შვედეთი Sverige

ISET
International School of Economics at TSU
Policy Institute

FEBRUARY 2026

FERTILITY TRENDS IN GEORGIA: UNDERSTANDING TEMPO AND QUANTUM EFFECTS AND THE FACTORS SHAPING THEM

PREPARED BY:
Davit Keshelava
Tornike Surguladze

DISCLAIMER: This document has been produced with the financial support of Sweden. The contents are the sole responsibility of the authors and can under no circumstance be regarded as reflecting the position of Sweden.

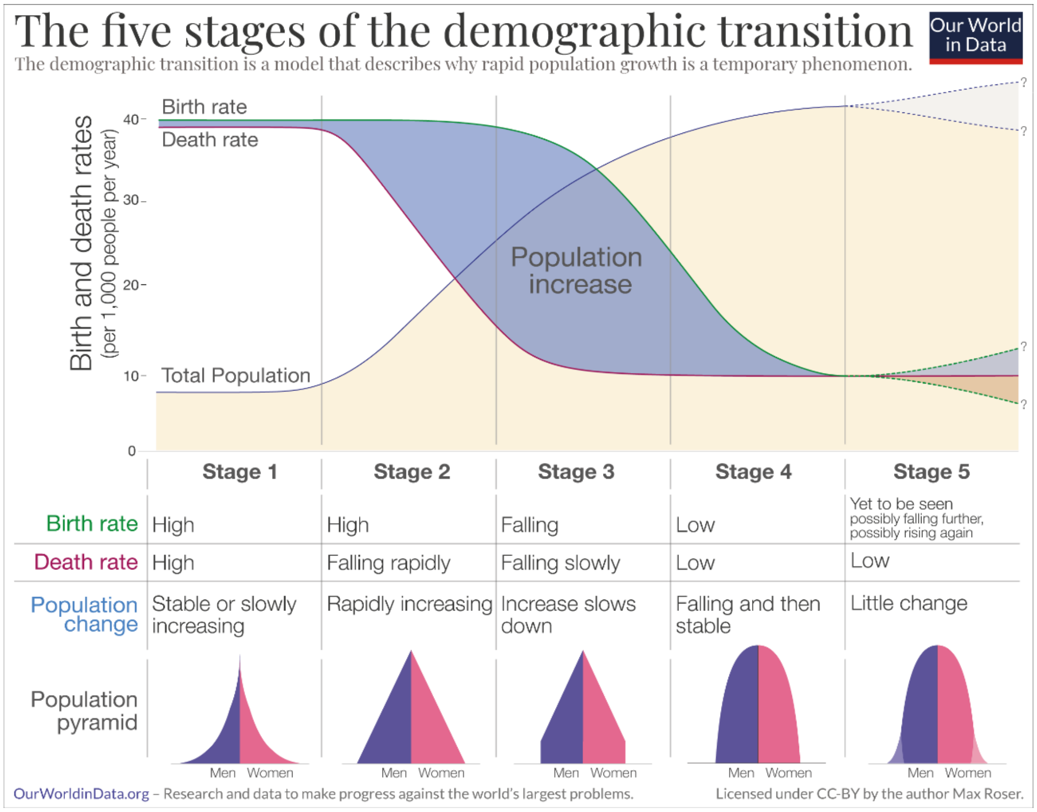
INTRODUCTION

Over the past seven decades, fertility decline has become one of the most significant demographic transformations worldwide. The global total fertility rate (TFR)—defined as the average number of children a woman would bear if current age-specific fertility rates prevailed throughout her reproductive life—declined from approximately five births per woman in the early 1960s to around 2.3 births per woman in the early 2020s (United Nations, 2022; Ritchie, Spooner & Roser, 2023). Although the pace and timing of fertility decline have differed across regions, the overall direction has been remarkably consistent. Most high-income countries reached replacement-level fertility (approximately 2.1 births per woman) by the late twentieth century and have remained below this threshold since. Many middle-income countries followed during the late twentieth and early twenty-first centuries, while even historically high-fertility regions such as Sub-Saharan Africa have begun experiencing sustained fertility reductions (United Nations, 2022).

These global trends are commonly interpreted through the framework of demographic transition theory, which describes the shift from regimes of high mortality and high fertility to regimes characterized by low mortality and low fertility as societies undergo economic, social, and institutional transformation (Notestein, 1945). In the classical four-stage formulation of the theory, mortality declines first due to improvements in health, sanitation, and nutrition, followed by a gradual decline in fertility as family size preferences adjust to new economic and social conditions. The final stage is typically associated with demographic stabilization, in which low fertility and low mortality produce slow or near-zero population growth. However, contemporary demographic research increasingly suggests that many advanced economies have moved beyond this equilibrium into a phase of persistent sub-replacement fertility accompanied by population ageing and natural decrease, sometimes described as a “fifth stage” of demographic transition (Lesthaeghe, 2010; United Nations, 2022).

ISET

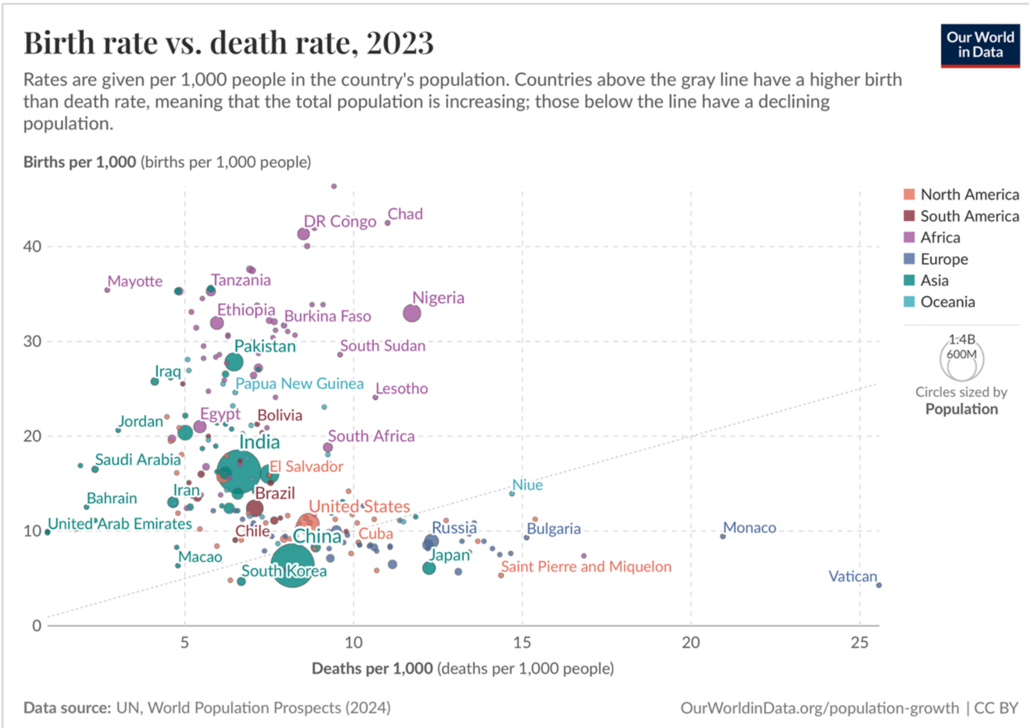
Figure 1. The Demographic Transition Model: Stages of Fertility, Mortality, and Population Change



Source: Our World in Data

Empirical cross-country comparisons further illustrate how countries are distributed across different stages of this transition. One way to observe these differences is by examining the joint distribution of crude birth and death rates. Countries with high birth rates relative to death rates typically experience rapid population growth and are characteristic of earlier stages of demographic transition. In contrast, countries with low birth rates and relatively higher death rates—often reflecting ageing populations—are more likely to experience slow growth or natural population decline. As illustrated in Figure 2, most high-income countries and an increasing number of middle-income countries cluster in the low-fertility, low-mortality region of the distribution, reflecting advanced stages of demographic transition. Meanwhile, several countries in Sub-Saharan Africa remain characterized by high fertility and relatively high mortality, indicating earlier stages of the transition.

Figure 2. Birth Rate vs. Death Rate Across Countries, 2023



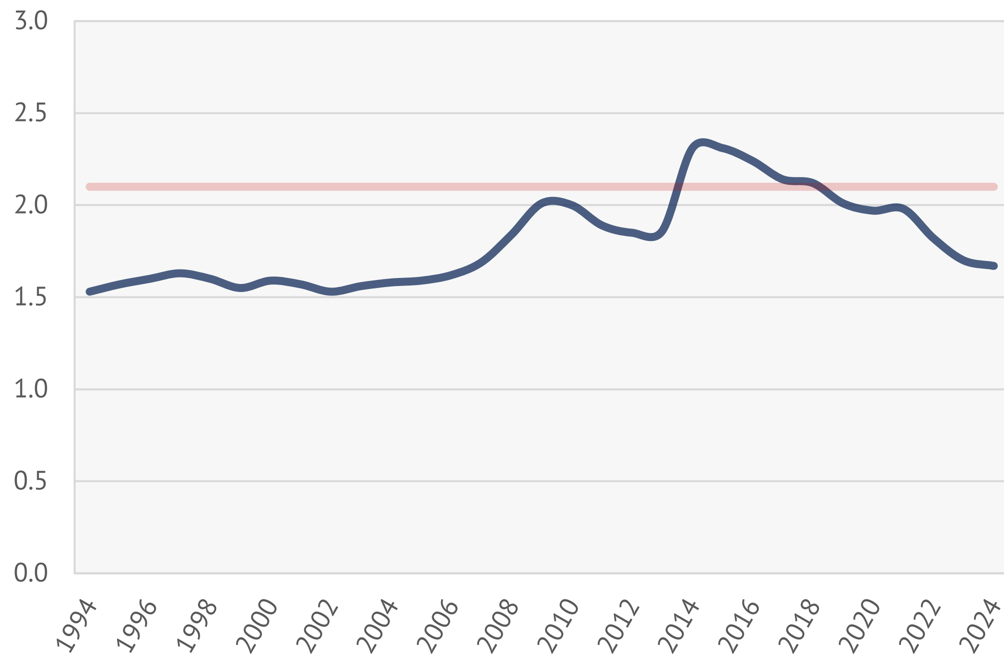
Source: Our World in Data

FERTILITY TRENDS IN GEORGIA

Georgian demographic research generally classifies the country as being in the fourth stage of the demographic transition, marked by low crude birth and death rates and the predominance of small-family norms (Meladze, 2023). However, the persistence of fertility below replacement level and recurring episodes of natural population decrease suggest that Georgia increasingly exhibits characteristics associated with a post-stabilization demographic regime.

The trajectory of the total fertility rate in Georgia since the mid-1990s illustrates this dynamic. Following the economic and institutional shocks accompanying the collapse of the Soviet Union, fertility declined sharply and remained substantially below replacement level for more than a decade. Beginning in the late 2000s, fertility temporarily increased and briefly exceeded replacement level in the mid-2010s. This period of recovery, however, proved short-lived. After 2016 fertility began to decline again, falling back below replacement and reaching clearly sub-replacement levels in the early 2020s.

