higher fertility has proved difficult once incentives have ended. Meanwhile, as more couples have children later in life, the share of births using ART (such as in vitro fertilisation) has been increasing, though it remains modest in the EBRD regions compared with advanced European economies.

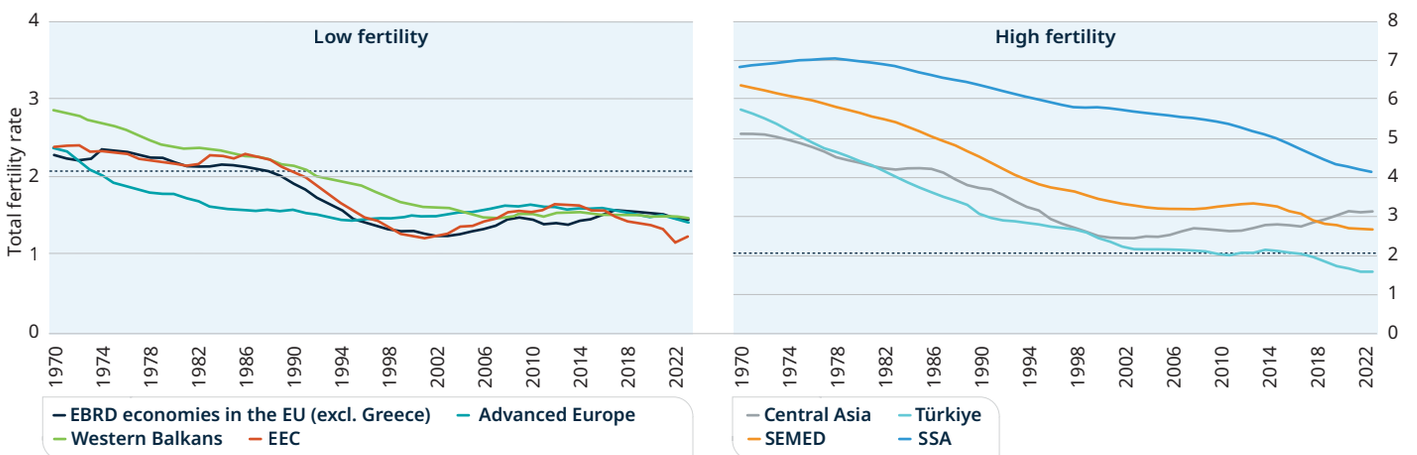
This chapter begins by documenting recent fertility trends across the EBRD regions, highlighting the scale of decline in birth rates. It then examines the key drivers of lower fertility rates, as well as the contribution of changes in fertility to overall population dynamics. Lastly, the chapter reviews policies aimed at raising fertility rates.

FERTILITY TRENDS ACROSS THE EBRD REGIONS

There has been a marked decline in the total fertility rate across the EBRD regions (see Chart 2.1), with many economies now boasting fertility rates well below the replacement rate of 2.1 children per woman. "Total fertility rate" refers to the average number of children a woman would have over her lifetime if prevailing age-specific fertility rates across all age groups remained the same. In some cases, fertility rates have dropped close to 1.3 – a level at which a population shrinks by half over a 45-year period.[5]

High-fertility areas such as sub-Saharan Africa (SSA), the southern and eastern Mediterranean (SEMED) region and Türkiye have seen the steepest falls in fertility rates, although birth rates in SSA and SEMED remain relatively high. In the Western Balkans, fertility declined steadily from the 1970s before levelling out in the late 2000s.

CHART 2.1. Total fertility rates have declined across the EBRD regions



Source: UNDESA (2024) and authors' calculations.

Note: "EBRD economies in the EU (excl. Greece)" comprises Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. "EEC" comprises Armenia, Azerbaijan, Georgia, Moldova and Ukraine. "Central Asia" comprises Kazakhstan, the Kyrgyz Republic, Mongolia, Tajikistan, Turkmenistan and Uzbekistan. "SEMED" comprises Egypt, Iraq, Jordan, Lebanon, Morocco, Tunisia, and the West Bank and Gaza. "SSA" comprises Benin, Côte d'Ivoire, Ghana, Kenya, Nigeria and Senegal. "Western Balkans" comprises Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia. "Advanced Europe" refers to the EU-15 (excluding Greece) plus Norway and Switzerland. Lines represent regional averages weighted by the female population aged 15-49. The dotted lines denote the replacement fertility rate of 2.1 children per woman.

[5] See Billari (2008) and Goldstein et al. (2009).

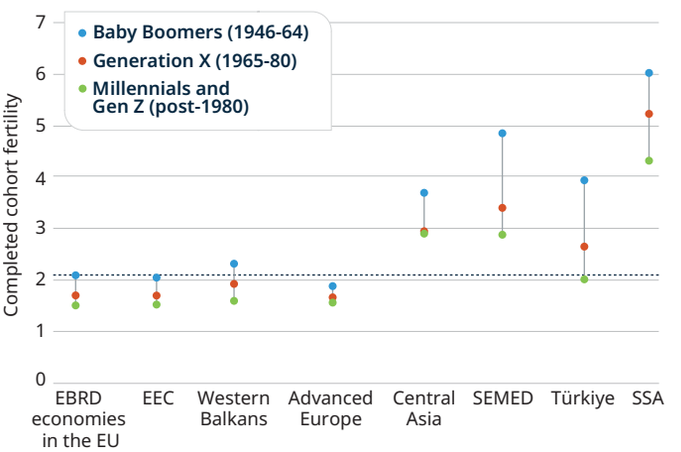
In the EBRD economies in the EU (excluding Greece) and eastern Europe and the Caucasus (EEC), fertility rates were strikingly stable at 2.2-2.4 throughout the 1970s and 1980s, reflecting the prevalence of early marriage, early childbearing and strong two-child social norms.[6] In the 1990s, fertility rates fell sharply across these regions, reflecting the scale of economic and social upheaval during transition. By the early 2000s, several economies in the regions were among the lowest-fertility economies in the world, with birth rates below 1.3 children per woman. A modest rebound followed in the 2000s, as many young adults had delayed starting families until economic conditions improved. At the same time, changes in social norms, including more cohabitation and a stronger focus on individual career aspirations, continued to put downward pressure on fertility, mirroring trends seen in advanced European economies.[7] Central Asia also saw a decline in fertility during the transition years. Unlike other regions, this has been followed by a sustained rise in birth rates over the past two decades, with average rates now well in excess of the replacement rate (see Box 2.1 for more details).

The pace, direction and drivers of changes in fertility vary considerably from economy to economy. Tunisia, for instance, is notable for the speed of the decline in its fertility rate, which dropped from 6.4 births per woman in 1970 to 1.8 (below the replacement rate) in 2023, while real GDP per capita (in constant 2015 US$) remained less than US$ 4,000 (€3,600).[8] By contrast, advanced European economies Germany and Sweden saw similar below-replacement fertility levels when their real GDP per capita levels (in constant 2015 US$) were about US$ 19,300 (€17,400) (1972) and US$ 27,100 (€24,400) (1977), respectively.

At the other end of the spectrum, Kazakhstan has seen a sustained rise in fertility from a post-transition low of 1.9 in 2000 to 3.0 in 2023, around 10 per cent above its 1990 level. Czechia, like Kazakhstan, has seen its fertility rate rise from a post-transition low of 1.14 in 1999 to 1.82 in 2021, the highest in the EU at the time. Suggested reasons for the latter's overperformance include a large decrease in abortions relative to births since 1990 and the use of ART, with the share of children born to assisted reproduction doubling in the past 15 years.[9] Recent data paint a less positive picture, however, with the fertility rate in Czechia falling to 1.45 in 2023, reflecting a general post-Covid drop in fertility rates across the EBRD regions.

Jordan and Kenya are the two EBRD economies that have seen the steepest drop in fertility since 1970, with 5.5 and 4.7 fewer children born per woman, respectively. In both countries, the majority of the decline has occurred since 1990. In Kenya, this has coincided with an increase in the use of modern contraception from 18 per cent in 1989 to 57 per cent in 2022.[10]

CHART 2.2. Completed cohort fertility has declined across the EBRD regions



Source: UNDESA (2024) and authors' calculations.

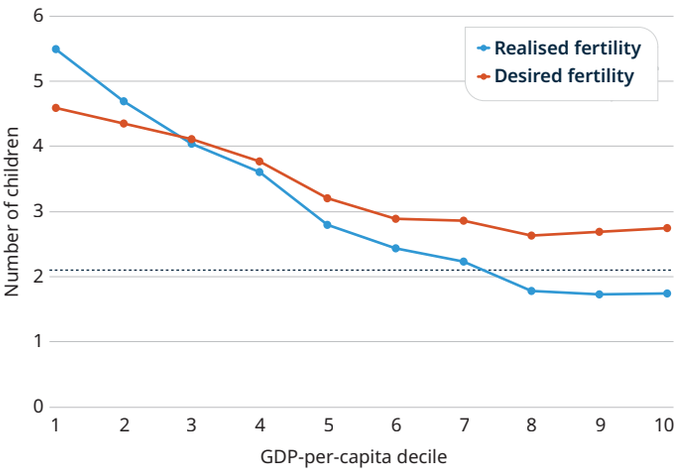
Note: Baby Boomers are defined as those born between 1946 and 1964, Generation X as those born between 1965 and 1980, and Millennials and Generation Z as those born between 1981 and 2000. Generation Z members who are born after 2000 are not included because of the lack of observable data for these cohorts. Baby Boomers and Generation X are based on observed data on age-specific fertility rates for each age and cohort. Millennials and Generation Z are partly based on observed age-specific fertility rates up to the last age observed in 2023. Age-specific fertility rates in 2023 are used to impute missing age-specific fertility rates for the remaining ages up to 40. Regional averages are weighted by the cohort populations at the beginning of childbearing age. The dotted line denotes the replacement fertility rate of 2.1 children per woman.

