

# **War Next Door, Births at Home: Decomposing the 2019–2024 Fertility Decline in Poland, Lithuania, Latvia, and Estonia**

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## **EXTENDED ABSTRACT**

Between 2019 and 2024, Poland, Lithuania, Latvia, and Estonia experienced the sharpest fertility declines in Europe, marking one of the most pronounced demographic reversals in the European Union since enlargement in 2004. These declines coincided with two overlapping crises: the COVID-19 pandemic and the geopolitical destabilization following Russia's 2022 invasion of Ukraine. The combined impact of a global health emergency and a regional security threat produced a sustained environment of uncertainty that reshaped fertility intentions, the timing of births, and long-term demographic expectations across Eastern and Central Europe. The study investigates whether these declines stem from structural demographic changes or from behavioral responses to compounding uncertainty, using decomposition and tempo-adjustment techniques.

The analysis covers the period 2019–2024, beginning before the onset of the COVID-19 pandemic. The year 2019 marks the last phase of relatively stable but already low fertility levels in the region, while 2018–2019 were the final years of demographic stability before the onset of successive crises. Since 2020, fertility has declined continuously, making 2019 an appropriate baseline for assessing the scale and dynamics of the downturn.

The methodological framework builds on Kitagawa's (1955) and Das Gupta's (1993) decomposition methods to partition changes in the total fertility rate (TFR) into structural and behavioral components. Structural components reflect shifts in the age and parity composition of women of reproductive age, while behavioral components measure changes in fertility rates within those groups. Tempo-adjusted fertility indicators following Bongaarts and Feeney (1998) correct for distortions caused by birth postponement. The analysis draws on annual vital statistics, Eurostat data, and national statistical offices, with Poland serving as the first detailed case study. A counterfactual event-study design compares post-2022 fertility trajectories with pre-crisis patterns and with Western and Central European comparison groups differing in institutional stability and proximity to the conflict.

The Polish case illustrates the demographic consequences of overlapping crises. Based on decomposition results the total fertility rate declined from approximately 1.45 in 2019 to 1.10 in 2024—an overall drop of about 24%. Decomposition results show that roughly 80% of this decline was driven by behavioral changes, while structural factors—such as the gradual contraction of the population of women aged 25–34—accounted for only about 20%. Behavioral changes were particularly pronounced among women aged 25–34, the demographic group that historically drives first and second births in Poland. Between 2021 and 2024, fertility rates in this age group fell by about one-third, with first-birth rates

declining by an estimated 25–30%. These reductions were only partially offset by slight increases among women aged 35–39, suggesting a postponement rather than a permanent cessation of fertility intentions.

The pandemic's effects on Polish fertility unfolded in two distinct phases. In 2020, during the initial lockdown, birth numbers and conception rates declined sharply, particularly for first and second births, as shown in Tymicki (2024). A modest recovery in 2021 followed as restrictions eased and delayed conceptions materialized. However, this rebound was disrupted by the onset of the war in Ukraine in early 2022, which reignited uncertainty and introduced new economic and security anxieties. This sequential pattern produced what might be described as a 'double shock': an initial postponement due to health fears and mobility restrictions, followed by a second postponement or withdrawal caused by regional insecurity and inflationary pressures. The combination of these shocks transformed temporary deferrals into lasting behavioral change, with the largest declines observed in first-birth fertility rates and among couples without children.

Age-specific fertility rates confirm this transition: the mean age at childbirth in Poland increased from about 29.7 years in 2019 to over 31.2 years in 2024, reflecting both delayed entry into parenthood and compressed fertility timing at later ages. The parity-specific analysis indicates that first births accounted for roughly two-thirds of the TFR decline since 2021, while second births contributed around 20% and higher-order births less than 10%. This pattern underscores how uncertainty and insecurity primarily affected the decision to start a family, rather than continuation among existing parents. These findings are consistent with theoretical models linking fertility to uncertainty (Vignoli, Drefahl, & De Santis, 2020; Kreyenfeld, 2010), and echo Sobotka, Comolli, and Matysiak's (2023) observation of post-pandemic fragility in European fertility.

Contextual factors magnified these behavioral shifts. Inflation in Poland exceeded 12% in 2022, while housing affordability worsened, and perceived job security declined, especially among younger cohorts. At the same time, over 1.5 million Ukrainian refugees entered Poland, creating both humanitarian and economic pressures that may have indirectly reinforced uncertainty about future stability. Survey data from the 2023 Generations and Gender Survey indicate that approximately one-third of Polish respondents cited the war or economic instability as a reason for postponing births. This convergence of macroeconomic and psychological factors reflects the multifaceted nature of the behavioral component observed in the decomposition analysis.

In comparative perspective, Western European countries such as France and the Netherlands maintained stable fertility around 1.6–1.7 children per woman through 2023 (INSEE, 2024; CBS, 2024), while Central European countries with weaker geopolitical exposure—such as Czechia or Hungary—showed more moderate declines. The steepness of the Polish decline thus aligns with regional proximity to conflict and heightened sensitivity to geopolitical risk. These findings are consistent with earlier research on fertility responses during the Great Recession (Sobotka, Skirbekk, & Philipov, 2011), and with the cross-European analysis by Winkler-Dworak, Brzozowska, Zeman, and Sobotka (2024), who document a renewed

decline in fertility across Europe in late 2022, synchronizing with the energy crisis and the outbreak of war in Ukraine. This broader evidence supports the interpretation that the geopolitical shock and economic instability jointly contributed to the post-pandemic fertility downturn.

In the next phase of research, the decomposition framework will be replicated for Latvia, Lithuania, and Estonia to evaluate whether similar behavioral dominance exists in other frontline EU states. Including the parity dimension across these countries will enable finer-grained analysis of changes in first, second, and higher-order births, revealing whether the Polish pattern of delayed family formation is unique or shared regionally. By combining decomposition and tempo-adjusted methods, this comparative approach aims to quantify how sequential global and regional shocks reshape reproductive behavior across the EU's eastern frontier and to contribute to ongoing debates on demographic resilience in times of uncertainty.

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