Figure 3. Total Fertility Rate (TFR) in Georgia, 1994–2024



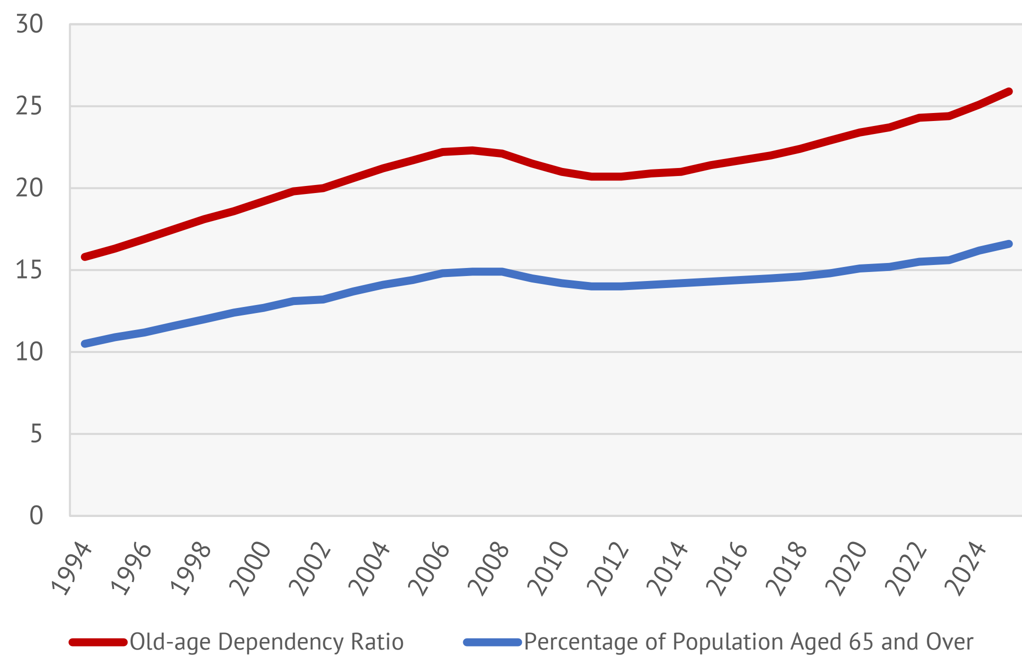
Source: Geostat

In addition, the gross reproduction rate (GRR) and the net reproduction rate (NRR), which measure the number of daughters born to a woman over her lifetime and the number of daughters who survive to reproductive age, respectively, offer a direct assessment of generational replacement. In recent decades both indicators have generally remained below the replacement threshold, indicating that successive cohorts of women are not fully replacing themselves. This pattern is reflected in the dynamics of the natural increase rate—the difference between crude birth and death rates—which has fluctuated around zero and periodically turned negative. Together, these indicators confirm that recent fertility fluctuations occur within a broader demographic context characterized by incomplete generational replacement and weak or negative natural population growth. The evolution of reproduction rates and natural population increase is presented in Appendix Figures A2 and A3.

Sustained sub-replacement fertility has implications that extend beyond annual birth fluctuations. When successive cohorts of women produce fewer daughters than required for simple replacement, the size of younger generations gradually contracts. Over time, this process alters the age structure of the population by reducing the relative size of younger cohorts while increasing the share of older age groups. Fertility decline therefore represents the primary demographic mechanism underlying long-term population ageing.

Changes in Georgia's age structure over the past three decades clearly reflect this process. Even if fertility were to stabilise at current levels, demographic momentum would continue to be shaped by the shrinking size of younger cohorts and the expanding share of elderly individuals. Since the mid-1990s the proportion of the population aged 65 and over has increased steadily, reaching approximately one-sixth of the population by the mid-2020s. This increase is particularly pronounced among women due to higher female life expectancy.

Figure 4. Population Ageing in Georgia: Share of Population Aged 65+ and Old-Age Dependency Ratio, 1994–2025



Source: Geostat

The structural consequences of population ageing are further reflected in the old-age dependency ratio, defined as the number of individuals aged 65 and over per 100 persons of working age. Over the past three decades this ratio has increased markedly in Georgia, indicating a growing demographic burden on the productive population. Rising dependency ratios imply increasing pressure on pension systems, healthcare financing, and public expenditure more broadly. In pay-as-you-go pension systems, sustained increases in the number of retirees relative to contributors may require adjustments such as higher contribution rates, delayed retirement, or increased fiscal transfers.

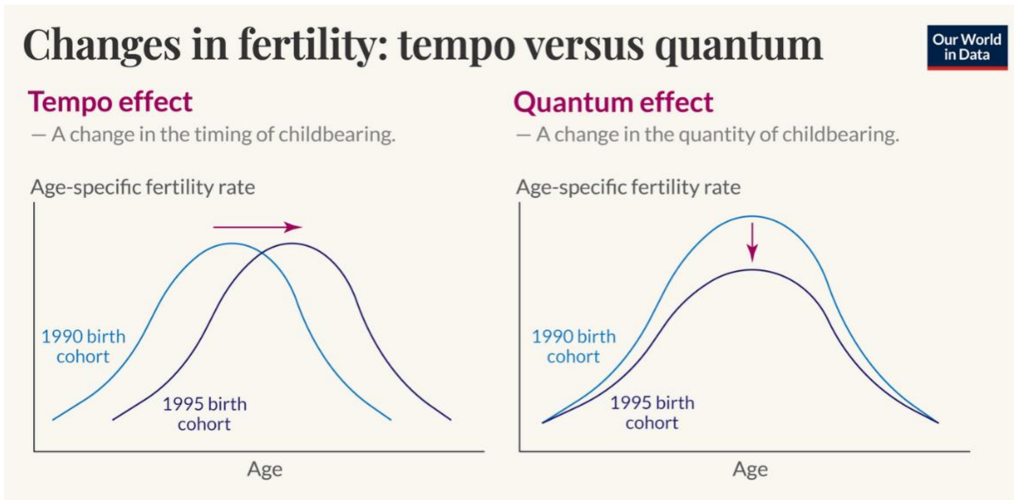
Understanding whether recent fertility fluctuations represent lasting changes in family size preferences or timing effects associated with postponed childbearing is therefore central to interpreting Georgia's demographic trajectory. To address this question, the following section analyses age-specific fertility rates, birth-order patterns, and cohort fertility dynamics in order to disentangle the relative contributions of tempo and quantum effects in recent fertility developments.

TEMPO AND QUANTUM EFFECTS IN FERTILITY DYNAMICS

Understanding recent fertility developments requires distinguishing between two fundamentally different sources of fertility change: quantum effects and tempo effects. Quantum refers to changes in the number of children women ultimately have over their reproductive lifetime—commonly captured by cohort fertility or completed family size. Tempo, by contrast, refers to changes in the timing of births across the life course, such as postponement of first births or delays in subsequent childbearing. Because the total fertility rate (TFR) is a period indicator, it reflects births occurring within a specific year and is therefore sensitive to shifts in the timing of childbearing. When births are postponed to later ages, period fertility indicators may decline temporarily even if women eventually have the same number of children. Conversely, when previously delayed births occur at older ages, period fertility may temporarily increase without implying a sustained rise in completed fertility.

Figure 5 illustrates the conceptual distinction between these mechanisms. A tempo effect shifts the fertility schedule toward older ages without necessarily changing the total number of children women have over their lifetime, whereas a quantum effect alters the overall level of fertility by changing completed family size. This distinction is crucial for interpreting period fertility indicators because the TFR combines both effects and may therefore obscure the underlying behavioural dynamics driving fertility change.

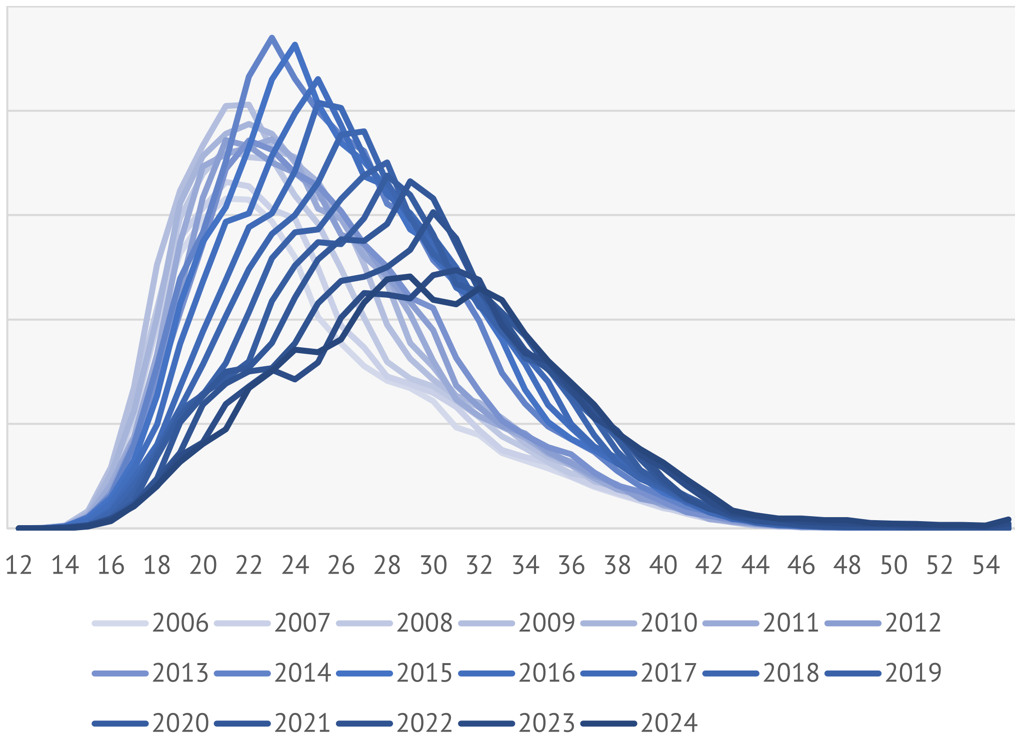
Figure 5. Changes in Fertility: Tempo versus Quantum (Schematic Illustration)



Source: Our World in Data

In the context of Georgia, analysing fertility dynamics solely through period indicators risks masking important structural changes in the timing of births. To better understand these dynamics, age-specific fertility rates (ASFRs) can be examined across calendar years. Figure 6 presents the distribution of fertility schedules derived from Lexis-based age profiles. The figure shows a gradual shift in the age pattern of fertility over time. Earlier years exhibit a more pronounced fertility peak at younger ages, whereas more recent schedules display relatively lower fertility among women in their early twenties and increased fertility at later reproductive ages. The observed rightward shift of the fertility schedule suggests that a growing share of births occurs later in the reproductive life cycle. This pattern is consistent with postponement of childbearing, a phenomenon widely documented in countries undergoing advanced stages of demographic transition.

Figure 6. Age-Specific Fertility Rates by Calendar Year (Lexis-Based Age Profiles), Georgia, 2006–2024

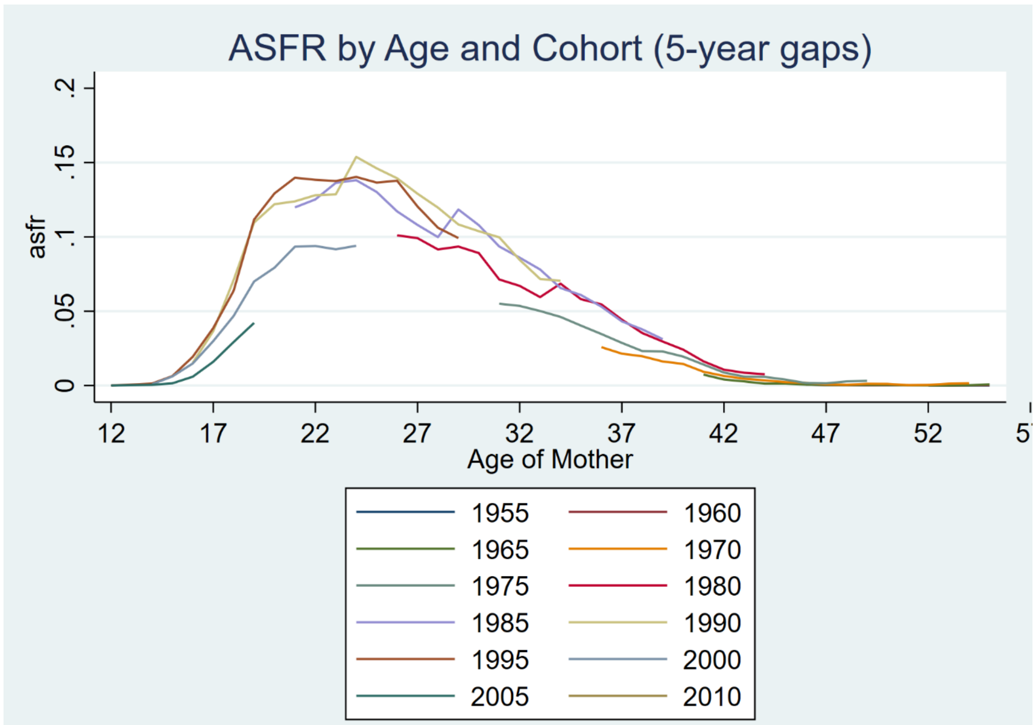


Source: Geostat; author's calculations based on Lexis fertility tables

While period ASFR schedules reveal how fertility patterns evolve across calendar years, cohort analysis provides further insight into whether delayed births are eventually realized later in life. Figure 7 therefore examines fertility patterns by birth cohort using five-year cohort intervals. The cohort curves indicate that earlier cohorts experienced relatively higher fertility at younger ages, whereas more recent cohorts display lower fertility in early adulthood but relatively higher fertility at later ages. This pattern is again consistent with postponement, reflecting a gradual shift in the timing of births toward older reproductive ages.

