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What's Behind Declining Birth Rates in the U.S.?

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Abstract: Using the National Survey of Family Growth, this paper explores reasons behind the falling birth rate in the United States. The analysis confirms that newer generations of women are less likely to have any children than generations that came before. Comparing outcomes among women at the same age, two sources for this decline are identified: (1) a dramatic decrease in the desire to have children, but only among the youngest generation in the sample (Gen Z) and (2) an increase in the medical difficulty of having children among all generations of women since the Boomer generation. Various policies addressing both desire and difficulties are discussed in the context of a goal to arrest or reverse declining birth rates. The primary contribution this paper is consideration of increasing medical difficulty in conceiving and bearing children (impaired fecundity) alongside the current dominant theory of shifting priorities and preferences of recent cohorts of women.

JEL classification: J13, I19, Q58

Key words: birth rates, total fertility rates, infertility, impaired fecundity, microplastic, IVF, family formation, Gen Z, cohorts

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What's Behind Declining Birth Rates in the U.S.?

I. Introduction

Declining birth rates in the United States have generated renewed concern about long-run economic performance, as slower population growth directly shapes the trajectory of consumption demand, labor supply, and the fiscal capacity needed to support an aging population. The U.S. is not alone among developed economies that have seen their total fertility fall below the accepted replacement rate of 2.1 percent (Craig 1994).[1]

Existing explanations emphasize shifting preferences and priorities, especially among younger cohorts, as the primary driver of falling birth rates. This view has become the dominant narrative in both policy and academic circles (e.g., Melissa S. Kearney et al. 2022). However, the United States has simultaneously experienced a sustained rise in medical impediments to childbearing, including both infertility and impaired fecundity.[2] Distinguishing between preference-driven and biologically driven fertility decline is critical for understanding how much of the trend reflects conscious choices versus emerging physical constraints on family formation. The central contribution of this paper is to bring these two explanations together, evaluating the relative importance of changing desires for children and increasing medical difficulty in conceiving and sustaining pregnancies.

To do so, the analysis uses microdata from the National Survey of Family Growth (NSFG) and estimates a trivariate probit model that jointly determines (1) whether a woman has had a child, (2) whether she wants a(nother) child, and (3) whether she experiences impaired fecundity (a robustness exercise explores changes in infertility). This empirical framework allows us to quantify the extent to which observed birth outcomes reflect

[1] The "replacement rate" reflects the average number of children women have during their reproductive years.
[2] Further details on defining these terms are in the following section. But briefly, a woman is considered "infertile" if she and her partner had been sexually active, had not used contraception, and did not become pregnant during the previous 12 months or longer, whereas "impaired fecundity" describes a condition where a woman is *either* physically unable to conceive *or* is physically unable to have a pregnancy that results in a live birth.

demand-side preferences versus biological limitations, holding constant key demographic characteristics. We uncover noteworthy differences between Gen Z and earlier cohorts, illustrating how the interplay between preference shifts and medical challenges has evolved over time. Our findings underscore that effective policy responses to falling fertility require understanding not only to what women want, but also what constraints they may be facing biologically.

The next section reviews the economic mechanisms through which fertility shapes growth. Section III documents recent trends in fertility and fecundity. Section IV describes the data and key measures, followed by Section V, which presents the empirical framework and main results. Section VI discusses potential explanations for the patterns uncovered, and Section VII outlines policy considerations. Section VIII concludes.

II. Fertility and Economic Growth

Theoretically, economists have argued on both sides of the relationship between fertility and economic growth. Of course, Malthus (1798) predicted resources becoming increasingly scarce as a population grows, hampering economic growth. Galor and Weil (1996) argue that higher fertility could reduce short-term growth by decreasing parental labor supply and Becker, Murphy, and Tamura (1990) argue that long-term growth could be negatively impacted as the higher quantity of people comes at a cost of human capital investment (quality) and, hence, less innovation (also see Bucci and Prettner 2020). Alternatively, a growing population can increase growth through increasing availability of labor resources (Bloom et al. 2009) and through growing demand (Solow 1956). Further, Romer (1990) points out that a larger population increases the odds of further innovation. Most recently, Weil (2026) estimates (through simulation techniques) that a one-child decline per woman in the total fertility rate would lower per capital consumption by 8.7 percent. He argues that since this decline would occur over several decades, it shouldn't be alarming.

Weil's (2026) conclusions are consistent with those from Huang (2024) who finds, with data spanning 56 years and 137 countries, that long-term economic growth is significantly negatively impacted by lower fertility rates.[3] He finds this to be the case across low- middle- and high-income countries. Huang illustrates that even in long panels of data, earlier studies have captured only short-term fertility variation. By including long-term lags of fertility, he is able to uncover the long-term impacts of fertility rates on economic growth. He estimates that a one-unit (i.e., percentage point) lower fertility (birth) rate would result in a five percent lower per capita growth in GDP over a period of four decades. The implication is that the roughly five percentage point drop in average global birth rates since 1985 has cost the world economy 25 percentage points of economic growth.