[6] See Sobotka (2011).
[7] Ibid.
[8] Currency equivalents in this paragraph are in constant 2015 euros.
[9] See Dębiec (2025).
[10] See KNBS and ICF (2023).

Another way to track fertility trends is by examining completed cohort fertility – the average number of children actually borne by women from a given birth cohort by the end of their reproductive years. Unlike the total fertility rate for a given period, which can be distorted by shifts in the timing of births, cohort fertility reflects realised lifetime childbearing. The following analysis approximates near-complete cohort fertility using age 40 as a cut-off, as this provides completed fertility data for those born in 1983 and earlier.

Across all regions, younger generations are having, and are expected to have, fewer children than their predecessors (see Chart 2.2). In EBRD economies in the EU and in advanced Europe, fertility has remained at or below replacement for every cohort, with Millennials and Generation Z projected to average around 1.5 children based on current trends. Fertility in the EEC region and the Western Balkans has declined from just above replacement among Baby Boomers to 1.6 for Millennials and Generation Z. Türkiye has recorded one of the steepest generational drops, from 3.9 among Baby Boomers to just below the replacement rate for Millennials and Generation Z. In Central Asia, fertility has declined from 3.7 for Baby Boomers to less than 3.0 for Generation X, and this rate has remained constant for Millennials and Generation Z. In SSA, while fertility has remained high, it has declined from 6.0 to 4.3 through the generations.

CHART 2.3. **Fertility gaps open up in richer countries**



Source: UNDESA (2024), Demographic and Health Surveys (n.d.), WVS (2024), EVS (2022), Eurobarometer (2002, 2006 and 2011), Gallup (2023), World Bank (n.d.) and authors' calculations.

Note: This chart shows, for each country-year where data are available, the average stated ideal number of children among women of childbearing age (15-49). Question wording varies by survey and falls into two groups: (i) questions on personal ideals that ask the respondent how many children she would like to have and (ii) questions on general ideals that ask about ideal family size. Where both are available, the analysis uses personal ideals; results are similar when restricted to personal ideals only. Country-year estimates are averaged within sample deciles of GDP per capita (in 2015 US$). Realised fertility is measured by the total fertility rate. The dotted line indicates the replacement rate of 2.1 children per woman.

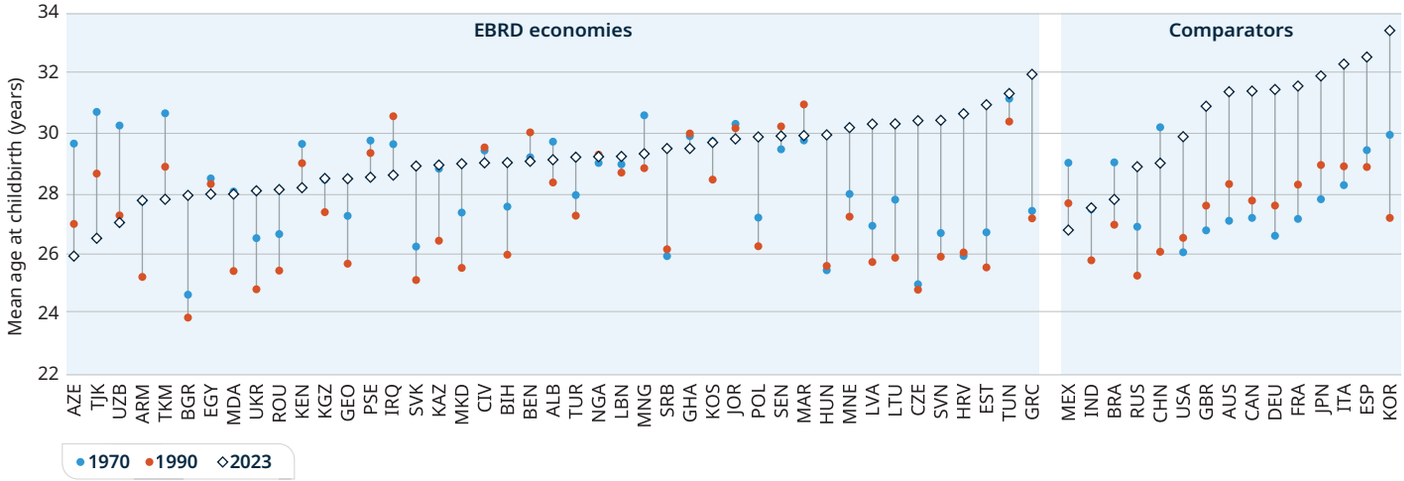
THE GAP BETWEEN FAMILY SIZE ASPIRATIONS AND ACTUAL FERTILITY

Preferences as to the ideal number of children are often formed early in life. Whether they are realised may depend on job security, housing costs, access to childcare, gender inequalities in the labour market and various other factors.[11] The difference between desired and actual fertility provides a measure of unmet fertility, indicating where targeted policies could help individuals achieve their reproductive aspirations.

Actual fertility tends to exceed stated desired fertility in economies with the lowest GDP per capita (see Chart 2.3), reflecting limited access to contraception, high child mortality or prevailing social norms. In higher-income economies, in contrast, a fertility gap emerges: while stated desired fertility remains above two children per woman, actual fertility is about 1.7-1.8, reflecting delayed marriage and the high perceived opportunity cost of childbearing arising from labour-market penalties. This chapter discusses these factors in turn.

[11] See Adserà (2006) and Luci-Greulich and Thévenon (2013).

CHART 2.4. Fertility is shifting to later years



Source: UNDESA (2024) and authors' calculations.

Note: The mean age at childbirth is the mean age of mothers for all live births in a given year, regardless of birth order.

In the EEC region and Türkiye, the mean age at childbirth has increased by

more than two years

over the last three decades

CHILDBEARING LATER IN LIFE

The timing of births affects completed family size, labour-market participation and the balance between generations in the population.[12] Chart 2.4 shows that the average age at childbirth (that is, the mean age of mothers for all live births in a given year, regardless of birth order) has increased since 1970. Historically, the high mean ages in countries such as Azerbaijan and Tajikistan in the 1970s reflect the prevalence of large families (with higher-order births in a woman's 30s and 40s raising the average), while in more recent decades, later marriages, prolonged education, extended career building and the availability of ART have pushed up the mean age at childbirth.[13] In EBRD economies in the EU, the mean age at childbirth has risen, too, from around 26 years in 1970 to just under 30 years in 2023, a similar change to that in advanced Europe, where it has increased from about 28 to 32 years. Even in the EEC region and Türkiye, where mothers have traditionally been younger, the age at childbirth has increased by more than two years over the last three decades. Part of this increase reflects a marked decline in teenage births, which has been associated with gains in maternal and child health, and educational attainment.

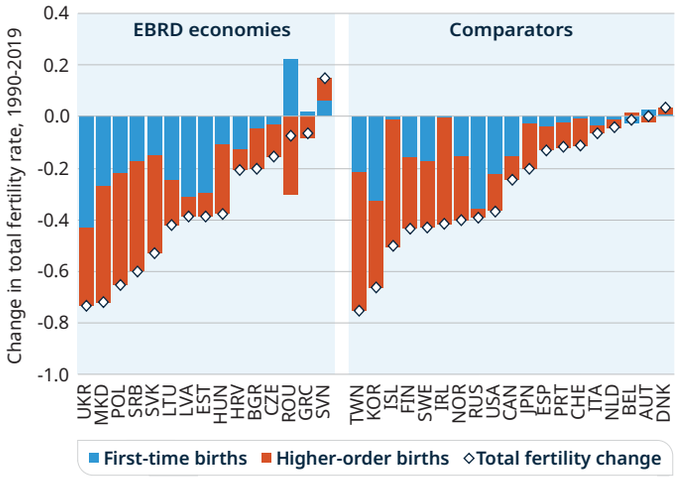
[12] See Kohler, Billari and Ortega (2002) and Mills et al. (2011).
[13] See Billari and Kohler (2004), Sobotka (2016) and Bratti (2023).

BREAKING DOWN FERTILITY DECLINES: FIRST-TIME BIRTHS VERSUS HIGHER-ORDER BIRTHS

The decline in fertility reflects both smaller family sizes and a growing share of women who have no children. Chart 2.5 breaks down the change in the total fertility rate between 1990 and 2019 into two key components: first-time births and higher-order births. The blue bar indicates the impact of changes in the share of women who become mothers. A more negative blue bar, therefore, signals a rising share of women remaining childless and delaying family formation, which has become a significant driver of falling total fertility rates in some economies. The red bar, in contrast, captures changes among women who already have at least one child, showing how family sizes are shifting.

First-time births tend to be particularly sensitive to individuals' long-term expectations about income, labour-market stability and the opportunity costs of parenthood.[14] As women's ability to conceive declines sharply with age, especially after their mid-20s, the likelihood of having a second or third child declines rapidly for couples who start families later, increasing the risk of having fewer children than desired.[15] There has also been a documented decline in male fertility due to environmental, health and lifestyle factors,[16] which also plays a role, but this is beyond the scope of this report.