However, an important methodological limitation should be noted. For more recent cohorts, the available data cover only part of their reproductive lifespan, meaning that their completed fertility cannot yet be observed. Consequently, while the cohort patterns clearly indicate changes in the timing of births, they do not allow a definitive assessment of whether postponed births will be fully recuperated at later ages. It therefore remains uncertain whether the observed postponement reflects purely tempo effects or whether it is accompanied by changes in completed family size (quantum effects). As a result, the cohort evidence should be interpreted as indicating substantial shifts in the timing of fertility, while potential quantum changes cannot yet be ruled out.

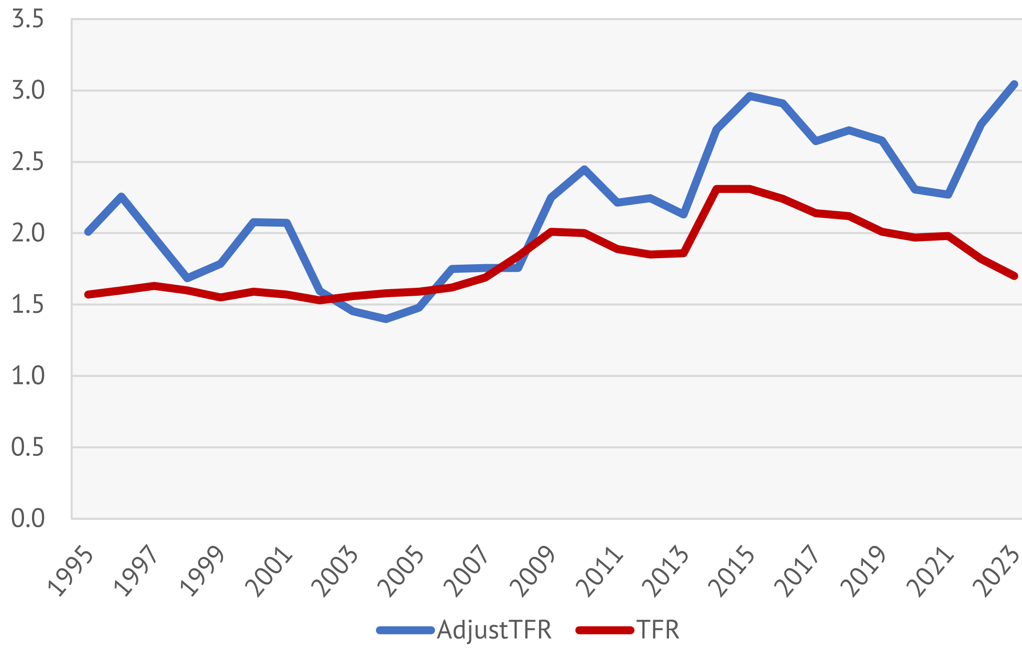
Figure 7. Age-Specific Fertility Rates by Age and Birth Cohort (5-Year Cohort Intervals)



Source: Geostat; author's calculations

The influence of timing shifts on period fertility indicators can also be examined through tempo-adjusted measures. Figure 8 compares the conventional period TFR with the tempo-adjusted TFR derived using the Bongaarts–Feeney adjustment. This method attempts to correct the period TFR for distortions arising from changes in the mean age at childbearing, thereby providing an estimate of fertility that abstracts from timing shifts. In Georgia, the adjusted series is frequently higher than the observed period TFR, suggesting that part of the observed decline in period fertility reflects postponement effects rather than purely reductions in completed family size. At the same time, the Bongaarts–Feeney adjustment should be interpreted with caution. The method relies on assumptions about the stability of fertility schedules and the relationship between timing shifts and fertility rates and therefore does not directly measure completed cohort fertility. Instead, it provides an analytical indication of the potential magnitude of tempo distortions in period fertility indicators.

Figure 8. Period Total Fertility Rate and Bongaarts–Feeney Tempo-Adjusted TFR, Georgia, 1995–2023



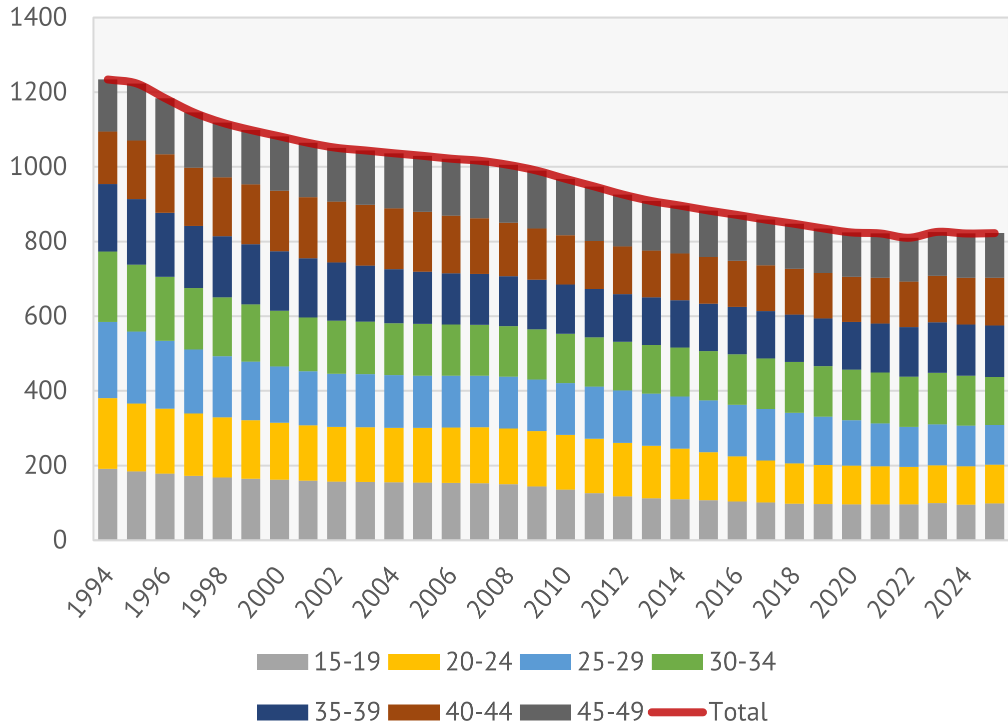
Source: Geostat; author's calculations following Bongaarts and Feeney (1998, 2000)

STRUCTURAL DEMOGRAPHIC CONSTRAINTS: DECLINING NUMBER OF WOMEN OF REPRODUCTIVE AGE

In addition to changes in fertility behaviour, demographic outcomes are strongly influenced by the size and age composition of the female population of reproductive age. Even in the absence of further fertility decline, a reduction in the number of women entering reproductive ages mechanically reduces the potential number of births. In Georgia, this structural factor has become increasingly important as a result of demographic developments that occurred during the post-Soviet transition.

Figure 9 presents the dynamics of the number of women of fertile age (15–49 years) in Georgia from 1994 onwards. The figure shows a pronounced and persistent decline in the total number of women within reproductive ages. In the mid-1990s, the number of women aged 15–49 exceeded 1.2 million, while by the early 2020s the figure had declined to approximately 820 thousand, representing a reduction of roughly one third over three decades. This trend reflects long-term demographic processes that are largely independent of short-term fluctuations in fertility rates.

Figure 9. Dynamics of the Number of Women of Fertile Age (15-49) in Georgia, 1994–2025



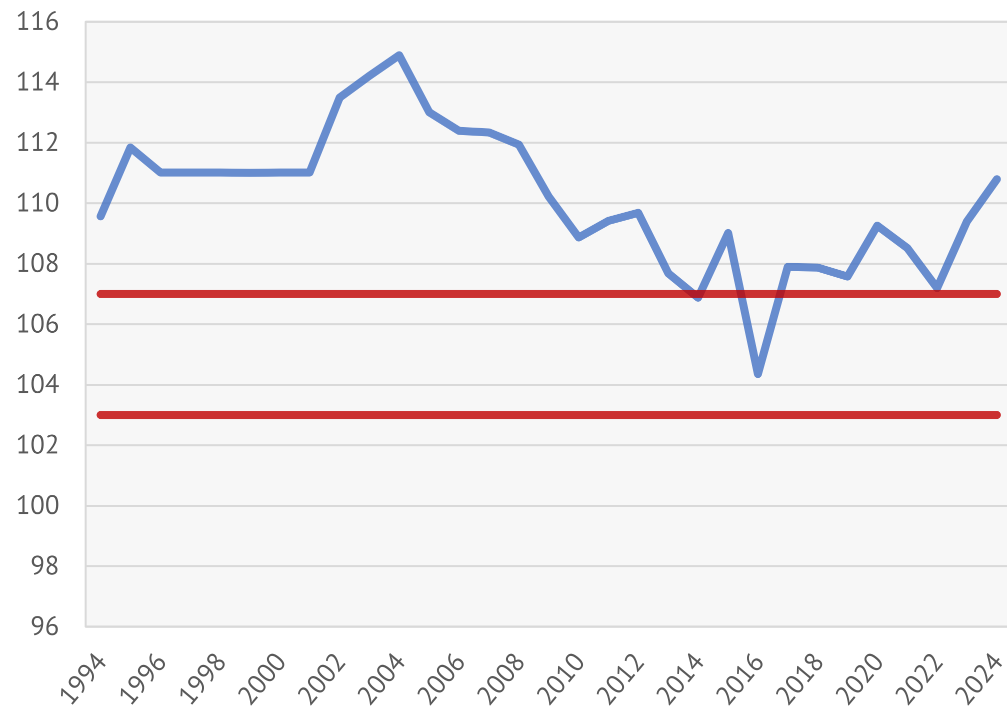
Source: Geostat; author's calculations

The decline primarily reflects the sharp contraction in births during the economic and political crisis of the 1990s. The smaller cohorts born during this period are now entering reproductive ages, reducing the overall number of women capable of giving birth. This represents a classic case of demographic momentum; whereby past fertility behaviour continues to shape population dynamics for decades.

Another demographic factor influencing the future reproductive potential of the population is the sex ratio at birth (SRB). Under natural biological conditions, the sex ratio at birth typically ranges between 103 and 107 male births per 100 female births. However, during the late 1990s and early 2000s Georgia experienced significantly elevated sex ratios at birth, reflecting the phenomenon of sex-selective births that emerged in several countries of the South Caucasus and parts of Eastern Europe.