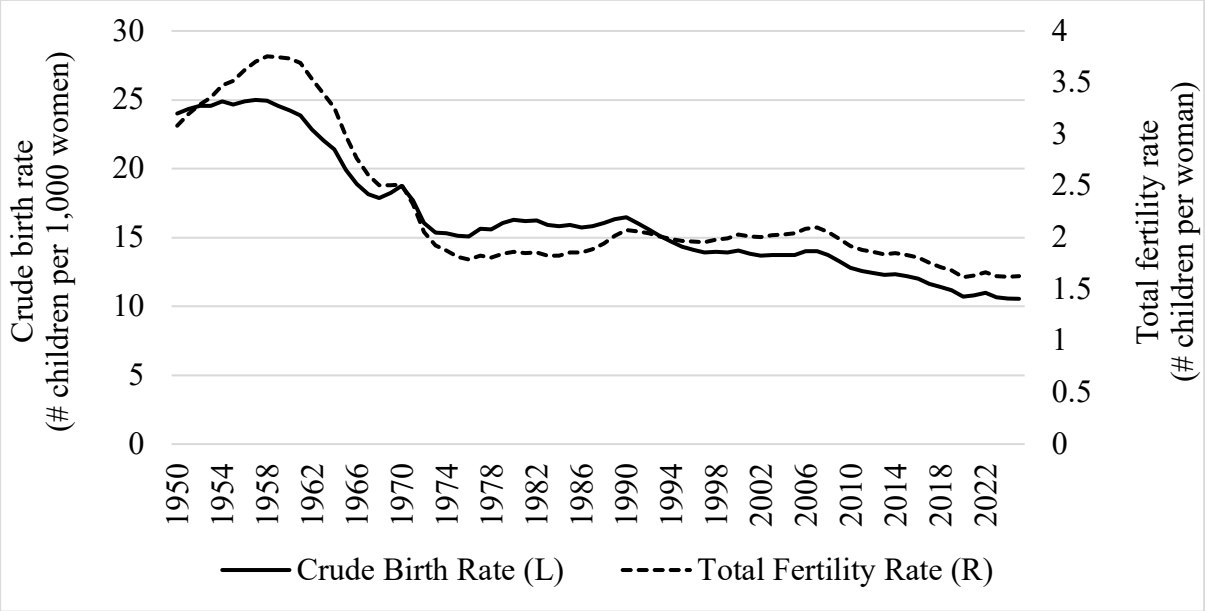
Huang's (2024) finding of a non-linear relationship between fertility and economic growth suggests that lower fertility rates would initially increase economic growth as parental labor supply increases. But the resulting lower population growth would lead to less consumption demand and less potential innovation in the long-run, negatively impacting economic growth.

III. Contributions to Falling Total Fertility/Birth Rates

"Total fertility" of a population refers to the average number of births per woman in her lifetime. Another measure that is often used to capture trends in reproduction is the (crude) birth rate. While the total fertility rate measures how many live births a woman is expected to have during her reproductive years, the birth rate is typically measured by the number of births per 1,000 women at a given point in time (United Nations 2024). These two statistics are, of course, very closely related. Fig. 1 plots the crude birth rate and total fertility rate for the United States between 1950 and 2025.

[3] Also see Jones (2022). Based on data available, Huang (2024) had to rely on crude birth rates across countries as his measure of "fertility."

Fig. 1 Crude birth and total fertility rates, United States, 1950-2025.



Source and notes: United Nations, Department of Economic and Social Affairs, Population Division (https://population.un.org/wpp/). Crude birth rate is defined as the number of births over a given period divided by the person-years lived by the population over that period. It is expressed as number of births per 1,000 population. Total fertility rate is defined as the average number of live births a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as live births per woman.

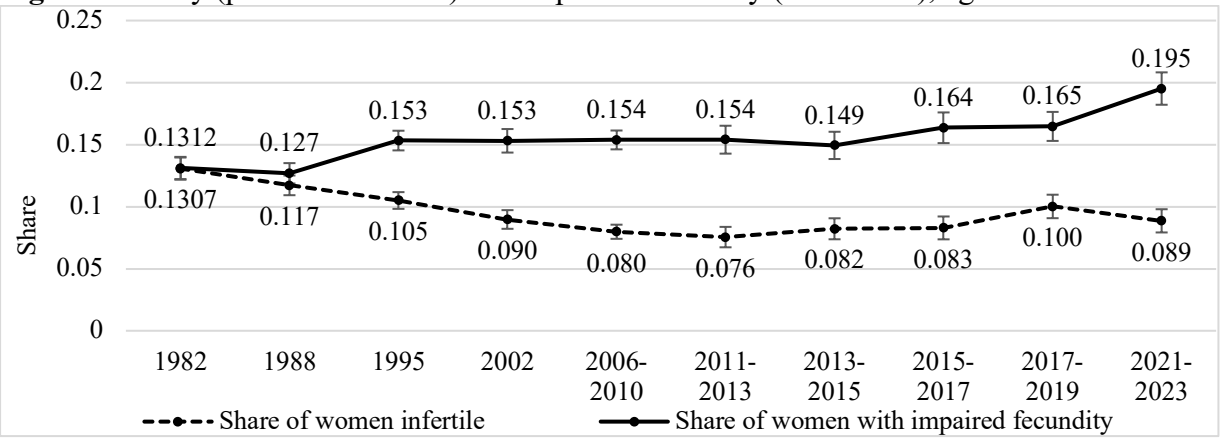
Unsurprisingly, both total fertility and birth rates have followed the same declining trend in the U.S. since 1950. The most dramatic rate of decline was seen between 1960 and 1980, following availability of the first oral contraceptive in 1960 (Bailey 2006) and liberalized access to abortion (Myers 2017). After a period of plateau, rates again continued on their downward trajectory since the mid-2000s. Kearney, Levine, and Pardue (2022) confirm that declining birth rates is a phenomenon that crosses many demographic and socioeconomic classifications. They conclude that the most likely explanation for recent declines in birthrates is shifting priorities of newer cohorts of women (also see Hotchkiss 2022; Kearney and Levine 2025).[4] Additionally, Buckles et al. (2022) find that the decline in post 2007-recession birth rates is explained primarily by decreased sexual activity, more

[4] Declining birth rates begs the question of whether women are having fewer children or more women are having no children. Geruso and Spears (2026) find that childlessness accounts for 38 percent of the decline in cohort fertility in developed economies.

effective and use of birth control, and changing demographics. They conclude that these declines are not merely a shift of family formation to later ages, suggesting these declining birth rates will translate into lower total fertility.

Another, rarely considered, potential source of declines in birth rates are the medical conditions of infertility and impaired fecundity.[5] Increasing infertility and/or impaired fecundity will, necessarily, all else equal, also contribute to lower fertility and birth rates. Fig. 2 illustrates the trends in these two statistics for women ages 20 to 40 from 1982 to 2023, based on the National Survey of Family Growth (NSFG) conducted by the Centers for Disease Control and Prevention (CDC) National Center for Health Statistics (NCHS). While impaired fecundity has been on an upward trend since 1982, infertility reversed its downward trend and started increasing in the early-2010s. This paper will investigate the heterogeneity in these trends and discern what roles infertility and impaired fecundity play in the observed downward trends in birth rates, relative, to changes in desires of women to have children.