CHART 2.5. The decline in fertility reflects both smaller family sizes and a growing share of women postponing family formation

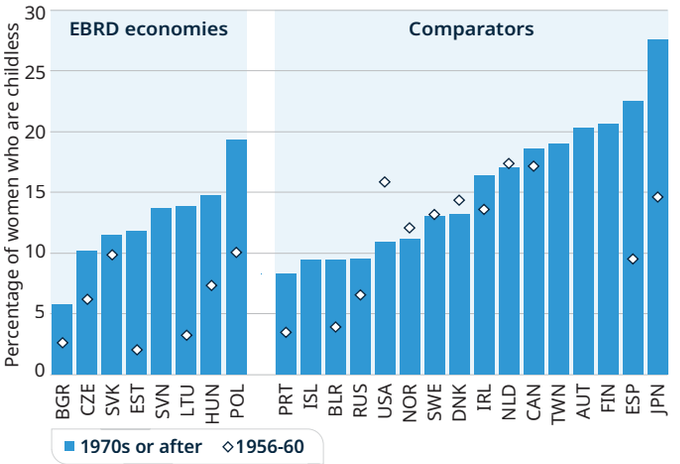


Source: Human Fertility Database (n.d.a and n.d.b), Eurostat data and authors' calculations.

Note: The change in total fertility rate between 1990 and 2019 is calculated by subtracting the earlier total fertility rate from the later one. This difference is then broken down into first-time births and higher-order births. For each birth order, the calculation sums the age-specific fertility rates using the total number of women in each age group as the denominator. This provides a straightforward way of seeing whether changes in the total fertility rate over time are mainly due to (i) more women remaining childless or delaying family formation or (ii) mothers having fewer children on average.

[14] See Heckman and Walker (1990) and Hotz, Klerman and Willis (1997).
[15] See Leridon (2008) and Schmidt et al. (2012).
[16] See, for example, Huang et al. (2023).

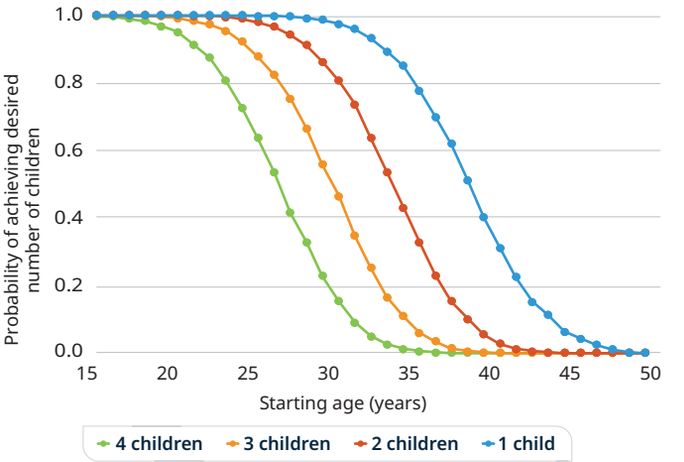
CHART 2.6. The share of childless women has increased through the generations



Source: Human Fertility Database (n.d.a).

Note: This chart shows the average share of women that are childless by birth cohort. Bars represent women born from 1970 onwards. Diamonds represent women born between 1956 and 1960. Data on the 1956-60 cohort are missing for Austria, Finland, Iceland, Slovenia and Taipei China. Averages are calculated from all available data within the specified cohort ranges.

CHART 2.7. Probability of achieving a given number of children declines with age



Source: Demographic and Health Surveys (n.d.) based on the methodology of Geruso, LoPalo and Spears (2023) and authors' calculations.

Note: Effective fecundability (the probability of starting a pregnancy in a given month that ends in a birth) by age in months is estimated using pooled contraceptive calendar data in the Demographic and Health Surveys, using a sample of woman-months, where the woman is married, not currently pregnant, not using contraception, has not had a terminated pregnancy in the past three months and has not been pregnant in the past 12 months. These probabilities are used to simulate the chances of achieving a specified number of children before the end of the reproductive period, depending on the age at which exposure to conception risk begins (see Box 2.2).

Chart 2.6 shows the share of women who have had no births by the end of their childbearing years (completed cohort childlessness). In almost all economies, childlessness is higher for cohorts born from 1970 onwards (bars) than for women born in 1956-60 (diamonds), indicating a clear generational increase. In the EBRD regions, childlessness in recent cohorts ranges from about 5 per cent in Bulgaria to nearly 19 per cent in Poland, with central European economies in the 10-15 per cent range. Among comparators, levels are higher, on average, reaching 20 per cent or more in several economies (such as Finland and Spain) and close to 30 per cent in Japan, while a few (such as Portugal and Iceland) remain below 10 per cent. Overall, the chart documents a broad rise in completed cohort childlessness, with significant variation from economy to economy.[17]

Assuming unchanged fertility intentions, later starts substantially reduce the probability of achieving desired family size (see Chart 2.7, which simulates the probability of having the desired number of children based on the average likelihood of conceiving at each age; see Box 2.2 for more details). For example, the likelihood of having two children falls from 99 per cent when starting at age 24 to 64 per cent when starting at age 32. The probability of having three or more children falls substantially once childbearing starts after the late 20s, with a near-zero probability of four births if starting after age 35. These figures reflect average (unconditional) probabilities and do not take into account behavioural responses such as the use of ART, which can increase the likelihood of conception. The postponement of births can, therefore, accelerate the fertility decline beyond what can be explained by changing preferences with regard to the total number of children.[18]

[17] See Bauernschuster, Hener and Rainer (2016).

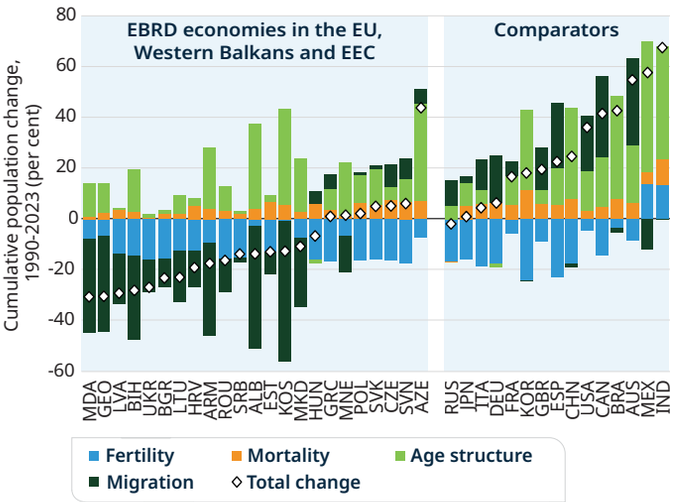
[18] See Kohler, Billari and Ortega (2002) and Balbo, Billari and Mills (2013).

CHANGES IN FERTILITY AS A MAJOR DRIVER OF POPULATION CHANGE

To isolate the contribution of lower fertility to population change between 1990 and 2023, the analysis distinguishes between changes in (i) fertility, (ii) mortality, (iii) net migration and (iv) initial age structure, as discussed in Box 2.3. (More broadly, see Chapter 1 for a discussion of the demographic forces shaping population trends and their implications for population growth or decline across different regions.) The breakdown is based on the analysis of counterfactual scenarios, where one factor at a time is held constant (assuming replacement-level fertility rates, baseline mortality, zero net migration or an unchanged age structure). Initial age structure captures the mechanical exposure effect of who is in the population at the start: even with identical age-specific fertility and mortality rates, a country that begins with a larger share of women of childbearing age will record more births, while a country that begins with a larger elderly cohort will record more deaths. In other words, it measures the impact of cohort size (not changes in rates).

In most post-communist economies in the EBRD regions, low fertility and high net emigration have been the dominant causes of population decline, often outweighing any gains from favourable initial age structures (see Chart 2.8 and Chapter 1). Mortality has made only a small difference. Despite periods of high death rates, especially in the 1990s, lower death rates over time have increased the population slightly. In almost all cases, this contribution is much smaller than the impact of fertility and net migration. For example, Moldova, Georgia and Latvia have experienced the largest cumulative population losses since 1990, with total declines of around 30 per cent of their 1990 populations. In all three of these countries, persistently low fertility and large net emigration flows have been the major contributors, while favourable initial age structures have done little to offset those developments. At the other end of the scale, Albania and Kosovo stand out, in that despite sizeable emigration, their relatively young initial age structures have mitigated much of the loss. Box 2.4 discusses changes in the fertility of international migrants over time, exploring another dimension of the demographic impact of migration.

CHART 2.8. **Low fertility and high emigration have driven population change in post-communist economies**



Source: UNDESA (2024), Tóth (2025) and authors' calculations.