Figure 10 illustrates the evolution of the sex ratio at birth in Georgia. The indicator rose well above the natural range during the early 2000s, reaching levels exceeding 114 male births per 100 female births. Although the ratio has gradually declined since the mid-2010s and moved closer to biologically normal values, the earlier imbalance produced relatively smaller female cohorts. As these cohorts now enter reproductive ages, the earlier distortion in the sex ratio contributes to a reduction in the number of potential mothers.

Figure 10. Number of Live Births by Sex and Sex Ratio at Birth in Georgia, 1994–2024



Source: Geostat

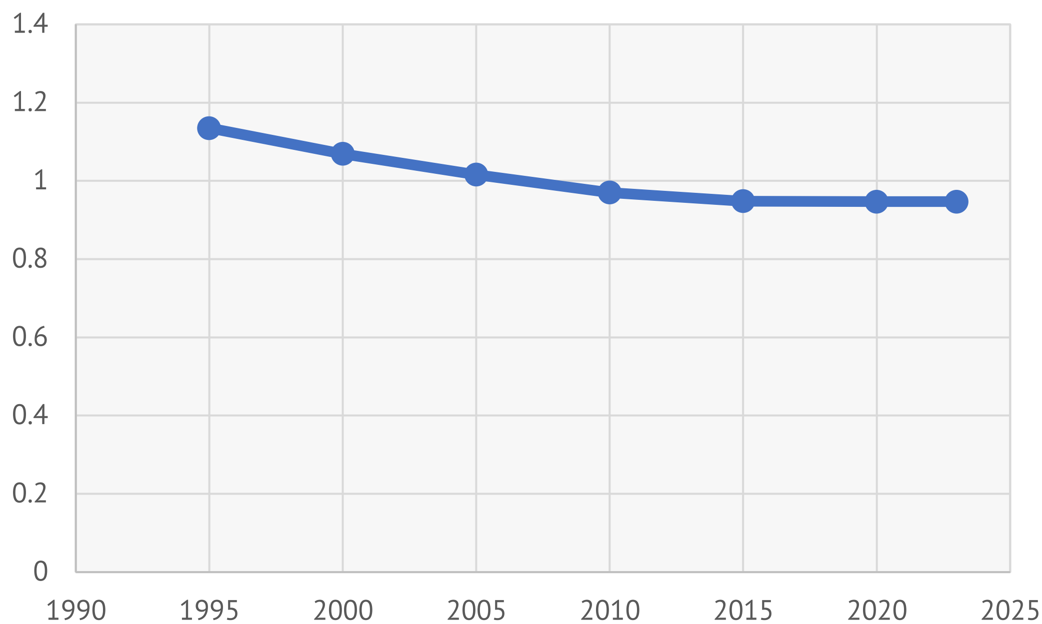
The long-term demographic implications of these structural changes can also be examined through the gross growth potential of women, an indicator reflecting the demographic capacity for future reproduction based on the age structure of the female population. The indicator measures the relative size of younger female

ISET

cohorts compared with those already in reproductive ages and therefore captures the demographic conditions for future births.

Figure 11 presents the dynamics of the gross growth potential of women in Georgia. The indicator shows a steady decline from approximately 1.13 in the mid-1990s to values close to 0.95 in recent years. Values below unity indicate that younger cohorts of women are smaller than those currently in reproductive ages, implying that the number of women entering reproductive ages will continue to decline in the future. Consequently, even if fertility rates stabilize or increase moderately, the absolute number of births may remain constrained by the shrinking size of the reproductive-age female population.

Figure 11. Gross Growth Potential of Women in Georgia



Source: Meladze (2023);
Note: Methodology for calculating the indicator is presented in Methodological Box A2.

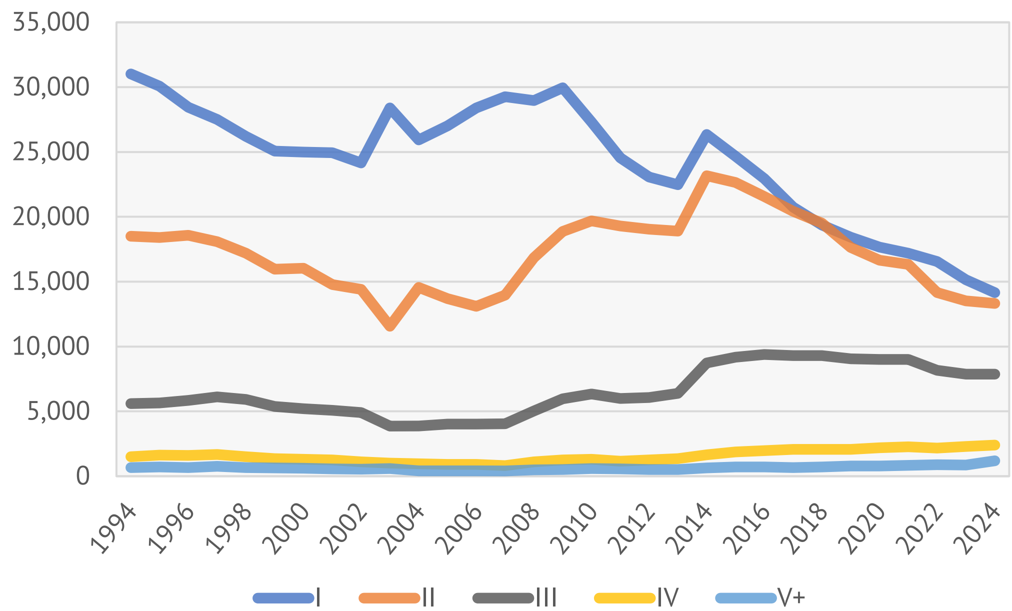
CHANGES IN BIRTH ORDER STRUCTURE AND FERTILITY BEHAVIOUR

While the previous sections examined aggregate fertility indicators and structural demographic constraints, additional insights can be obtained by analysing the distribution of births by birth order together with fertility preferences expressed in surveys. These indicators provide complementary perspectives on family formation behaviour and help to identify whether fertility decline is primarily driven by changing preferences or by constraints that prevent households from achieving their desired number of children.

Figure 12 presents the number of live births by birth order in Georgia between 1994 and 2024. The data reveal a substantial decline in the number of first births over the past three decades. In the mid-1990s, first births exceeded thirty thousand annually, whereas by the early 2020s their number had declined to roughly half that level.

Second births follow a broadly similar trajectory, although their decline is somewhat less pronounced. At the same time, births of third and higher orders show a comparatively more stable pattern, with their absolute numbers decreasing more slowly than those of first births. As a consequence, the share of higher-order births in total births has gradually increased over time, while the share of first births has declined significantly.

Figure 12. Number of Live Births by Birth Order in Georgia, 1994–2024



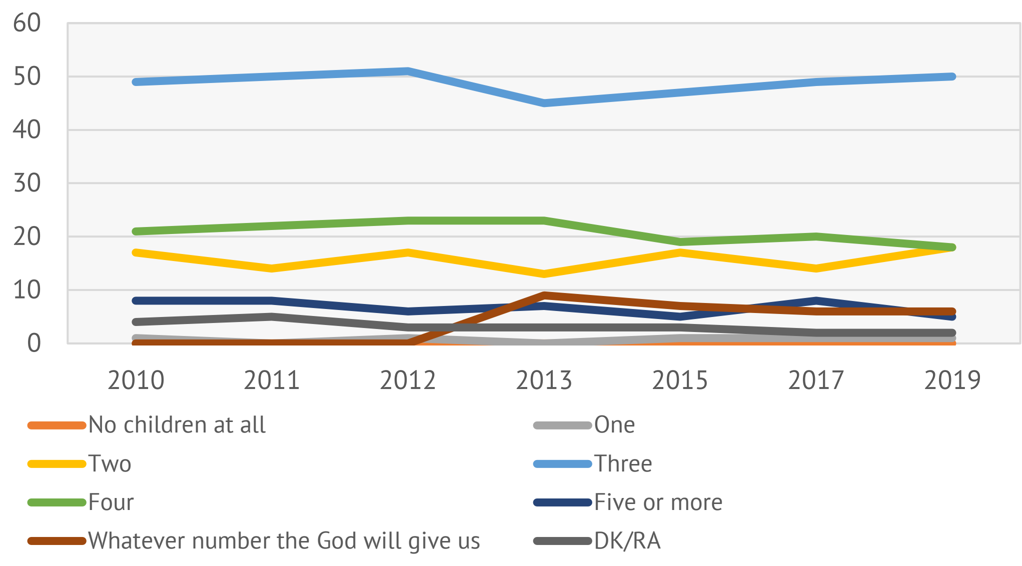
Source: Geostat

This shift in the composition of births should not be interpreted as a strong increase in large families. Rather, it largely reflects a compositional effect: first births have declined more rapidly than higher-order births, mechanically increasing the relative weight of third and subsequent births in total fertility. The observed pattern therefore suggests that fertility decline in Georgia is driven primarily by a reduction in the number of individuals entering parenthood or progressing to a second child, rather than by a universal decline across all birth orders.

Survey evidence provides an additional perspective on fertility behaviour. Figure 13 presents the evolution of the ideal number of children per family in Georgia, based on data from the Caucasus Barometer survey. Across all survey waves, the most frequently reported ideal family size is three children, followed by two children. The share of respondents identifying three children as the ideal family size remains consistently around one half of the population, while preferences for two children fluctuate between roughly 13 and 18 percent.

At the same time, the proportion of respondents indicating four or more children as the ideal family size remains non-negligible, typically around one fifth of respondents. Conversely, the share of individuals stating that the ideal number of children is one or none is extremely small.

Figure 13. Ideal Number of Children per Family in Georgia (Caucasus Barometer Survey), 2010–2019



Source: CRRC, Caucasus Barometer

ISET

RELIGIOUS INFLUENCE AND THE PATRIARCH'S BAPTISM INITIATIVE

In addition to structural demographic factors and fertility preferences, fertility dynamics in Georgia during the late 2000s were also influenced by an unusual social initiative introduced by the Georgian Orthodox Church. In December 2007, Patriarch Ilia II announced that he would personally baptize every third and subsequent child born to married Georgian Orthodox parents and would become the child's godfather. The initiative was motivated by growing concerns about declining birth rates, high abortion rates, increasing numbers of births outside marriage, and the broader demographic decline of the country (Chung et al., 2024).

Several studies have attempted to evaluate whether this initiative had measurable demographic consequences. Empirical analyses using macro-level data and quasi-experimental methods suggest that fertility increased in Georgia following the announcement of the campaign. One study using a synthetic control framework estimates that Georgia's total fertility rate rose by approximately 0.3 children per woman compared with the counterfactual trend, representing roughly a 17–20 percent increase relative to pre-intervention levels (Chung et al., 2024).

Micro-level analyses provide additional evidence that the increase was particularly concentrated among third and higher-order births, which were the explicit target of the initiative. Using a difference-in-differences approach based on nationally representative survey data, researchers estimate that the annual probability of having a third or higher-order child among Georgian Orthodox women increased significantly after the Patriarch's announcement. In relative terms, this corresponds to a substantial rise in the propensity to have higher-parity births among the treated population (Chung et al., 2024).

Aggregate estimates suggest that the initiative may have contributed to approximately 30,000–40,000 additional births between 2008 and 2013, although the precise magnitude remains subject to methodological uncertainty. Importantly, the available evidence indicates that the increase in fertility was concentrated among married Orthodox women and was largely driven by higher-order births rather than by a universal increase across all birth orders (Chung et al., 2024).