Fig. 2 Infertility (partnered women) and impaired fecundity (all women), ages 20-40.



Notes and Source: National Survey of Family Growth (NSFG), 1982-2023, and authors' calculations. Weighted percent of women, ages 20-40, who are not surgically or contraceptively sterile. Impaired fecundity relates to the inability to have a successful live birth and applies only to partnered women. Further detailed definitions are in the text.

[5] Further details on defining these terms are in the following section. But briefly, a woman is considered "infertile" if she and her partner had been sexually active, had not used contraception, and did not become pregnant during the previous 12 months or longer, whereas "impaired fecundity" describes a condition where a woman is *either* physically unable to conceive *or* is physically unable to have a pregnancy that results in a live birth.

IV. Measuring Infertility, Impaired Fecundity, Birth Rates, and Preferences

A. National Survey of Family Growth

The National Survey of Family Growth (NSFG) is the most widely used survey in the U.S. for information about "pregnancy and births, marriage and cohabitation, infertility, use of contraception, family life, and general reproductive health" (NCHS 2022). The survey began interviewing ever-married women between the ages of 15-44 in 1973. In 1982, the survey expanded to include women regardless of marital status and expanded again in 2015 by increasing the upper-age limit to 49 years old. In 2002, an independent sample of men (ages 15-44) started being interviewed. The survey is designed to be nationally representative of the civilian, non-institutionalized population within the age range indicated with the number of women surveyed ranging from 6,000 to 10,000, depending on the survey years. And like most voluntary surveys, responses rates have declined from about 90% in 1973 to 55% in the 2021-2023 survey years.

B. Definitions

Infertility. The NSFG defines infertility based on very specific criteria. First of all, infertility is defined for only partnered (married or cohabitating) heterosexual women. At the time of the interview, if (1) neither the woman nor her partner is surgically sterile; and, (2) during the previous 12 months, they (a) have been living continuously together, (b) were sexually active each month, (c) were not using contraception, and (d) the woman did not become pregnant, *she* is considered to be infertile. While either partner may be the source of the infertility, the designation is assigned to the women (which, admittedly, raises other questions about stigmatization surrounding infertility; see Whiteford and Gonzalez 1995; Lin and Susser 2022). If a woman is considered infertile for 36 months or more, then her condition changes from infertile to having impaired fecundity.

Impaired Fecundity. Irrespective of partnered status, impaired fecundity relates to the inability to either become pregnant *or* have a successful live birth. There are several categories in which a woman may be considered to have impaired fecundity. First, she can identify as being surgically or contraceptively sterile (this could relate to either herself or her partner). Second, if a woman has indicated that neither she nor her partner is surgically or contraceptively sterile, she is asked, as far as she knows, (a) if either she or her partner would have any difficulty getting pregnant/fathering a child or carrying a baby to term, or (b) if a doctor has ever advised her not to become pregnant (for whatever reason). In this second case, the woman is considered "subfecund." A third category of impaired fecundity includes women who are classified as long-term infertile; this refers to women who have not conceived for 36 months or more. If a woman indicates she is contraceptively or surgically sterile, we don't know whether she would be fecund in the absence of that surgery or contraception. For the purposes of this analysis, we classify the fecundity of those women as unknown.[6] The Appendix contains a flow chart showing how women are classified as "infertile" or having "impaired fecundity." The focus of this current paper will be on identifying women with impaired fecundity. Results of a parallel analysis for "short-term" (less than 36 months) infertility is presented in an Appendix.

Parity. The NSFG asks women of all ages whether they have any children at the time of the survey -- "parity."[7] This response will be used to capture the point-in-time average birth rate by year or by cohort. This measure, of course, does not measure the total number of children each woman is expected to have during their entire reproductive years, so is more reflective of birth rates, not total fertility rates. However, as seen in Fig. 1, these measures are highly correlated over time.

[6] A robustness check classifying those who are contraceptively or surgically sterile as having impaired fecundity produces results and conclusions not materially different than those reported here.
[7] We're using the term "parity" for conciseness, although, technically, it typically refers to number of pregnancies, rather than number of children.

Want Children. All women are asked whether they want any (more) children. This is asked of all women whether they already have any children or not. This response captures preferences of women of all ages and of all parity levels *at a given point in time*. This variable is the closest we can get to measuring preferences of women over time and across cohorts. Since this is a point-in-time measure, we can't be sure whether the response reflects a woman's desire to *ever* have any children or her desire to have children *at that specific point in time*. We interpret the response as the woman's general desire to have children, whether she's actually planning to or not.

Cohort. The analysis will focus on comparing women's responses in the survey at the same age across cohorts. While definitions vary slightly from one source to the next, the population can be grouped into "cohorts" by birth year. Since family formation decisions and medical difficulties are highly age dependent, it will be important to compare outcomes by age, so the results will be presented by cohort and age. For the purposes of this paper, five cohorts are defined: (1) The Silent Generation (born 1928 - 1945), (2) The Boomer Generation (born 1946 - 1964), (3) Generation X (born 1965 - 1980), (4) The Millennial Generation (born 1981 - 1996), and (5) Generation Z (born 1997 - 2012).[8] Additional generations have been named, for example Generation Alpha (born 2013 - 2024), but the first 5 generations are the only age groups represented in the analysis sample.