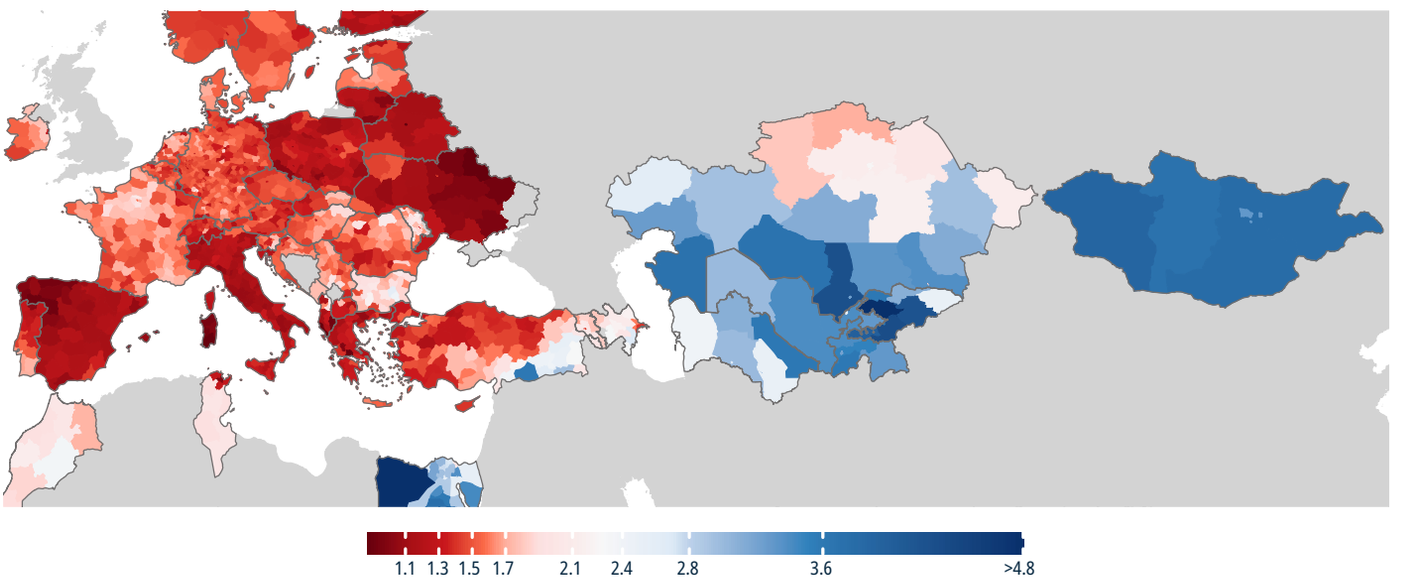
Note: Bar components correspond to the estimated contributions that fertility, migration, mortality and initial age structure make to total population change. See Box 2.3 for methodological details.

SUBNATIONAL FERTILITY PATTERNS

Economy-level fertility patterns mask substantial variation within countries (see Chart 2.9). High-fertility areas often cluster in regions with younger age structures, lower urbanisation rates and distinct cultural norms around family size, while lower-fertility areas are more prevalent in economically developed and urbanised regions. In Poland, Hungary and Romania, for example, metropolitan and economically developed regions consistently exhibit lower fertility rates than surrounding rural or less-developed areas. Intra-country fertility differences of more than one child per woman are evident in Türkiye and Kazakhstan, reflecting diverse demographic, economic and cultural contexts.

In sum, regional differences in birth rates are closely linked to regional economic structures, labour-market opportunities, housing affordability and cultural norms. These can, in turn, result in spatial imbalances in terms of population ageing and availability of labour.[19] Persistently low fertility in economically dynamic metropolitan areas can exacerbate labour shortages and increase dependence on migration, while higher fertility in less-developed regions may not translate into economic growth if job creation lags.[20]

CHART 2.9. **Fertility rates also vary widely within countries**

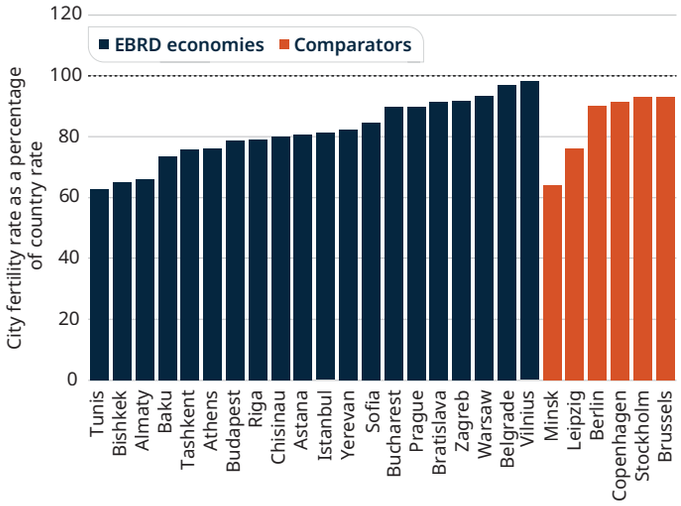


Source: Demographic and Health Surveys (n.d.), Eurostat (2025a), Sayed (2020), UNICEF MICS (n.d.) for 2018, 2019, 2021 and 2023, national statistical offices and authors' calculations.

Note: Data are for 2024 for Belarus, Kazakhstan, Moldova and Morocco; 2023 for Austria, Azerbaijan, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, the Kyrgyz Republic, Liechtenstein, Lithuania, Luxembourg, Montenegro, North Macedonia, Norway, Poland, Portugal, Romania, Serbia, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Tajikistan and Tunisia; 2022 for Albania, Armenia, Latvia, the Netherlands and Türkiye; 2021 for Ukraine and Uzbekistan; 2019 for Turkmenistan; and 2018 for Egypt and Mongolia. Data are not available for Bosnia and Herzegovina or Kosovo; they are also unavailable for Crimea, Sevastopol and the Donetsk and Luhansk *oblasts* in Ukraine.

[19] See Reher (2004), Lutz, Skirbekk and Testa (2006) and Kulu (2013).
[20] See Bhattacharjee et al. (2024).

CHART 2.10. Fertility rates in major cities are consistently lower



Source: Eurostat (2025a), UNICEF MICS (n.d.) for 2018, 2019, 2021 and 2023, national statistical offices and authors' calculations.

Note: Data refer to the most recent year available, matching the subnational data in Chart 2.9, except for Riga, Vilnius, Stockholm and Istanbul, where figures are for 2024.

Large cities, such as Budapest, Istanbul and Prague, have fertility rates about

10-20%

below national averages

Indeed, city-level fertility tends to be below the national fertility rate, often by a substantial margin (see Chart 2.10). Large metropolitan areas, such as Budapest, Istanbul and Prague, have fertility levels that are 10-20 per cent lower than the respective national averages. In Tunis and Bishkek, for instance, the fertility rate is around two-thirds of the national average. This pattern is likely to matter more in the future, as urbanisation and agglomeration trends continue. With more people expected to live in large cities, the growing concentration of the population in low-fertility urban areas may exert further downward pressure on national birth rates, even if fertility rates within cities and rural areas remain stable. Addressing barriers to family formation in urban settings (such as housing costs, access to childcare and work-life balance) may, therefore, be key to stabilising fertility over time.

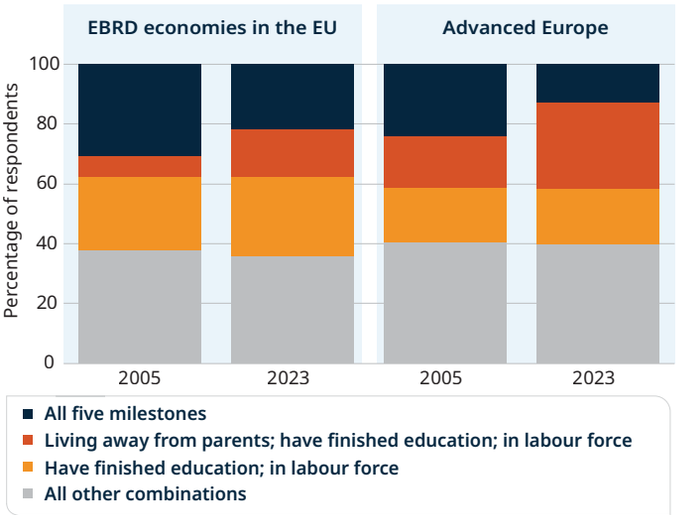
ECONOMIC DRIVERS OF FERTILITY

Family formation usually follows a sequence of key "adult milestones" in the EBRD regions. Finishing education, joining the labour force, moving out of the parental home and getting married all tend to shape readiness to have children.[21] Spending more years in education often delays entry into the labour market, reducing the overlap between peak earning years and peak fertility years.[22] Secure, stable employment and separate housing enable individuals to live independently and form partnerships. In societies where births outside marriage are less common, postponing marriage also tends to delay having children.

In EBRD economies in the EU, the share of the population completing all five milestones by age 35 declined from 31 per cent in 2005 to 22 per cent in 2023 (see Chart 2.11). In contrast, the share achieving economic independence (living away from parents, completing education and being in the labour force) without family formation rose from 7 per cent to 16 per cent. A similar shift is observable in advanced Europe, though the changes are more pronounced. There, the share of 25- to 34-year-olds completing all five milestones fell from 24 per cent in 2005 to 13 per cent in 2023, alongside a larger rise in economic independence without family formation from 17 per cent to 29 per cent. This also mirrors the trend observed in the United States of America.[23]

Chart 2.12 shows wide cross-country variation in how much women's employment falls after the first child – the "motherhood penalty".[24] In Scandinavia (Norway, Sweden and Denmark), penalties are among the lowest (below 15 per cent), reflecting extensive childcare provision and more equal parental leave.[25] Yet even there, fertility remains modest. Post-communist EBRD economies, meanwhile, display a much wider range. In Poland, Hungary and the Slovak Republic, motherhood penalties exceed 30 per cent, coinciding with some of the lowest fertility rates in Europe, reflecting limited childcare access and more traditional labour-market structures.[26]

CHART 2.11. Declining share of young adults in EBRD economies in the EU and advanced Europe completing all traditional milestones of adulthood by age 35



Source: Eurostat (2025b) and authors' calculations. Based on the methodology of Hemez and Vespa (2025).