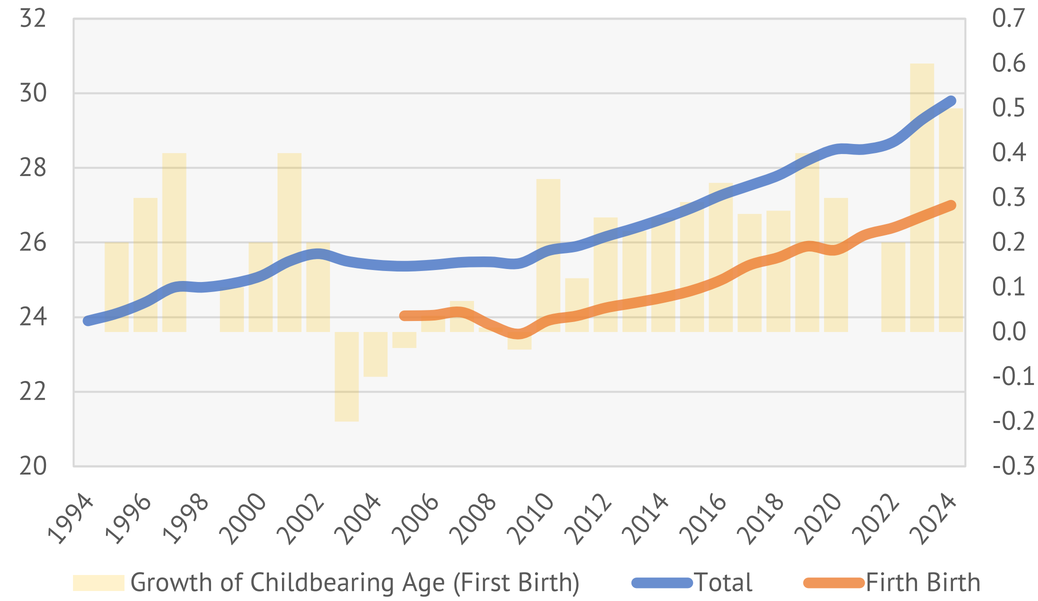
At the same time, the interpretation of this demographic episode remains debated. Some scholars emphasize that the fertility increase observed after 2007 may also reflect other factors, including economic recovery following the transition crisis of the 1990s, improvements in birth registration systems, and broader demographic fluctuations. Moreover, part of the observed increase may reflect tempo effects, as births that might otherwise have occurred later were brought forward (Stone, 2021; Bregvadze, 2020).

Nevertheless, the Patriarch's initiative represents a rare example of a non-economic, culturally driven intervention influencing demographic behaviour. Unlike traditional pronatalist policies that rely primarily on financial incentives, the Georgian case illustrates the potential importance of religious authority, social norms, and symbolic leadership in shaping family decisions. In this sense, the episode highlights that fertility outcomes may respond not only to economic conditions and demographic structures but also to changes in cultural narratives surrounding family formation.

POSTPONEMENT OF FAMILY FORMATION AND THE TIMING OF CHILDBEARING

Over the past three decades, the average age of women giving birth in Georgia has risen steadily, reflecting broader changes in education, labour market participation, and partnership formation. The increase is particularly visible for first births, which are the most sensitive to shifts in the timing of family formation. As women delay entry into parenthood, births that would otherwise occur earlier are shifted to later ages, temporarily reducing the number of births observed in a given year.

Figure 14. Mean Age of Mothers at Childbirth and at First Birth in Georgia, 1994–2024

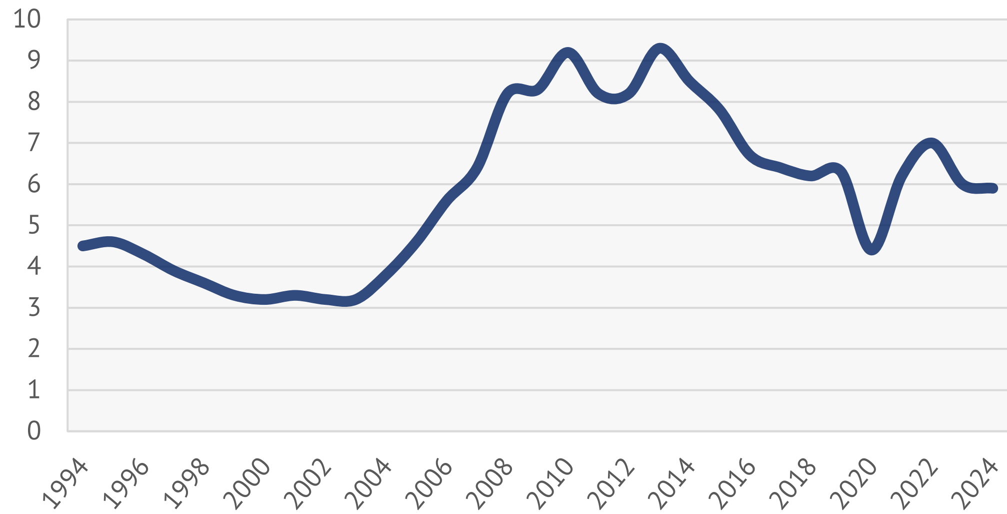


Source: Geostat

The postponement of childbearing is closely linked to changes in marriage patterns, which historically have played a central role in family formation in Georgia. The crude marriage rate shows substantial fluctuations over time. During the late 1990s and early 2000s, marriage formation declined significantly, reflecting the social and economic uncertainty associated with the transition period. Although marriage rates increased temporarily during the late 2000s and early 2010s, the overall long-term trend suggests that marriage formation has become less frequent and increasingly delayed.

ISET

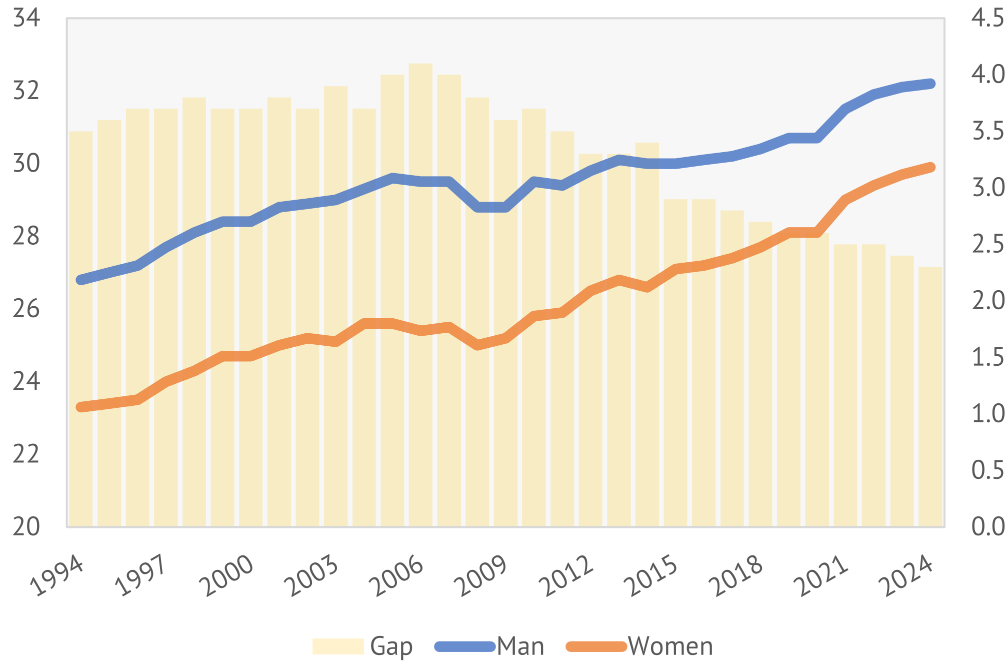
Figure 15. Crude Marriage Rate in Georgia (Number of Marriages per 1,000 Population), 1994–2024



Source: Geostat

These developments are further reflected in the increasing age at marriage for both men and women. Over the past three decades, individuals have been entering marriage at progressively later ages. The average age at marriage for women has risen from approximately 23 years in the mid-1990s to nearly 30 years by 2024, while for men it increased from around 27 years to more than 32 years. At the same time, the age gap between spouses has slightly narrowed. Delayed marriage contributes directly to the postponement of childbearing, particularly in contexts where births remain strongly associated with formal unions.

Figure 16. Average Age at Marriage by Sex in Georgia, 1994–2024

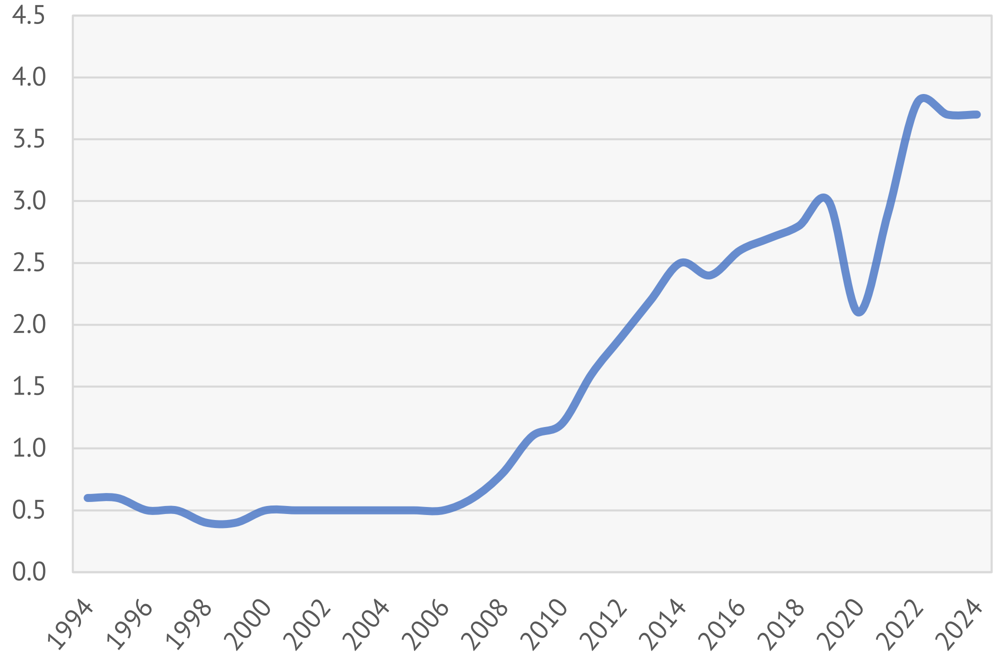


Source: Geostat

In addition to changes in the timing of marriage, Georgia has also experienced increasing marital instability. The crude divorce rate remained relatively low during the 1990s and early 2000s but began to rise significantly after the late 2000s. By the early 2020s, the number of divorces reached historically high levels, indicating a notable increase in marital dissolution. Higher divorce rates may affect fertility behaviour by shortening the duration of stable partnerships and increasing uncertainty in family planning.