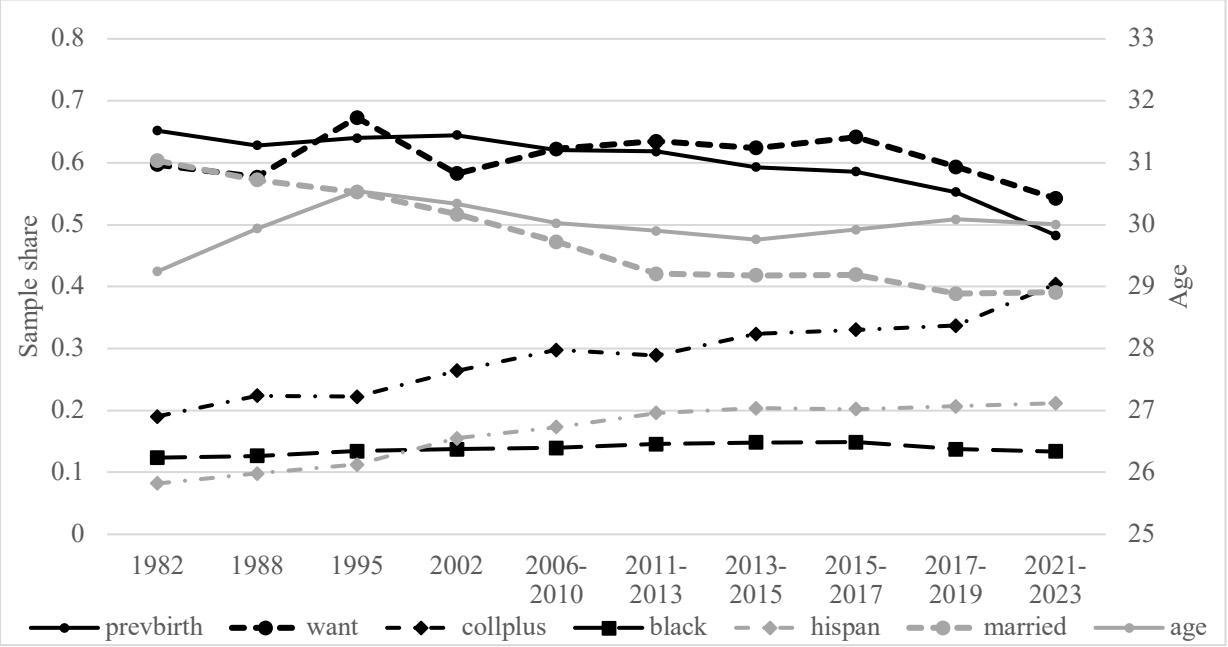
C. Sample Demographics over Time

Changing demographics can have an impact on measured infertility, impaired fecundity, parity, and wanting children. The most significant change in the population likely to affect these outcomes is age. As the population ages and, perhaps, simultaneously, women put off starting a family, issues of infertility and impaired fecundity will become more salient; parity will be higher (all else equal), as older women will have had more time to have

[8] See Sun and Askinasi (2025).

any children; and wanting children may decline, as the older a woman is the more likely she will have already achieved her desired family size. Fig. 3 plots the trends in these variables of interest, as well as trends in various other demographics, over the survey years.

Fig. 3 Sample means, NSFG, women ages 20-40.



Notes and Source: National Survey of Family Growth (NSFG), 1982-2023, and authors' calculations. Weighted percent of women, ages 15-44. The universe for women asked about wanting a child was slightly different in 1995 so may not be exactly comparable to other years.

The NSFG reflects the declining average birth rate as the share of women with any children (prevbirth) declines over the sample period. Additionally, changing average preferences for having children is also apparent through the (recently) declining indication of wanting children (want). However, both of these measures are confounded by other changes in demographics taking place over time. Consistent with that potential change in preferences for having or wanting children is the dramatic growth in women with a college degree (collplus) as more educated women, on average, have fewer children. Additionally, while the share of Black women has risen only slightly over the period, the share of Hispanic women has increased from eight percent in the 1982 survey to 22 percent in the most recent survey.

And, lastly, note that these means are for women only between the ages of 20 and 40 so we see only a slight rise in average age over this time period.

Observations from the 1995 survey are excluded from the analysis below. In the 1995 survey, only women (or their partner) who did not have some form of sterilization were asked the question about whether she wanted a(nother) child. For consistency in sampling universe, this survey year is excluded. A robustness test that includes 1995 produces the same trends, comparisons, and conclusions (results available upon request).

D. Time versus Cohorts

In the analysis that follows, determinants of having children, wanting children, and being medically constrained will be estimated simultaneously, holding demographic characteristics constant. This will allow us to assess the relative importance of wanting children and medical challenges in the determination of observing women having children, while holding constant potentially confounding important demographic changes, such as age, education, etc.[9] An important part of the analysis below will be to assess changes across cohorts of women *at the same age*. Age is one of the strongest correlates with each of the three outcomes of interest.

V. Empirical Analysis

Both conscious decision and physical capability influence whether women have children. The purpose of this empirical analysis is to disentangle the role that medical constraints (impaired fecundity) play in the declining birth rate. The analysis assumes that women respondents in the NSFG have full bodily autonomy.

We model (1) having children (parity > 0), (2) wanting (more) children, and (3) impaired fecundity as a seemingly unrelated simultaneous three-equation system that is estimated as a tri-variate probit model:

[9] There aren't enough degrees of freedom to perform the analysis separately by age or cohort.

$$
\begin{aligned}
PrevB^* &= \beta_1' x_1 + \delta_1 ImpFecund + \varepsilon_1, \quad PrevB = \begin{cases} 1 \; if \; PrevB^* > 0 \\ 0 \; otherwise \end{cases}; \\
Want^* &= \beta_2' x_2 + \delta_2 PrevB + \varepsilon_2, \qquad Want = \begin{cases} 1 \; if \; Want^* > 0 \\ 0 \; otherwise \end{cases}; \qquad (1) \\
ImpFecund^* &= \beta_3' x_3 + \varepsilon_3, \qquad ImpFecund = \begin{cases} 1 \; if \; ImpFecund^* > 0 \\ 0 \; otherwise \end{cases};
\end{aligned}
$$

$E[\varepsilon_1] = E[\varepsilon_2] = E[\varepsilon_3] = 0$;
$V[\varepsilon_1] = V[\varepsilon_2] = V[\varepsilon_3] = 1$; and
$Cov[\varepsilon_1, \varepsilon_2, \varepsilon_3] = \rho$.