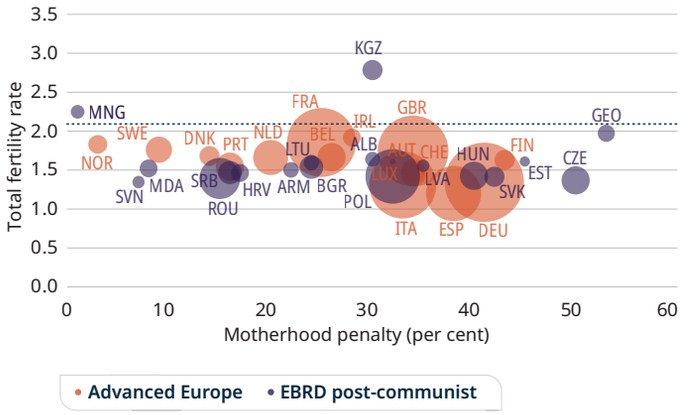
Note: This chart shows the shares of 25- to 34-year-olds in EBRD economies in the EU and advanced Europe that have achieved some or all of the following five traditional markers of adulthood: completing education, joining the labour force, moving out of the parental home, getting married and having children. The three most common milestone combinations are shown separately.

By contrast, several EBRD economies (such as Slovenia, Moldova, Romania and Serbia) have relatively low motherhood penalties (below 20 per cent), although here, too, fertility remains below the replacement rate. This diversity highlights the mixed nature of fertility outcomes in advanced Europe and post-communist countries (with some close to replacement and others very low). Reducing time costs through childcare and more equal parental leave is crucial, as generous cash transfers alone cannot fully offset the long-term career costs of motherhood.[27]

The chart, therefore, does not imply a strict one-to-one link between high penalties and low fertility. Rather, it shows that large penalties make it harder to sustain both high fertility and high female employment. Where penalties are reduced (through affordable childcare, flexible work and equal promotion opportunities), women face fewer trade-offs and fertility policies are more likely to succeed.[28]

[21] See Hemez and Vespa (2025).
[22] See Bongaarts (2003) and Lutz, Cuaresma and Sanderson (2008).
[23] See Hemez and Vespa (2025).
[24] See Kleven et al. (2019).
[25] See Kleven, Landais and Søgaard (2021).
[26] See Budig, Misra and Boeckmann (2016).
[27] See Frejka et al. (2016).
[28] See Mörk, Sjögren and Svaleryd (2013), Healy and Heissel (2024) and Kearney and Levine (2025).

CHART 2.12. Motherhood penalties at work weigh on family planning decisions



Source: UNDESA (2024), Kleven et al. (2025) and authors' calculations.

Note: This chart plots the estimated motherhood penalty for each country against its total fertility rate. The motherhood penalty measures the percentage decline in women's employment relative to men's following the birth of a first child. For example, a motherhood penalty of 20 per cent means that women's employment falls 20 per cent further behind men's after having children. Bubble sizes reflect the size of the female population. The total fertility rate and the female population are averaged over the same sample periods as the motherhood penalty. The replacement rate (2.1) is shown as a dotted black line.

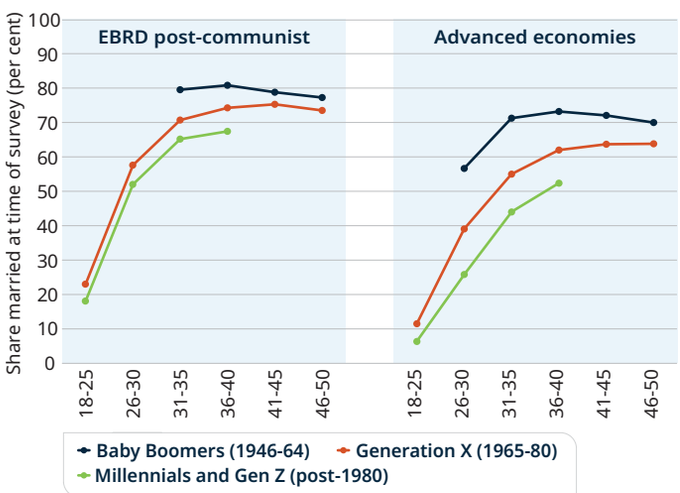
DECLINING PREVALENCE OF MARRIAGE

In most societies across the EBRD regions, marriage remains the dominant context for childbearing, and delays in getting married often translate into lower completed fertility.[29] The rising age of first formal marriage and the increasing prevalence of non-marriage (see Chart 2.13) are closely tied to broader societal shifts (such as higher educational attainment, changing gender roles and evolving life aspirations) that are shaping both the timing of childbirth and the total number of children born. Empirical evidence shows that later marriage reduces the likelihood of higher-order births, contributing to fertility decline.[30]

In the post-communist EBRD economies, the share of individuals aged 31-35 who are formally married has fallen over the generations, from 80 per cent among Baby Boomers to 65 per cent for Millennials. Advanced economies display a similar pattern, with a steeper cohort gradient at prime ages: at 31-35, marriage shares have declined from 71 per cent (Baby Boomers) to 44 per cent (Millennials).

The link between declining marriage rates and fertility differs across EBRD economies in the EU. In some countries, births outside marriage have become a common pathway to family formation. Bulgaria and Slovenia, for example, boast non-marital birth shares of 58.4 per cent and 57.7 per cent, respectively – even higher than the levels observed in Nordic countries. By contrast, in more traditional settings, such as Poland, Croatia and Greece, the share of births outside marriage remains much lower, at 25.4 per cent, 21.5 per cent and 12.4 per cent, respectively.[31] These differences suggest that the weakening of marriage as an institution does not influence fertility in the same way everywhere; in some societies, non-marital childbearing partly offsets lower marriage rates, while in others, there is more of a direct link between fewer marriages and fewer children.

CHART 2.13. Marriage rates are declining across cohorts, especially among the young



Source: WVS (2024), EVS (2022), Gallup (2023) and authors' calculations.

Note: This chart shows the share of each age group that is married at the time of the survey. "Advanced economies" comprise advanced Europe, Australia, Canada, Japan, New Zealand, South Korea and the United States. For the "Millennials and Gen Z" grouping, the 31-35 and 36-40 age groups consist solely of Millennials.

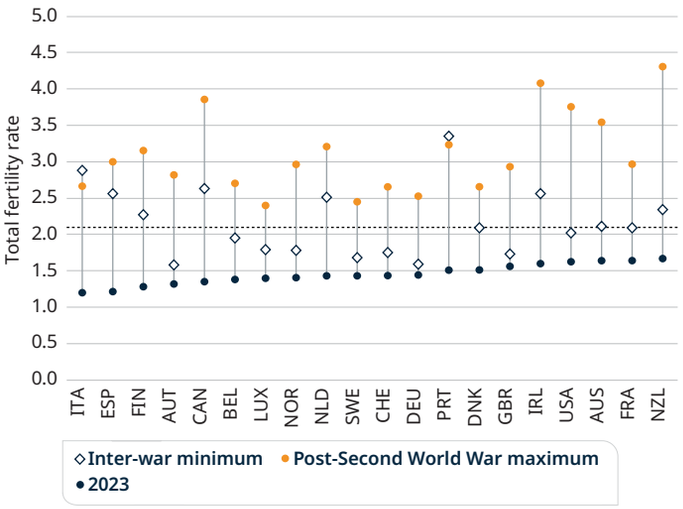
[29] See Billari and Kohler (2004) and Sobotka and Toulemon (2008).
[30] See Ní Bhrolcháin and Beaujouan (2012).
[31] See Our World in Data (2025b).

TODAY'S FERTILITY DECLINE MIRRORS THAT OF THE YEARS BETWEEN THE FIRST AND SECOND WORLD WARS

Today's period of persistently low fertility is not without precedent. Many advanced economies experienced sub-replacement fertility rates between the First and Second World Wars. By the 1920s and 1930s, birth rates in much of Europe had fallen sharply, with more than half the population living in countries where fertility was less than 2.1.[32] This decline reflected the rise of small-family ideals, secularisation and greater individual autonomy in reproductive choices, while economic hardship may also have played a role.[33] The subsequent post-Second World War baby boom showed how fertility can rebound quickly, underpinned by robust economic growth, the rise of the welfare state and broad-based optimism about the future (see Chart 2.14, which shows both the lowest total fertility rate recorded between 1921 and 1938 and the post-Second World War maximum reached from 1950 onwards, alongside the level of fertility recorded in 2023).[34] During the post-Second World War baby boom, total fertility exceeded 3.0 in economies such as Canada, New Zealand and the United States.

Historically, rebounds in fertility have been predominantly linked to profound shifts in economic prosperity, family policy and gender norms.[35] In this respect, the current context, characterised by slower economic growth, changing partnership dynamics and high housing costs, differs sharply from the conditions that fuelled the fertility rebound in the mid-20th century.

CHART 2.14. Today's fertility decline in advanced economies echoes the inter-war baby bust



Source: UNDESA (2024), Gapminder (2024) and authors' calculations.

Note: The replacement rate (2.1) is shown as a dotted black line. The inter-war minimum refers to the lowest total fertility rate achieved by a country between 1921 and 1938, whereas the post-Second World War maximum refers to data from 1950 onwards where UN World Population Prospects data are available.