ISET

Figure 17. Crude Divorce Rate in Georgia (Number of Divorces per 1,000 Population), 1994–2024

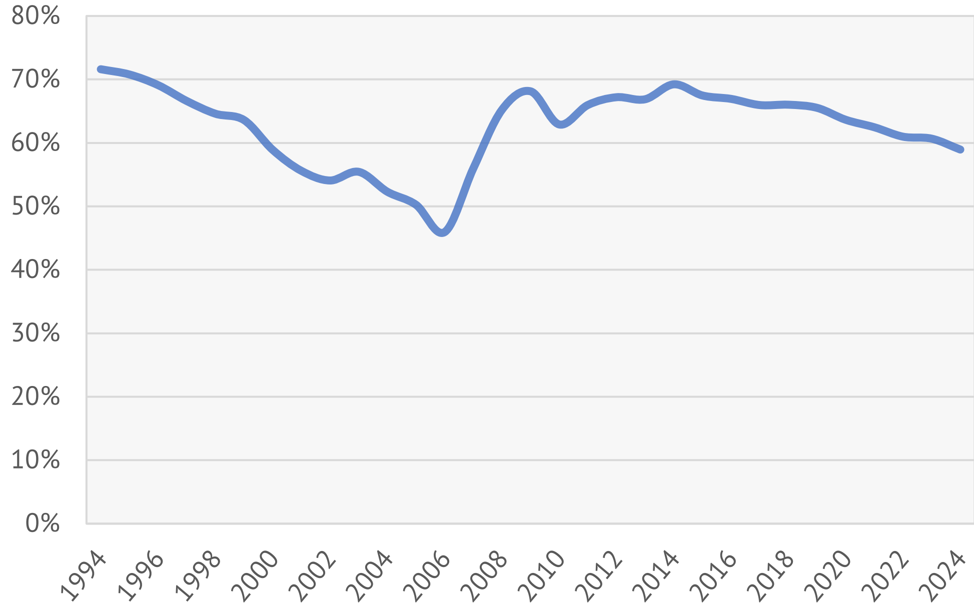


Source: Geostat

A more detailed picture of marital instability is provided by examining divorces by duration of marriage. The data show that divorces occur across a wide range of marital durations, but they are particularly frequent among marriages lasting between five and fourteen years, while the number of divorces among longer marriages has also increased over time. These patterns indicate that marital dissolution has become more common across multiple stages of the marital life course.

Changes in family formation patterns are also reflected in the legitimacy status of births. Although the majority of births in Georgia continue to occur within marriage, the share of children born outside wedlock has gradually increased. This trend may indicate the growing prevalence of non-marital partnerships or delayed formalisation of unions, both of which are commonly associated with later childbearing.

Figure 18. Share of Live Births Born Within Wedlock in Georgia, 1994–2024

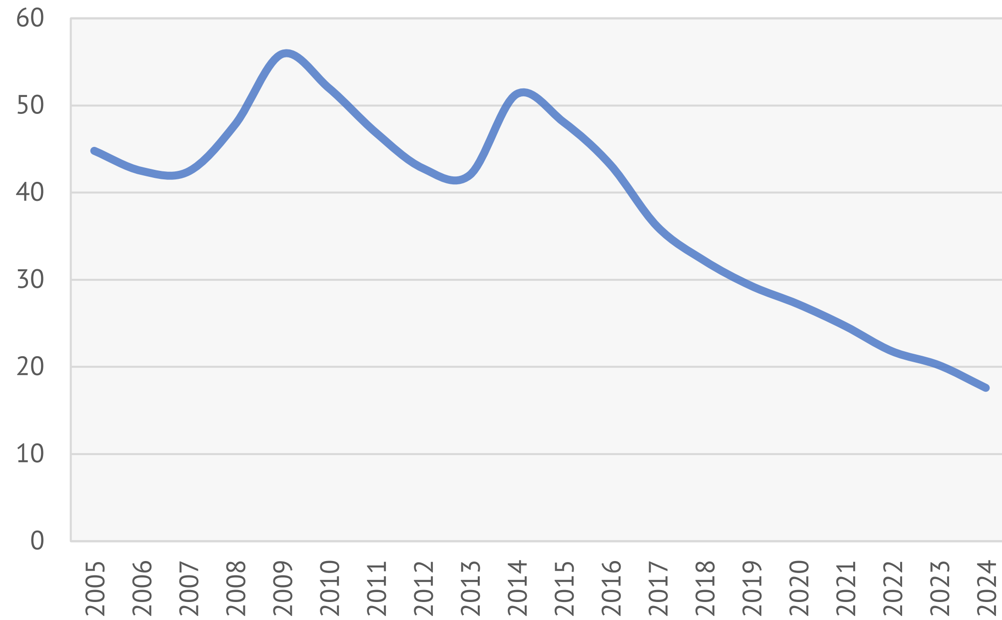


Source: Geostat

At the same time, developments in adolescent fertility reveal an important positive trend that also reflects the postponement of family formation. Over the past two decades, teenage childbearing has declined substantially in Georgia. While adolescent birth rates exceeded 50 births per 1,000 women aged 15–19 during the late 2000s, they have steadily fallen to below 20 in recent years. This decline indicates that early childbearing has become increasingly uncommon, reflecting longer educational participation and changing social norms.

ISET

Figure 19. Adolescent Birth Rate in Georgia (Births per 1,000 Women Aged 15–19), 2005–2024



Source: Geostat

ECONOMIC COSTS, WORK–FAMILY CONSTRAINTS, AND FERTILITY POSTPONEMENT

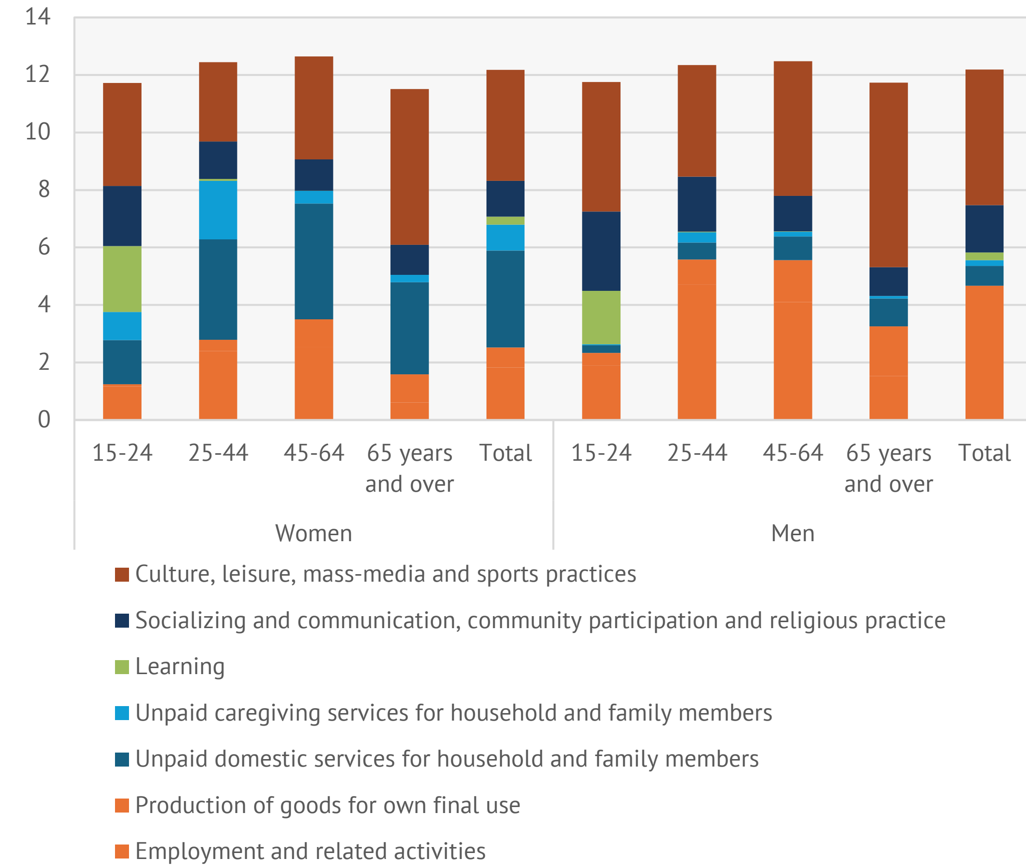
The previous section showed that fertility behaviour in Georgia is increasingly characterised by postponement of family formation and childbearing. Rising ages at marriage and first birth, declining adolescent fertility, and increasing instability of partnerships indicate that births are being shifted toward later stages of the life course. As discussed earlier, such delays generate tempo effects: period fertility indicators decline temporarily when births occur later than in previous cohorts, even if long-term fertility intentions remain unchanged (Bongaarts & Feeney, 1998; 2000). Understanding why this postponement occurs requires examining the economic and institutional environment in which childbearing decisions take place.

A large body of demographic and economic research suggests that fertility behaviour is strongly influenced by the costs associated with raising children, which shape both the affordability and timing of parenthood (OECD, 2005). Within the economic framework originally developed by Becker and Leibenstein, fertility decisions are determined by the interaction between household preferences, income levels, and the costs of children. Government policies and labour market institutions influence fertility indirectly by either reducing or amplifying these costs, particularly by affecting the extent to which paid work and childrearing can be combined (OECD, 2005).

The literature commonly distinguishes between direct costs and indirect costs of children. Direct costs refer to expenditures incurred by households when children are present, including housing, food, clothing, education, and childcare. Indirect costs arise from the opportunity costs of time, particularly the income losses and career interruptions associated with pregnancy, childbirth, and childcare responsibilities (OECD, 2005). An important dimension of these indirect costs is the unequal distribution of childcare responsibilities within households. When childcare duties are concentrated primarily on mothers, the opportunity costs of having a child increase significantly for women, particularly in terms of time constraints and labour market participation. Evidence from Georgia indicates that the gender gap in childcare provision remains substantial.

According to the 2020 Time Use Survey, mothers of children aged 0–4 spend on average 29.4 hours per week on primary childcare activities, whereas fathers spend only 5.7 hours, mostly on activities such as playing, talking, and reading. In addition to the difference in time spent, participation in childcare also varies significantly: 96.6% of mothers engage in primary childcare activities compared with 52.6% of fathers. A similar pattern persists for children aged 5–11. Mothers spend an average of 15.2 hours per week on childcare, while fathers spend only 2.9 hours, and participation rates remain highly unequal (82.8% for mothers compared with 37.4% for fathers). Overall, mothers in Georgia devote approximately 20.4 hours per week to childcare, which is around five times the amount of time spent by fathers. This imbalance implies that childbirth imposes a significantly greater time burden on women than on men, increasing the opportunity costs associated with motherhood.

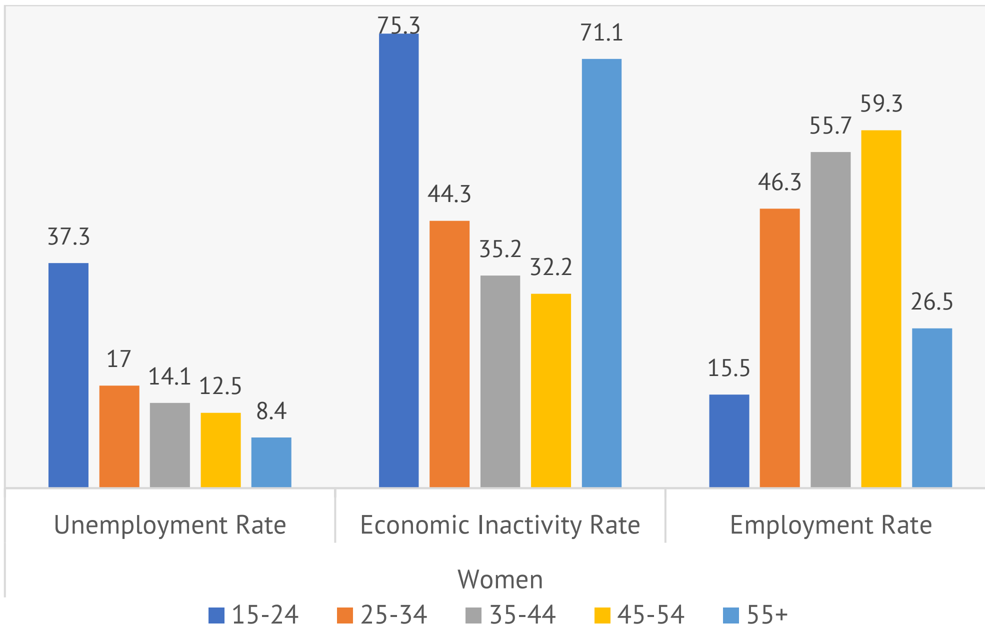
Figure 20. Average Daily Time Spent on Primary Childcare Activities by Gender and Age of Child



Source: Time Use Survey (2020)

The unequal distribution of childcare responsibilities also contributes to the phenomenon commonly referred to as the "motherhood penalty." This concept describes the disadvantages women often face in the labour market following childbirth, including lower employment rates, career interruptions, and reduced earnings potential. Labour market indicators in Georgia reveal patterns consistent with this phenomenon. According to the 2023 Labour Force Survey, women aged 25–34 exhibit relatively high levels of economic inactivity, with an inactivity rate of 44.3%, while employment levels in this age group are lower than those observed among women aged 35–44 and 45–54. These patterns suggest that the period immediately following childbirth is associated with reduced labour market participation among women.