As a tri-variate probit, the maximum likelihood function is given as: [10]

$$Prob(X_1 < x_1, X_2 < x_2, X_3 < x_3) = \int_{-\infty}^{x_3} \int_{-\infty}^{x_2} \int_{-\infty}^{x_1} \Phi_3(z_1, z_2, z_3, \rho) dz_1 dz_2 dz_3 \; . \qquad (2)$$

The regressors used in the analysis are listed in a table in an Appendix along with the correlation coefficient of each regressor with each of the dependent variable outcomes. Some of the most highly correlated variables are Parity and Want, and Age with Parity and Want.

A. Trivariate Probit Parameter Estimates

The analysis includes all women, ages 20-40, who are neither surgically nor contraceptively sterile, and considers the simultaneous determination of Parity, Want, and Impaired Fecundity.[11] The Appendix contains the maximum likelihood parameter estimates. Correlation coefficients between the error terms are 0.030 (prevb and want, P > |z| = 0.320), 0.068 (prevb and impfecund, P > |z| = 0.019), and 0.079 (want and impfecund, P > |z| = 0.000). Most regressors are statistically significantly different from zero and are related to the dependent variables in ways that would be expected. Age is positively associated with *prevb* and *impfecund* and negatively associated with *want*. Having a higher education is negatively associated with *prevb* and *impfecund*, but positively associated with *want*. The survey year dummy variables show a decline in *prevb* and *want* over time, but an increase in *impfecund*.

[10] We make use of sample survey weights and estimate the model using the Stata procedure _mvprobit_. Predicted probabilities presented later are estimated using the user-provided procedures _mdraws_ and the _egen_ function _mvnp_ (see Cappellari and Jenkins 2006).

[11] This age range was chosen so we could have respondents from each cohort.

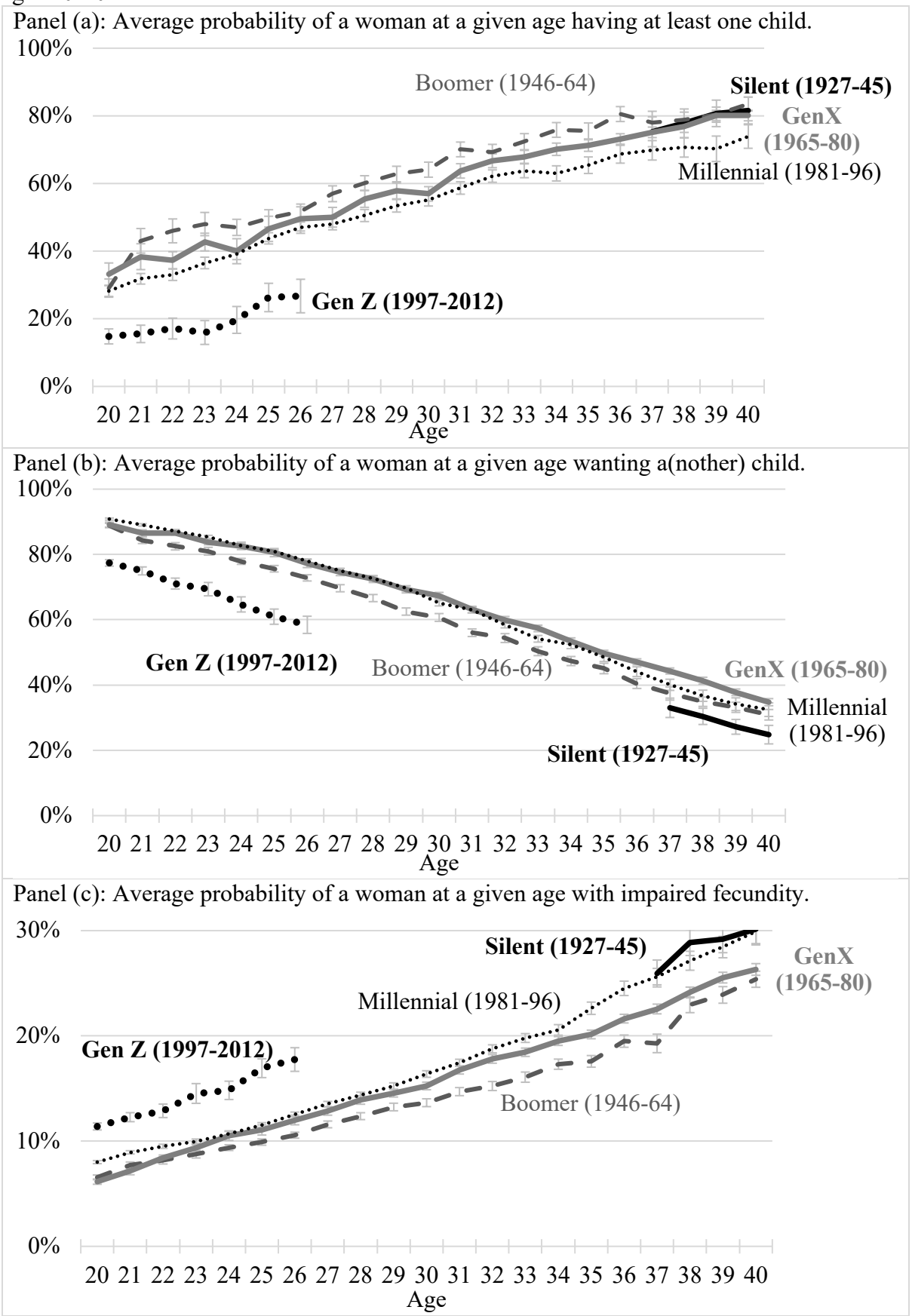
Cohort dummy variables, alone, show a mixed progression of each of the dependent variables. Predicted probabilities allow us to assess the progression of each of the three probabilities across cohorts and age, other potential confounders constant.