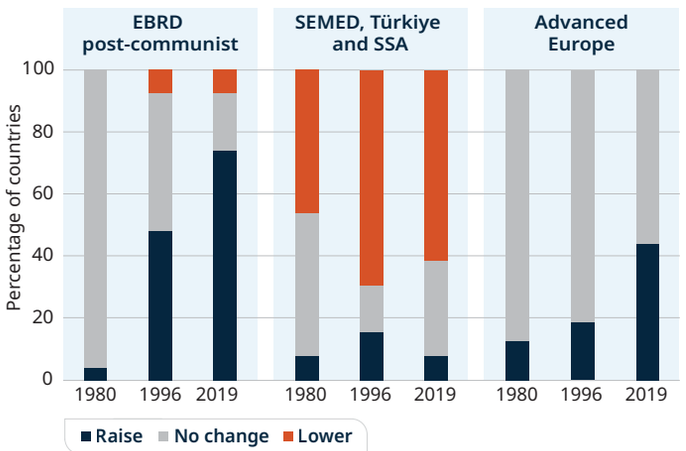
[32] See Chesnais (1992).
[33] See Lesthaeghe (2010) and Guinnane (2011).
[34] See Van Bavel and Reher (2013).
[35] See Van Bavel and Reher (2013) and Sobotka (2017).

PRO-NATALIST POLICIES

Many governments have responded to sustained declines in fertility to below replacement rates by implementing policy measures aimed specifically at raising birth rates (see Chart 2.15). For instance, barely any post-communist EBRD economies had such policies in 1980, whereas the vast majority did in 2019. By contrast, in higher-fertility regions, such as SSA and parts of the SEMED region, governments have sought to *lower* fertility, reflecting the pressures of rapid population growth. In post-communist countries in the EBRD regions, measures to encourage higher fertility have included unconditional cash transfers (such as Poland's "Family 500+" programme introduced in 2016), income-tax exemptions for mothers of multiple children (as seen in Hungary), extended paid parental leave (as observed in Bulgaria and Estonia) and subsidised access to childcare and housing. These interventions aim to reduce the financial burden of childrearing and make it easier for parents to combine work and family life. By contrast, in previous decades, some countries in Central Asia, such as Tajikistan, promoted fertility-reducing policies, including family planning programmes and the widespread use of birth-control methods, particularly during and shortly after the Soviet era.[36]

Chart 2.16 distinguishes between four types of pro-natalist support. "Childcare services" captures public spending on early childhood education and care, including subsidised nurseries, kindergartens and other formal childcare arrangements. "Cash benefits" includes one-off payments, usually made at the time of birth (or

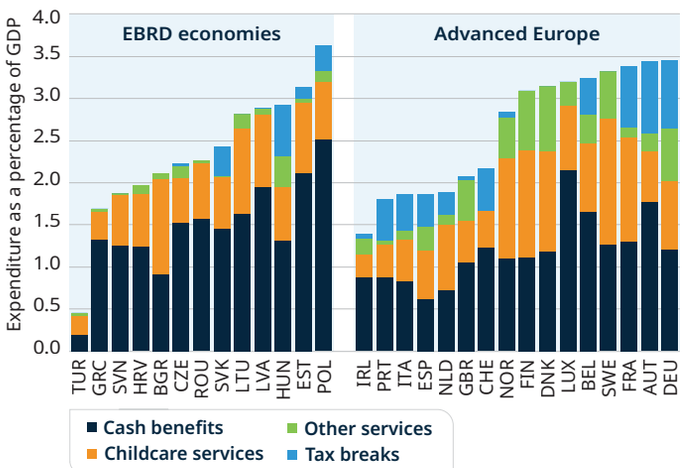
CHART 2.15. As fertility has fallen, more countries have introduced policies to raise birth rates



Source: UNDESA (n.d. and 2021), United Nations Department of International Economic and Social Affairs (1982) and authors' calculations.

Note: Data for 1980 are taken from Table 41 in United Nations Department of International Economic and Social Affairs (1982). Figures for 1980 for Central Asia, Moldova, the Caucasus, the Western Balkans, Czechia and the Slovak Republic have been imputed using values for their respective predecessor states; figures for Ukraine use the value for the Ukrainian Soviet Socialist Republic. Data for 1996 are taken from the UN Population Policies Database,[37] while data for 2019 are from UNDESA (2021). Values for 2019 refer to stated policies in the 2015-19 period. "Raise" and "lower" refer to government policies aimed at increasing and decreasing birth rates, respectively. "No change" indicates either policies that actively seek to keep birth rates constant or an absence of policy intervention.

CHART 2.16. Significant expenditure on a broad range of pro-natalist measures



Source: OECD SOCX, OECD (n.d.) and authors' calculations.

Note: This chart shows pro-natalist expenditure as a percentage of GDP in 2021. Data on tax breaks are not available for Bulgaria, Croatia or Romania.

[36] See Henry and Juraqulova (2020).
[37] See UNDESA (n.d.).

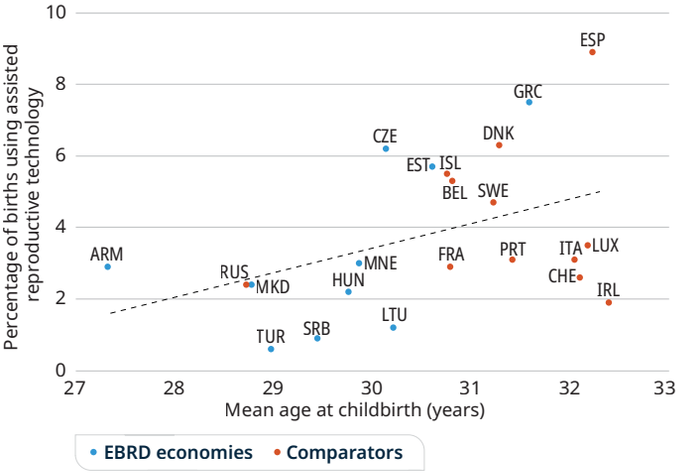
adoption), to help families cover initial expenses, as well as regular transfers to families with children (such as family allowances and parental leave benefits), which are typically paid monthly or quarterly. "Tax breaks" reduce the income-tax burden of families depending on the number of dependent children or other eligibility criteria. And lastly, "other services" includes additional in-kind or mixed forms of support for children and families, such as home help and subsidised school meals, transport and other entitlements.

Spending on these measures, expressed as a percentage of GDP in 2021, varies widely across countries. For example, Estonia and Poland spend between 3 and 4 per cent of GDP, largely on periodic cash benefits including family allowances and parental leave benefits. In contrast, Türkiye spends around 0.5 per cent of GDP, relying more heavily on smaller cash transfers and limited in-kind services, such as childcare. Differences in spending levels reflect not only fiscal capacity, but also variations in demographic pressures and the political prioritisation of family support.[38]

Well-designed family policy packages (combining income support with measures to help parents reconcile work and family life) can slow the decline in fertility, although the effects tend to be modest and take time to materialise. Country-specific institutional contexts and social norms shape the response to incentives offered by governments.[39]

Advanced European economies tend to spend more on fertility-supporting measures (in excess of 3 per cent of GDP for half of them), with policy packages offering a mix of cash benefits (family allowances and parental leave payments), tax breaks and services (particularly subsidised childcare). Affordable childcare and flexible leave schemes tend to be more effective in supporting female labour-force participation and reducing the career costs associated with childbearing.[40] Two concrete examples show how design matters. Sweden's childcare fee-cap reform set low, fixed caps on daycare fees (about

CHART 2.17. Higher use of assisted reproductive technology is associated with increases in age at childbirth



Source: European Society of Human Reproduction and Embryology data in Our World in Data (2025a), UNDESA (2024) and authors' calculations.

Note: All values are for 2019.

3 per cent of income for the first child, 2 per cent for the second and 1 per cent for the third, up to a monthly ceiling), cutting parents' out-of-pocket costs and nudging up first-birth transitions. Meanwhile, Germany's 2007 introduction of *Elterngeld* (a parental allowance) made leave shorter but better paid, replacing the previous low, flat benefit with an earnings-related payment of about two-thirds of prior net pay (typically capped at €1,800 per month) for 12 months, extended to 14 months if the second parent took at least two months. This kept parents attached to their jobs, increased fathers' take-up of leave and was followed by higher maternal employment and earnings a few years after birth, with the strongest effects among higher earners.[41] In the EBRD regions, in contrast, the policy mix has been tilted towards cash transfers.

[38] See Griesinger, Diedrich and Altgassen (2007).
[39] See OECD (2003) and Dahl and Løken (2024).
[40] See Thévenon and Gauthier (2011) and Luci-Greulich and Thévenon (2013).
[41] See Mörk, Sjögren and Svaleryd (2013) and Kluve and Schmitz (2018).

ART, such as in vitro fertilisation, frozen embryo transfer and egg donation, has also been on the rise. This has become increasingly relevant in situations where childbearing has been postponed, as it can help counteract the biological decline in fertility with age. Indeed, as the average maternal age rises, the share of births involving ART also increases (see Chart 2.17).

The use of ART remains considerably lower in many of the EBRD economies than in advanced European economies. ART accounts for roughly 6.3 per cent of births in Denmark, compared with about 5.7 per cent in Estonia, while it remains below 2 per cent in countries such as Serbia and Türkiye. These differences probably reflect variations not just in maternal age profile, but also in affordability and funding arrangements. In many advanced European countries, ART is partially or fully covered by public health systems, though often subject to age limits or cycle caps. In the EBRD regions, in contrast, ART tends to be privately funded. Research confirms that when Germany tightened public funding for such treatments in 2004, the number of ART cycles plummeted from more than 102,000 to fewer than 57,000 the following year, demonstrating that funding directly influences uptake.[42] Broadening public coverage of ART treatments could, therefore, help to mitigate fertility delays.