Figure 21. Women's Labour Market Indicators by Age Group



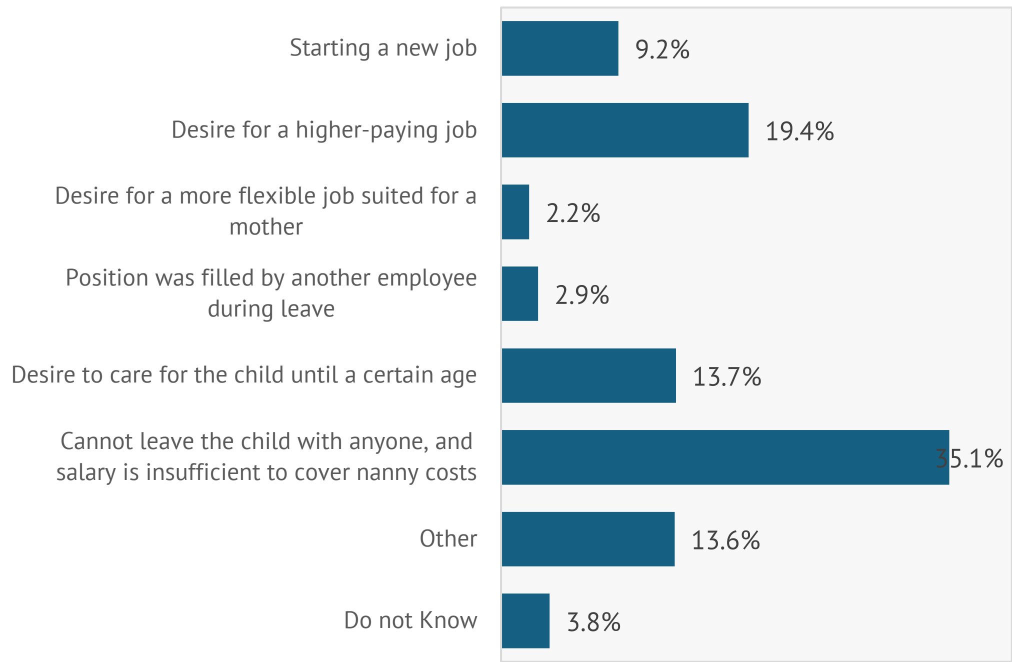
Source: Geostat, Labour Force Survey (2023)

Survey evidence provides additional insights into the labour market consequences of childbirth. A survey of mothers of newborn children conducted by UN Women and Geostat (2024) indicates that a significant share of mothers do not plan to return to employment after childbirth. Among surveyed mothers, 16% reported that they do not intend to return to work, while 8.9% remain undecided about their future employment plans.

The survey also highlights the economic and institutional constraints influencing these decisions. Among mothers who do not plan to return to their pre-birth employment, 35.1% cite the difficulty of leaving their child because their salary would not cover the cost of hiring a nanny. Other respondents report searching for higher-paying employment (19.4%) or choosing to personally care for their child until a certain age (13.7%). These findings indicate that childcare affordability and labour market conditions play an important role in shaping mothers' employment decisions following childbirth.

ISET

Figure 22. Reasons for Not Returning to the Pre-Birth Job (%)



Source: Geostat and UN Women (2024)

Building on the previous discussion of the gender gap in unpaid care work, the institutional framework regulating parental leave also plays an important role in shaping the economic costs of childbearing. When income replacement during leave periods is limited and labour market attachment becomes uncertain after childbirth, the opportunity costs of parenthood increase, particularly for women.

Over the past decade, the Government of Georgia has introduced several measures aimed at improving parental leave provisions. These include increases in maternity leave compensation in 2014 and 2023, the introduction of paid parental leave in the Labour Code, and the extension of leave conditions for public school teachers to align them with those of civil servants. Despite these improvements, several structural challenges remain. In particular, maternity and parental leave compensation for employees covered by the Labour Code remains relatively low, fathers' participation in leave is limited, and informally or atypically employed parents are largely excluded from compensation mechanisms.

A key limitation concerns the level of income replacement during maternity leave. The current system does not meet the minimum standards established by International Labour Organization Convention No. 183, which recommends compensation of at least 67 percent of prior earnings. In Georgia, the maximum state-funded compensation for the full maternity leave period of 183 days (for mothers working in a private sector or public sector but not being public servant) is 2000 GEL, which corresponds to approximately 23 percent of the average female salary in 2023. In addition, employers in the private sector are not legally required to provide supplementary compensation. According to a 2024 survey conducted by UN Women and Geostat, 56 percent of private sector employees received no compensation from their employer during maternity leave, while only 23 percent reported receiving full salary compensation.

Another important constraint concerns the limited availability and accessibility of childcare arrangements during the early years of a child's life. Access to early childhood education and care institutions for children aged 0–2 remains particularly restricted, while private childcare services such as nannies are often unaffordable for many households. According to the UN Women and Geostat (2024) survey of mothers of newborn children, only 4.4 percent of mothers reported that a nanny was the child's primary caregiver and only 0.5 percent used kindergarten services. Administrative data confirm the limited coverage of formal childcare services: among children aged 0–2, only 22,763 are enrolled in public kindergartens and 25,236 when private enrolment is included (Estimates are based on official data from the Ministry of Education and the authors' assessment of private kindergarten participation derived from the kindergarten audit), corresponding to coverage rates of 18% and 20% respectively. Compared with the target coverage rate of 50% for this age group (based on the OECD average), this implies a substantial coverage gap of 37,757 children. Although access improves for children aged 3–6, enrolment still remains below universal coverage targets, reaching 57% in public kindergartens and 63% when private institutions are included, leaving a considerable number of children without access to early childhood education services. In this context, many families cannot rely on formal childcare arrangements, which increases the burden of unpaid care within households and contributes to weaker labour market attachment among mothers.

Parental leave uptake also remains highly unequal between mothers and fathers. Administrative data indicate that in 2023 more than 13 thousand mothers used maternity or parental leave, compared with only 342 fathers. Although the number of fathers taking leave has increased gradually in recent years, their participation remains extremely limited. Similar patterns are observed in the public sector, where only about 11 percent of civil servants using paid parental leave were men.

Finally, broader economic conditions also shape fertility timing decisions. Economic uncertainty, unstable employment prospects, and housing constraints can all contribute to postponement of childbearing. When households face financial instability, they often delay parenthood until their economic situation improves.

CONCLUSION

The analysis presented in this report indicates that fertility dynamics in Georgia cannot be understood solely through the lens of declining fertility rates. Instead, they reflect a complex interaction between demographic structure, behavioural change, and institutional constraints that influence both the timing and the realization of births. Evidence discussed throughout the report shows that while fertility indicators have fluctuated over time, these dynamics are strongly shaped by postponement of family formation and childbearing rather than by a fundamental collapse in fertility preferences. Survey evidence consistently suggests that a two- or three-child family remains the dominant fertility ideal in Georgian society, indicating that the gap between desired and realized fertility outcomes is increasingly driven by structural and institutional factors.

One of the central mechanisms underlying this divergence is the growing postponement of births. Rising ages at marriage and first birth, declining adolescent fertility, and greater instability of partnerships shift births to later stages of the life course. As demographic literature demonstrates, such shifts generate tempo effects: when births are delayed relative to previous cohorts, period fertility indicators decline even if the total number of children women eventually have does not change substantially (Bongaarts & Feeney, 1998, 2000). In the Georgian context, these postponement dynamics interact with the shrinking size of cohorts of women of reproductive age, further reducing the number of births observed in annual statistics.

Beyond demographic timing effects, economic and institutional conditions play a crucial role in shaping reproductive decisions. The costs associated with childbearing—both direct and indirect—remain significant in Georgia. Direct costs include expenditures related to housing, food, clothing, education, and childcare,

ISET

while indirect costs arise from the opportunity cost of time, particularly the interruption of employment and income during pregnancy and childcare periods. These costs are unevenly distributed within households, with women carrying a disproportionate share of childcare responsibilities.

Institutional arrangements reinforce these constraints. The current system of maternity and parental leave provides limited financial protection for many workers, particularly in the private sector and among informally employed parents. At the same time, the absence of non-transferable paternity leave contributes to low levels of paternal participation in childcare, reinforcing gendered divisions of labour within families. Limited availability of early childhood education and care services further increases the burden of unpaid care, particularly for children under the age of three. Together, these factors create a situation in which many women face a difficult trade-off between labour market participation and family formation.

REFERENCES

Becker, G. S. (1960). An economic analysis of fertility. In National Bureau of Economic Research (Ed.), Demographic and economic change in developed countries (pp. 209–240). Princeton University Press.

Becker, G. S. (1981). A treatise on the family. Harvard University Press.

Becker, G. S., & Lewis, H. G. (1973). On the interaction between the quantity and quality of children. Journal of Political Economy, 81(2), S279–S288.

Black, S. E., Devereux, P. J., & Salvanes, K. G. (2004). The more the merrier? The effect of family size and birth order on children's education. The Quarterly Journal of Economics, 120(2), 669–700.

Bongaarts, J., & Feeney, G. (1998). On the quantum and tempo of fertility. Population and Development Review, 24(2), 271–291.

Bongaarts, J., & Feeney, G. (2000). The quantum and tempo of life-cycle events. Population and Development Review, 26(3), 560–564.

Caucasus Research Resource Centers. (2010–2019). Caucasus Barometer [Survey dataset]. CRRC.

Chung, W., Deopa, N., Saxena, S., & Stone, L. (2024). Religiously-inspired baby boom: Evidence from Georgia (Policy Research Working Paper No. 10218). World Bank.

Cigno, A. (1991). Economics of the family. Clarendon Press.

Cigno, A. (1994). Fertility and social security. In M. Bruno & B. Pleskovic (Eds.), Proceedings of the World Bank annual conference on development economics 1993 (pp. 55–86). World Bank.

DiPrete, T. A., Morgan, S. P., Engelhardt, H., & Pacalova, H. (2002). Do cross-national differences in the costs of children generate cross-national differences in fertility rates? Population Research and Policy Review, 22(5–6), 439–477.

Gauthier, A. H., & Hatzius, J. (1997). Family benefits and fertility: An econometric analysis. Population Studies, 51(3), 295–306.

Hakim, C. (2003). A new approach to explaining fertility patterns: Preference theory. Population and Development Review, 29(3), 349–374.

ISET Policy Institute. (n.d.). Women's economic empowerment in Georgia: Labour market outcomes and policy challenges [Report]. ISET Policy Institute.

International Labour Organization. (2000). Maternity Protection Convention, 2000 (No. 183). International Labour Organization.

Lanchava, G. (2014). Can the Georgian patriarch save Georgia? A quasi-experimental analysis of the effect of Ilia II's campaign on fertility (Working Paper No. 521). International School of Economics at Tbilisi State University.

Leibenstein, H. (1957). Economic backwardness and economic growth. Wiley.

Lesthaeghe, R. (2010). The unfolding story of the second demographic transition. Population and Development Review, 36(2), 211–251.

Lewin/ICF. (1990). Equivalence scales and the cost of children [Report]. Lewin/ICF.