B. Predicted Probabilities

Average predicted probabilities for the full sample over time reflects the means for *prevb*, *want*, and *impfecund* seen in Fig. 3 -- declining incidence of a previous birth, declining probability of wanting a child over time, and an increasing probability of impaired fecundity over time. However, looking at averages simply over time, obscures the importance of age in each outcome. Fig. 4 illustrates the predicted probabilities of having a child, wanting a child, and impaired fecundity for women ages 20-40, by cohort across age. Comparing probabilities across cohorts allows us to compare changes in each of the probabilities for women from different cohorts when women in each of the cohorts are at the *same age*, while holding constant everything we can observe for these women constant (e.g., race, education, partner status, income, etc.).

Previous Birth (Parity>0). Panel (a) in Fig. 4 shows the probability of a woman at each age having a child, by cohort. The probabilities for all cohorts increase with age, as the older a woman is, the more likely she is to have had a child, all else equal. The probabilities of a woman from Silent, Boomer, and Gen X cohorts having had a baby by the time they are 37 years old are all pretty much the same -- between 70 and 80 percent. At younger ages, however, post-boomer cohorts are less likely to have had a baby at any given age. The practically parallel probabilities across age, and the fact that the oldest Millennials have a lower probability than previous cohorts indicates that lower birth rates are more than merely delayed family formation -- women of more recent generations are less likely to have had a baby at every age. The probabilities of having a baby at the ages for which we observe Gen Z indicate a whole order of magnitude lower birth rate among this generation.

Fig. 4 Predicted probabilities from trivariate probit estimation by cohort across age, women ages 20-40.



Notes and Source: NSFG, 1982-2023, and authors' calculations.

Wanting Children. We would expect that the desire to have a(nother) child declines with age, which is what we see in Panel (b) of Fig. 4. Perhaps surprisingly, however, the average Gen Xer's and Millennial's desire to have a child is generally higher than that of Boomers at every age. Not wanting to have children (i.e., preferences or priorities) is perhaps the most-often assumed reason birth rates are lower among post-boomer cohorts, but this doesn't appear to be an assumption based in fact for Gen X or Millennials. Gen Z, however, is another story -- the average probability of a Gen Z woman wanting a(nother) child is dramatically lower than all previous cohorts at the same age.

Impaired Fecundity. As seen in Panel (c) of Fig. 4, the average probability of impaired fecundity is relatively small, averaging around 10 percent among 20 year-olds, rising to an average of about 28 percent by age 40. Nonetheless, the rise in impaired fecundity across cohorts is clear. Cohorts after the Boomers saw a continued rise in impaired fecundity at every age, especially after the age of 30, with the most dramatic jump seen with Gen Z.[12] Much of the rise in impaired fecundity among Millennials may be attributable to delayed family formation decisions (Guzzo 2022), although as the higher impaired fecundity rates at younger ages indicates, delayed family formation is not the full story.

Results of a parallel analysis for "short-term" (less than 36 months) infertility is presented in an Appendix. Patterns across cohorts for parity and want are similar to those for impaired fecundity. However, we do see a decline in short-term infertility at each age across cohorts. Given that at 36 months of infertility a woman switches (categorically) from infertile to having impaired fecundity, it's difficult to interpret those result, but they are presented in the Appendix.

[12] The relatively high share of impaired fecundity among the Silent generation is because we are conditioning the sample of women who are neither surgically nor contraceptively sterile -- a condition into which a disproportionately high share of Silent generation women fell.

Summary. While both a decreasing desire to have children and increasing impaired fecundity are strongly related to declines in birth rates among Gen Z women, increasing impaired fecundity seems to be a more important contributor to declining Millennial and Gen X birth rates, as the average probabilities of wanting children for those women are mostly higher than for Boomers. The implication is that causes of rising impaired fecundity and solutions to address it should be part of any policy discussion surrounding population growth.

VI. Potential Reasons Behind Differences in Probabilities Across Cohorts

The results in this paper confirm that at every age, newer generations of women are less likely to have any children than generations that came before. The results also point to a dramatic decline in the desire to have children (*want*) and a similarly dramatic increase in the medical difficulty having children (*impaired fecundity*) among the youngest Gen Z cohort. However, the probability of a Gen X or Millennial woman wanting children is greater than that of women of the same age in the Boomer generation. This leaves only the rise in impaired fecundity as an explanation for the declining birth rates among Gen X and Millennials, relative to Boomers. In this section we explore various potential explanations, as suggestive, not causal, for a declining desire to have children (among Gen Z) and a rise in impaired fecundity among post-Boomer women. The discussion here and policy considerations assumes a goal of arresting or reversing the declines in population growth.

A. Social Support and Cost Considerations

Nobel Laureate, Claudia Goldin, suggests that an important driving force in declining birth rates are rigid societal norms (Goldin 2024). She argues that to reverse downward trends in birth rates, societies, and men in particular, have to catch up with the desires and increasing autonomy women have enjoyed through structural changes over time (e.g., women's control over their own fertility and increasing educational attainment by women). Evidence of how norms can change comes from a survey of high school seniors -- between

1993 and 2023, the share of boys expecting to get married is unchanged at about 75%, whereas the share of girls decreased from 83% to 61% (Braga 2025).

While changing societal norms is a tall order, recommendations for improving real support for women having children include mandating paid maternity leave (Gray 2025). As of 2023, only 27 percent of workers in the U.S. have access to paid family leave through their employer (BLS 2023). Additionally, the "motherhood penalty" in the labor market is well documented, with women who become mothers experiencing up to a 60 percent drop in earnings relative to men who become fathers (for example, see Almond et al. 2023; Murray et al. 2023; Hotchkiss and Pitts 2003; McFall 2024).[13]

Financial Costs. Others point to arguably more tangible barriers to wanting children. More recent generations may be viewing the decision to have children as more of an investment than preceding generations. And, with rising costs (and decreasing availability) of childcare, increasing expectations (and cost) of providing children with educational opportunities, and re-ordering priorities already set by delayed family formation decisions, the costs can be prohibitive (news.com.au 2024). A 2023 U.S. Department of Labor study reports that annual childcare costs per child range across the U.S. from between 8 and 19 percent of the U.S. median family income (Landivar 2023). Not only are costs of care increasing but other costs, such as housing, healthcare, and education, are squeezing the family budget, producing less disposable income to absorb the cost of having children. The 2025 American Family Survey reveals that 7 out of 10 Americans feel it's unaffordable to have children -- this is a 13 percentage point increase from the 2024 survey (Irwin 2025).