ART accounts for roughly

6.3%

of births in Denmark and 5.7% in Estonia, but fewer than 2% in Serbia and Türkiye

CASH BENEFITS HAVE TRANSITORY EFFECTS ON FERTILITY

As discussed, family policies that reduce the cost of childrearing (such as cash transfers, child allowances or birth grants) are frequently used to counteract declines in fertility. While most evaluations point to modest, short-run increases in fertility, these effects are often concentrated in specific demographic or income groups. For instance, Québec's child grant programme, which was launched in 1988 and offered up to CAD 8,000 per child (around €11,000 in 2024 prices), led to a 12 per cent average increase in fertility across all eligible families, with an increase of 25 per cent for those receiving the maximum amount. In Germany, reforms to the child benefit system in the mid-1990s also had differential effects across income groups. A 1996 reform raised benefit levels substantially for higher-income couples, resulting in a 4-6 percentage point increase in the likelihood of having a second child within three years (equivalent to a 10-15 per cent increase relative to pre-reform second birth rates in this group). However, fertility responses among lower-income and less-educated households were negligible, implying that cash transfers only influence fertility behaviour when the perceived financial gain outweighs the opportunity cost of childbearing.[43]

A number of economies in the EBRD regions expanded their pro-natalist packages in the 2010s and 2020s.[44] In Poland, the universal "Family 500+" programme introduced in 2016 is estimated to have raised the annual probability of childbirth by about 1.5 percentage points in the short term. However, this average effect hides significant differences across groups. Women aged 31-40 experienced the largest boost in fertility, with an increase of 0.7-1.8 percentage points, whereas women aged 21-30 saw a decline of 2.2-2.6 percentage points, and higher-income households showed a modest drop

[42] See Griesinger, Diedrich and Altgassen (2007).

[43] See Milligan (2005) and Riphahn and Wiynck (2017).
[44] See Cook, Iarskaia-Smirnova and Kozlov (2023) and Inglot (2020).

of around 1.0 percentage point. These findings show that the short-run fertility gains attributable to Family 500+ were moderate overall and concentrated among older mothers, with no positive effect on younger and wealthier women.[45]

In Georgia, the Orthodox Church launched a widely publicised initiative in 2007, whereby the Patriarch pledged to baptise personally all third or higher-order children born into Georgian Orthodox families. This gesture, aimed at reinforcing traditional values and encouraging larger families, was associated with a 17 per cent rise in the country's total fertility rate (equivalent to 0.3 additional children per woman), a 42 per cent increase in birth rates among married Georgian Orthodox women, and a doubling of third and higher-order births within marriage. These fertility responses were accompanied by higher marriage rates and a decline in reported abortions.[46]

In Hungary, two flagship measures – a flat-rate childrearing support allowance (1993) and an expansion of child tax relief (from 1999) – both led to increases in the likelihood of parents having a third child, but for different groups: cash worked best for less-educated parents, while the tax relief primarily shifted behaviour among tertiary-educated couples. Relative to the 1980s, the likelihood of a third child was about 35 per cent higher in 1993-98, 60 per cent higher in 1999-2005 and 65 per cent higher in 2006-09.[47]

Across the literature, cash transfers on their own tend to yield small, short-lived fertility gains, often reflecting changes in timing rather than sustained increases in family size. By contrast, greater availability of affordable childcare is associated with higher fertility across countries. The effects of maternity/parental leave are mixed and depend on duration, benefit level and financing, with clear trade-offs for women's employment and wages; longer leave periods can also carry career costs, making net fertility effects uncertain. Across policy bundles and countries, broader work-family reconciliation packages (combining childcare, leave and flexible work) show a positive, albeit moderate association with fertility.[48]

[45] See Bokun (2024).
[46] See Chung et al. (2025).
[47] See Spéder, Murinkó and Oláh (2020).
[48] See OECD (2024).

CONCLUSIONS AND POLICY IMPLICATIONS

Fertility has been in persistent decline across the EBRD regions, falling to historically low levels in many economies. As in advanced economies, these declines reflect later marriage and childbearing, and sustained increases in women's education, as well as greater career aspirations and the high perceived opportunity cost of motherhood. Consequently, many people end up having fewer children than they consider ideal, mirroring fertility gaps seen in advanced economies. The experience of past fertility rebounds, notably after the Second World War, implies that such shifts are not irreversible. However, today's demographic, economic and institutional context differs considerably from that of the mid-20th century.

The economic and social implications of sub-replacement fertility are mixed. The relationship between fertility, population stability and living standards depends on factors such as (i) productivity growth through automation and better education, (ii) dependency ratios, (iii) migration flows and (iv) the age structure of the labour force, as discussed in Chapter 1. The conventional benchmark of 2.1 births per woman does not need to be a one-size-fits-all policy target, as economies' circumstances and cultural norms vary.[49] Moderate departures from replacement fertility may be sustainable, or even beneficial, in some settings.

Packages of policy measures can facilitate an increase in the birth rate, provided policies are stable and seen as credible. As decisions on childbearing are made over long time horizons, measures that are fragmented or short lived tend to have only temporary effects.

The provision of well-designed parental leave, childcare and high-quality early childhood education reduce perceived work-family trade-offs and help parents realise their desired family size. Expanding affordable childcare has a particularly strong effect on fertility among employed and highly educated women.[50] Generous, predictable parental leave schemes can accelerate transitions to the next birth, but effects on completed lifetime fertility tend to be small, while some paternity-leave expansions show limited effects on higher-order births.[51]

Easing economic barriers, such as those related to high housing costs and early-career job insecurity, supports earlier childbearing.[52] High house prices, in contrast, are associated with delayed first births and fewer births overall, and these effects can be sizeable.[53] Unemployment, temporary contracts and perceived uncertainty surrounding career starts are also linked to postponed or forgone births, with stronger effects where labour-market risks tend to be higher for the young.

Targeted cash allowances and tax credits tend to raise births in the short term, but those effects tend to be relatively modest, fizzling out without complementary enhancements to childcare and parental leave.[54] While large child allowances also yield meaningful poverty reduction, they also reduce the labour supply among mothers.

[49] See Weil (2024) and Gietel-Basten and Scherbov (2020).

[50] See Cascio (2009), Bauernschuster, Hener and Rainer (2016) and Duvander et al. (2019).
[51] See Thomas et al. (2022).
[52] See Adserà (2011) and Comolli (2017).
[53] See Lovenheim and Mumford (2013), Fazio et al. (2024) and Li (2024).
[54] See Milligan (2005), Laroque and Salanié (2014), Gromadzki (2024) and OECD (2024).

BOX 2.1.

CENTRAL ASIA'S FERTILITY REBOUND

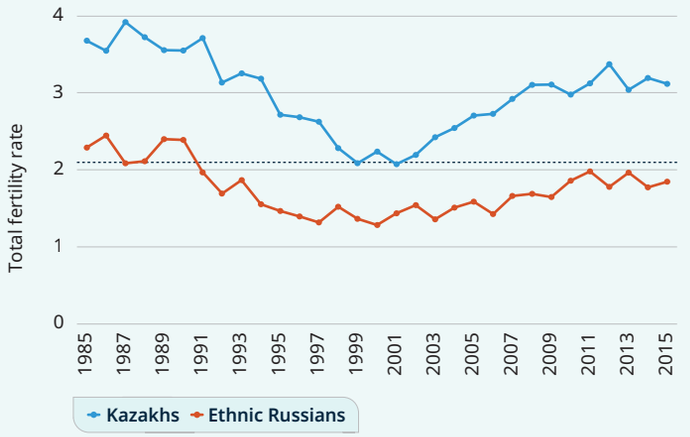
After a broad decline in the 1990s, Central Asia has seen a sustained rise in fertility, with total fertility rates now ranging between 2.5 and 3.5 across the region, a pattern distinct from that observed in most other economies. This convergence is also striking in light of the countries' diverse starting points in the early 1980s (with three births per woman in Kazakhstan and six in Tajikistan).

These trends in Central Asia may, in part, reflect changes in the composition of countries' populations, as ethnic groups in the region tend to differ in terms of typical family size, with differences shaped by cultural and religious norms.[55] In Kazakhstan, for instance, fertility has been consistently higher for ethnic Kazakh women than for ethnic Russian women, although the fertility rates of the two groups have experienced similar trajectories over time, with a decline in the 1990s followed by a rebound (see Chart 2.1.1).[56]

After the dissolution of the Soviet Union, the ethnic mix in Central Asia shifted, with a reduction in the share of people identifying as Russian due to emigration and an increase in the share of each country's main ethnic group (for instance, Tajiks in Tajikistan or Kazakhs in Kazakhstan; see Chart 2.1.2). The change was particularly pronounced in Kazakhstan, where, from the 1980s to the 2020s, the share of people identifying as Kazakh increased from about one-third to around 70 per cent and the share of people identifying as Russian declined from around 40 per cent of the population to around 15 per cent. Such compositional shifts can change national fertility averages.[57]

Taken together, the evidence shows that the interplay between cultural norms and changes in the composition of populations (for instance, on account of migration) can produce sizeable shifts in average fertility.[58]

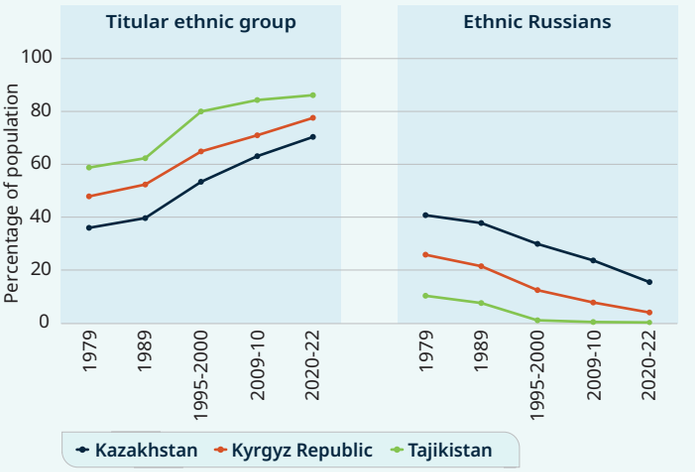
CHART 2.1.1. In Kazakhstan, estimated fertility rates are higher for ethnic Kazakh women than for ethnic Russian women



Source: Demographic and Health Surveys (n.d.), UNICEF MICS (n.d.) and authors' calculations.