Lyssiotou, P. (1997). Comparing the costs of children in the UK and Greece. Review of Income and Wealth, 43(3), 283–305.

McDonald, P. (1990). The costs of children: A review of methods and results. Family Matters, 27, 9–16.

Meladze, G. (2023). Low fertility: The challenge of demographic security of Georgia. Georgian Geographical Journal, 3(2), 76–88.

Notestein, F. W. (1945). Population—The long view. In T. W. Schultz (Ed.), Food for the world (pp. 36–57). University of Chicago Press.

OECD. (2005). Trends and determinants of fertility rates (DELSA/ELSA/WD/SEM(2005)6). Organisation for Economic Co-operation and Development.

Olier, L. (1999). Le coût de l'enfant: Une synthèse des évaluations [Report]. INSEE.

Oyama, H. (2004a). The cost of children in Japan: Evidence from household expenditure data [Report]. Government of Japan.

Oyama, H. (2004b). Measuring the direct costs of children: Methodological issues and Japanese evidence [Report]. Government of Japan.

Percival, R., & Harding, A. (2002). The cost of children in Australia today. NATSEM.

Polin, V. (2004). La spesa per i figli in Italia: Stime e confronti [Report]. ISTAT.

Ringen, S. (1998). Low fertility: Social policy and social responsibility. European Journal of Population, 14(2), 109–121.

Ritchie, H., Spooner, F., & Roser, M. (2023). Total fertility rate. Our World in Data.

Rothe, I., Aassve, A., & Billari, F. C. (2001). The direct cost of children: Evidence from the United States. Population Research and Policy Review, 20(5), 397–418.

Stone, L. (2021). The Georgian Orthodox Church and pronatalism: Mechanisms and limits of religious demographic mobilisation [Report/Working paper].

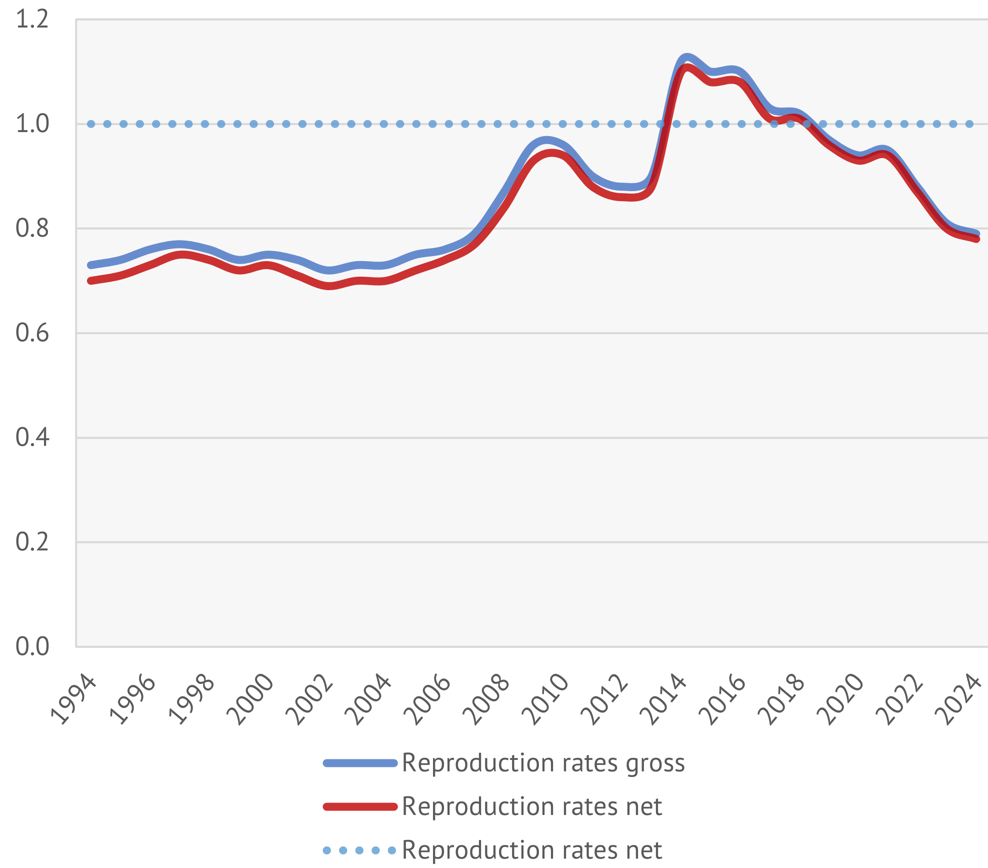
UN Women & National Statistics Office of Georgia (Geostat). (2024). Survey of mothers of newborn children: Labour market attachment, childcare arrangements, and leave usage in Georgia [Report]. UN Women; Geostat.

United Nations, Department of Economic and Social Affairs, Population Division. (2022). World population prospects 2022. United Nations.

ISET

APPENDIX

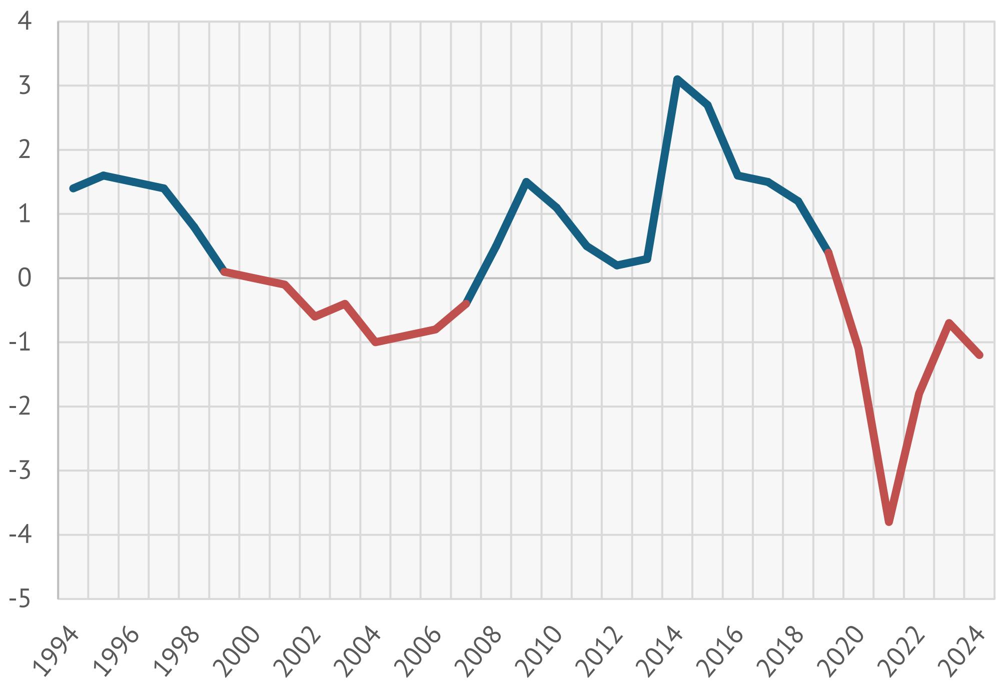
Figure A1. Gross and Net Reproduction Rates in Georgia, 1994–2024



Source: Geostat

ISET

Figure A2. Natural Increase Rate in Georgia (per 1,000 Population), 1994–2024



Source: Geostat

Methodological Box A1. Bongaarts–Feeney Tempo Adjustment of the Total Fertility Rate

The total fertility rate (TFR) is a period indicator that summarizes age-specific fertility rates observed in a given year. Although it is widely used to measure fertility levels, the TFR is sensitive to changes in the timing of births. When women postpone childbearing to older ages, fewer births occur in the current period, which mechanically lowers the period TFR even if women eventually have the same number of children. Conversely, when previously postponed births occur at later ages, the period TFR may temporarily increase without implying a long-term rise in completed fertility.

To address this distortion, Bongaarts and Feeney (1998) proposed an adjustment that separates the effects of changes in the timing of births (tempo effects) from changes in the total number of children women have over their lifetime (quantum effects). The adjusted indicator attempts to estimate what the total fertility rate would be if the timing of births remained constant.

The tempo-adjusted total fertility rate is calculated as:

$$TFR^* = \frac{TFR}{1 - r}$$

where

TFR^* — tempo-adjusted total fertility rate

TFR — observed period total fertility rate

r — annual rate of change in the mean age at childbearing

Estimation of the tempo parameter

The tempo distortion parameter r is defined as the annual change in the mean age at childbearing:

$$r = \frac{d(MAC)}{dt}$$

where

MAC — mean age at childbearing

$d(MAC)/dt$ — annual change in the mean age at childbearing.

If the mean age at childbearing increases over time, births are being postponed and the period TFR becomes downward biased. In this situation the adjusted TFR will be higher than the observed TFR. If the mean age at childbearing decreases, the opposite effect occurs.

The Bongaarts–Feeney adjustment provides an estimate of fertility that abstracts from distortions caused by changes in the timing of births. It therefore offers an indication of the underlying fertility level that would prevail if the timing of childbearing remained stable.

However, the method relies on several assumptions, including the relative stability of the age pattern of fertility and the proportional shift of fertility schedules across ages. For this reason, the adjusted TFR should be interpreted as an analytical approximation rather than a direct measure of completed cohort fertility.

In this study, the tempo-adjusted total fertility rate is calculated using annual estimates of the mean age at childbearing derived from age-specific fertility rates for Georgia. The adjustment allows the analysis to assess the extent to which changes in the timing of births contribute to fluctuations in the observed period total fertility rate.

Methodological Box A2. Methodology for Calculating the Gross Growth Potential of Women

The **gross growth potential of women** is an indicator used to evaluate the demographic capacity for future population reproduction by assessing the relative size of female cohorts entering reproductive ages. The indicator reflects the extent to which the structure of the female population supports future birth dynamics independently of changes in fertility behaviour.

Following the approach used in demographic studies of Georgia, the gross growth potential of women is calculated according to the **Bourgeois-Pichat formula**:

$$V_b = \frac{(\sum_0^{39} S \cdot K) \times 16}{N}$$

where:

V_b — Gross growth potential of women

S — Number of women by five-year age groups from 0 to 39 years

N — Total number of women in the population

K — Average value of the special function G up to age 39, representing the effect of age on the reproductive potential of female cohorts.

The coefficient K reflects the age-specific contribution of female cohorts to future reproduction and is derived from the function G, which measures the reproductive potential associated with each age group. The summation is performed across female age groups from 0 to 39 years, capturing the cohorts that will eventually enter reproductive ages. The resulting indicator therefore reflects the **future reproductive capacity of the female population based on its age structure**.

A higher value of the indicator indicates a relatively larger cohort of women approaching reproductive ages and therefore a stronger demographic potential for future births. Conversely, declining values suggest that smaller cohorts are entering reproductive ages, implying a reduction in the potential number of future births even if fertility behaviour remains unchanged.

The calculations and graphical representation of this indicator for Georgia are based on the methodology presented in **Meladze (2023)**

ISET

ABOUT THE ISET POLICY INSTITUTE

ISET Policy Institute's work adheres to scholarly standards and is grounded in scientific methods.

ISET Policy Institute maintains a portfolio of regular economic indices and scientific research publications. It conducts technical, economic, and sectoral analysis and descriptive or comparative research. ISET Policy Institute designs and applies advanced economic and quantitative analytical tools and data analysis technics.

Since its establishment in 2011, ISET-PI has grown into one of the reputable economic think tanks, recognized for its commitment to academic integrity, methodological rigor and evidence-based research.

The institute employs economists/researchers and engages in diverse array of research work, many of which are implemented in partnership with international think-tanks, academic institutions, and other partners.

ISET

ISET POLICY INSTITUTE
www.iset-pi.ge
iset-pi@iset.ge
+995 322 507 177