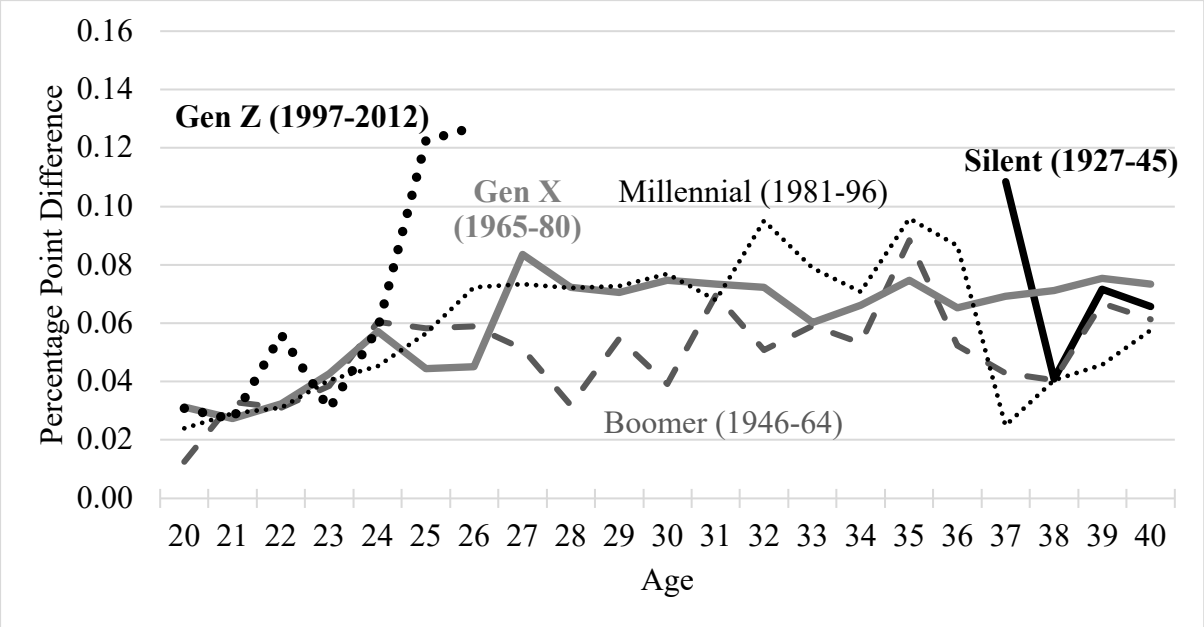
Empirical evidence of the link between financial constraints and birth rates is provided by Melissa S. Kearney and Levine (2023) who document a baby "bust" (fewer

[13] Also see Chung et al. (2017) and Goldin (2024). W. Huang et al. (2025) finds that fertility rates in China are lowest in provinces with the highest motherhood penalties.

births) during the COVID-19 pandemic, particularly among states with the largest loss in employment and largest reductions in spending. Analogously, they also find a larger rebound in births in states whose employment conditions and family spending rebounded most vigorously. Further evidence comes from Cumming and Dettling (2024) who find that among families eligible to benefit from lower mortgage rates during the Great Recession, each percentage point drop in the Federal Reserve rate increased birth rates by three percent.[14]

A link between financial considerations and wanting children is also found here. Fig. 5 plots the difference between the average predicted probability of wanting a child for women whose family income is *above the median* versus *below the median*.[15]

Fig. 5 Predicted probabilities from trivariate probit estimation, by cohort across age, women ages 20-40; differences in predication of *want* for women above and women below median income.



Notes and Source: NSFG, 1982-2023, and authors' calculations.

While the estimates of predicted probability differences in Fig. 5 are fairly volatile, given the relatively small sub-sample sizes, some patterns emerge. All the probability differences are positive, meaning that, overall, the average probability of wanting a child is

[14] Also see Gallego and Lafortune (2023) for evidence of the same effect in Chile. By contrast, the opposite impact of a wealth shock on fertility is found in China (Liu et al. 2023).
[15] Family income in the NSFG is only reported categorically so we calculated where a woman's family is located relative to the median for the survey year.

higher among families with above-median income than those with below-median income, all else equal. Additionally, for women less than 24 and older than 31, the importance of income in wanting a child is pretty much the same across all cohorts. By the age of 24 for Gen Z and the age of 26 for Gen X and Millennials, however, income is more important in wanting a child than it was for earlier generations. For example, at age 26, the probability of wanting a child among Gen Z is nearly 13 percentage points higher for women with above-median income than for women with below-median income -- relative to roughly a seven-percentage point difference at the same age among earlier generations of women.

Maternal Mortality and Violence. Costs of having children aren't restricted to financial costs. Maternal mortality or morbidity and violence, in general, may also be contributing to current generations' assessment of the cost to having children in the U.S. At 17 per 100,000 live births, U.S. maternal mortality exceeds, for example, that of Canada (at 12), all of Western Europe (ranging from one to eight), and all of the Balkin countries, which averages about six per 100,000 (World Health Organization 2025). In addition, the maternal mortality rate in the U.S. is more than three times larger for Black women than for White women (Hoyert 2025), which is consistent with our estimate of a lower probability of wanting children at every age among Black women relative to White women.[16]

Additionally, mass shootings in schools may be giving Gen Z (sometimes referred to as the "Lockdown Generation," GIFFORDS 2025) second thoughts about subjecting children to their own frightening experiences. Currie et al. (2023) have also found a direct link between exposure to violence and birth outcomes. They estimate that exposure to a mass shooting by pregnant women significantly increases the probability of low birth-weight or very pre-mature birth by 25 percent.