Note: Group-specific fertility is estimated using full birth histories in Demographic and Health Surveys and by applying the Own-Children Method to UNICEF MICS household survey data. Each child's age is used to infer the year of birth and the mother's age at that time. Summing these inferred births across households and accounting for the child and mother's survival yields retrospective births by mother's age and ethnicity, from which age-specific and total fertility rates are calculated. Estimates for years with multiple survey waves are averaged together.

CHART 2.1.2. The ethnic composition of Central Asian countries has shifted markedly since the late 1980s



Source: Demoscope data, national statistical office data and authors' calculations.

Note: This chart shows, for Kazakhstan, the Kyrgyz Republic and Tajikistan, changes in the population shares of the respective titular ethnic groups (left-hand side) and ethnic Russians (right-hand side) from 1979 to the 2020s. For each country, "titular ethnic group" denotes the self-identified population after which the state is named (for instance, Tajiks in Tajikistan or Kazakhs in Kazakhstan) and is a descriptive statistical label that does not imply legal status, preference or hierarchy.

[55] See Spoorenberg (2015).

[56] See Kan (2023).
[57] See Fernández and Fogli (2009).
[58] See Spoorenberg (2015).

BOX 2.2.

HOW DELAYED CHILDBIRTH REDUCES COMPLETED FERTILITY

Biologically, women's ability to conceive declines with age, especially after their mid-20s. Consequently, starting a family later reduces the time available for childbearing, increasing the risk of having fewer children than planned.

Following the methodology of Geruso, LoPalo and Spears (2023) and using a large sample of married women who are not using contraception, identifying months when they are at risk of conceiving (not pregnant, more than 12 months post-partum and without a terminated pregnancy in the past three months), the actual effective fecundability in months for each age between 15 and 49 can be estimated. These probabilities are then used to simulate the likelihood of having one, two, three or four children before the end of the reproductive period, depending on the age at which exposure to conception risk starts.[59] Starting from a given age, the simulation proceeds month by month until a successful conception occurs, at which point the probability of another conception is set to zero for the following nine months (pregnancy), with a post-partum interval of 12 months. This process is then repeated 10,000 times for each starting age and each number of desired children (one, two, three and four). Hence, the probability of achieving a given number of children depends on two elements. The first is the number of years remaining in the reproductive period. For instance, starting at age 24 leaves roughly two decades of fertility potential, whereas beginning at age 32 leaves only about 12 years. The second is the probability of conception at each age. The chances of conceiving in a given month are relatively high in the early to mid-20s, decline steadily through the late 20s and 30s, and fall sharply after the early 40s.

BOX 2.3.

QUANTIFYING THE DRIVERS OF POPULATION CHANGE

Population size evolves over time as a result of births, deaths, migration flows and changes in the age structure of the population (affecting the number of people of reproductive age). The relative importance of these factors can vary substantially from country to country and over time. For example, in some economies, migration may be the dominant source of growth, while in others, falling fertility or population ageing may be the primary driver of decline. Understanding the relative contribution of each component helps to identify the demographic pressures facing a country and the types of policy response that may be most effective.

The following analysis breaks down population change between 1990 and 2023 into the separate contributions of fertility rates, mortality rates, net international migration rates and age structure. Building on earlier research, the analysis compares the actual population outcome with a series of counterfactual projections in which one factor is kept constant while the others follow observed trends.[60] Using age-specific fertility, migration and mortality rates separates the effect of the associated changes from the impact of the initial age and sex structure of the population.

The calculation begins with the baseline population in 1990 and its observed age-sex structure. Applying the observed age-specific fertility, mortality and migration rates over 33 years yields the "observed" projection. The fertility scenario holds fertility constant at the replacement rate. The mortality scenario holds mortality rates at initial levels. The migration scenario sets net international migration to zero. The age-structure scenario fixes the initial age composition of the population.

The difference between the observed projection and each counterfactual isolates the contribution that the relevant factor makes to population change, holding the other factors as observed. Interactions between different factors (such as constant mortality and replacement fertility together) are allocated to each individual factor using a Shapley decomposition.

[59] See Geruso, LoPalo and Spears (2023).
[60] See Tóth (2025).

BOX 2.4.

FERTILITY CONVERGENCE AMONG IMMIGRANTS

Immigration can mitigate the economic impact of population ageing by boosting the working-age population today and births in the future. Yet, evidence across high-income destinations shows that migrants' fertility tends to fall towards host-country norms over time, limiting the scope for increases in country-wide birth rates through migration.[61] The analysis in this box traces immigrants' fertility patterns using harmonised individual-level EU Labour Force Survey data for 19 European destination countries over the period 2008-23. Specifically, the analysis compares the number of children aged between 0 and 2 born to foreign-born women over time following their arrival, comparing women from the same region of origin who arrive at different points in time but are of the same age in the same destination country and year. The analysis separately traces immigrants from Asia, Europe, Latin America and the Caribbean, and the Middle East and North Africa, plus SSA. To avoid counting births that occurred before migration, the analysis focuses on foreign-born women aged 15-39 who have lived in the destination country for at least three years.

The analysis reveals that recent arrivals have consistently higher childbearing intensity than women of similar age who were born locally (see Chart 2.4.1). The differences are particularly large for women from higher-fertility countries of origin. For example, women born in the Middle East and North Africa and SSA have, on average, around 0.2 more children aged 0-2 than locals of the same age in the first five years after arrival.

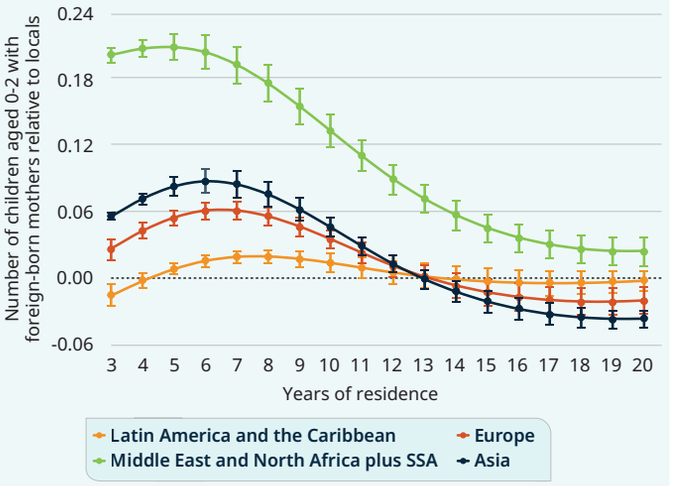
Over time, fertility patterns converge, as childbearing intensity falls on account of progressively greater cultural and economic exposure to the destination country. Women from Asia, Europe and Latin America and the Caribbean who have lived in the destination country for at least 12 years show convergence with local childbearing intensity, while for women from the Middle East, North Africa and SSA, childbearing intensity approaches that of locals once they have lived in the destination country for at least 20 years. The childbearing intensity of a woman from the Middle East, North Africa or SSA who has lived in the destination country for two decades is around 45 per cent lower than that of a woman with the same region of birth and age who has lived in the destination country for only five years.

There is also evidence of convergence in childbearing intensity across generations. While first-generation immigrant women from the Middle East, North Africa and SSA have 76 per cent more children aged 0-2 in the household than native-born women of the same age, second-generation immigrant women (defined here as those born locally to foreign-born mothers) of the same age only have 8 per cent more children relative to the same baseline.

These findings indicate that immigration might provide a temporary boost to births in the years surrounding arrival, particularly for women from higher-fertility regions, but that childbearing intensity subsequently converges towards destination-country norms within one to two decades and more rapidly across generations. The contribution that migration makes to country-wide birth rates is, therefore, frontloaded and diminishes over time. Consequently, while migration remains valuable for addressing labour-force pressures and supporting demographic renewal, it cannot offset persistently low fertility rates on its own. Sustained increases in births will ultimately depend on improvements in the broader conditions for family formation within destination countries themselves.

[61] See Mayer and Riphahn (2000) and Pailhé (2017).

CHART 2.4.1. Childbearing intensity of foreign-born women converges on levels observed for women born in the destination country



Source: Eurostat (2024) and authors' calculations.

Note: This chart plots the predicted childbearing intensity of immigrant women over time following their arrival in 19 destination countries. Childbearing intensity is defined as the number of children aged 0-2 in the household, expressed as the difference relative to the native-born average for the same age group, destination country and year. The sample comprises women aged 15-39. Predicted values are derived from OLS regressions that use separate restricted cubic splines for years since arrival (with four knots placed at equally spaced quantiles of the years of residence distribution) for each region of birth, controlling for country-year-age group fixed effects. The chart shows 95 per cent confidence intervals based on standard errors clustered at the country level.

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