[16] Although the small samples of Black women make those results less precise, the pattern of results for Black and White women are similar, except the probability of impaired fecundity among Black women is lower than that for White women and decreases with cohorts. Results by race are available upon request.

B. Medical and Environmental Considerations

Evidence of environmental threats to fertility have a long history. Lead contamination is suspected of contributing to fertility declines in Ancient Rome (Tayeh 2020; Cilliers and Retief 2019; Sumner 2014). The Roman upper-class was particularly vulnerable to lead exposure through lead acetate used to sweeten wine, lead used to achieve the deep purple and red colors favored by the wealthy, and lead contained in make-up worn by the upper-class women. Additionally, lead pipes used to deliver tap water to the wealthy were also a likely source (Delile et al. 2014). The practice of upper-class Roman men regularly taking extremely hot baths has also been identified as a contributing factor to the fertility problem (Devine 1985).[17]

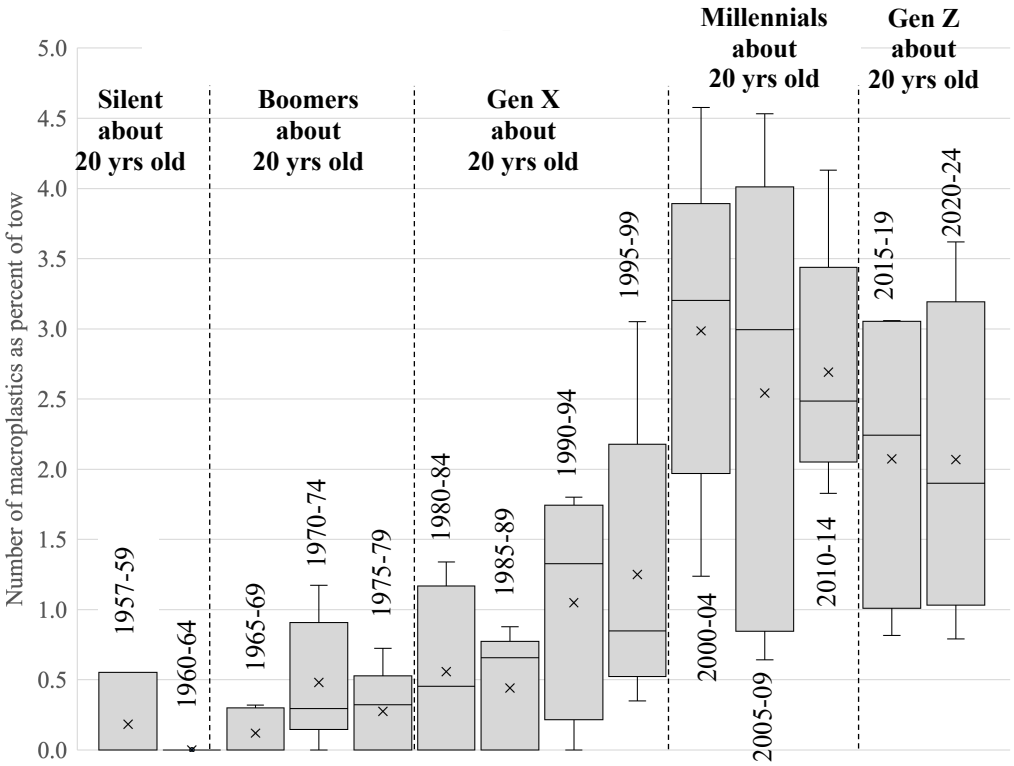
Turning to present time, Canipari, De Santis, and Cecconi (2020) identify several pollutants found to be particularly deleterious to the reproductive process, including heavy metals, such as lead; air pollution; plastics; and rising temperatures. Not only are these threats particularly acute for women (given their fixed number of reproductive cells), evidence of the negative impact of the presence of chemicals found in plastics on female *and male* infertility is well-known (D'Angelo and Meccariello 2021; Hu et al. 2024; Zurub et al. 2024). Plastics contain chemicals that are known endocrine disrupters (Koelmans and Pahl 2019) and the presence of those chemicals in the body have been linked to obesity (Heindel et al. 2022), early onset of puberty (Chen et al. 2018; Wolff et al. 2017), low sperm quality and quantity (M. S. Bloom et al. 2015), and ovarian function (Land et al. 2022).

The concern about exposure to endocrine-disrupting chemicals stems from a dramatic rise in plastics found in the environment. Fig. 6 illustrates the increasing share of "macro"-

[17] Some scholars even claim that the degree of lead poisoning, and the resulting population declines, was significant enough to have contributed to the fall of the Roman Empire (for example, see Nriagu 1983; Gilfillan 1965). However, that theory has been vigorously debunked for a number of reasons, not the least of which is that chronic lead poisoning in Rome was not described before the seventh century CE, well after the fall of the Roman Empire in the fifth century CE (Phillips 1984; Cilliers and Retief 2019). Nonetheless, fertility declines in ancient Rome and the contribution of lead exposure to that decline is generally well-accepted in the literature.

plastics found in oceans over time by the Continuous Plankton Recorder -- a torpedo shaped metal object towed behind various watercraft (e.g., ferries, container ships) designed to collect whatever becomes entangled. Objects are logged when the device is hauled back to the ship to which it's attached. The share of plastic found in these entanglements took a notable jump up starting in the early 2000s, as Gen X and Millennials were reaching prime reproductive years. The incidence of macroplastics found in the world's oceans serves as a proxy for alarming concentrations of microplastics found, for example, in both tap and bottled drinking water (e.g., see Chandra and Walsh 2024; Yang et al. 2024; Gambino et al. 2022). But, this is only the tip of the iceberg.

Fig. 6 Distribution of the frequency of macroplastic entanglements per tow (%)

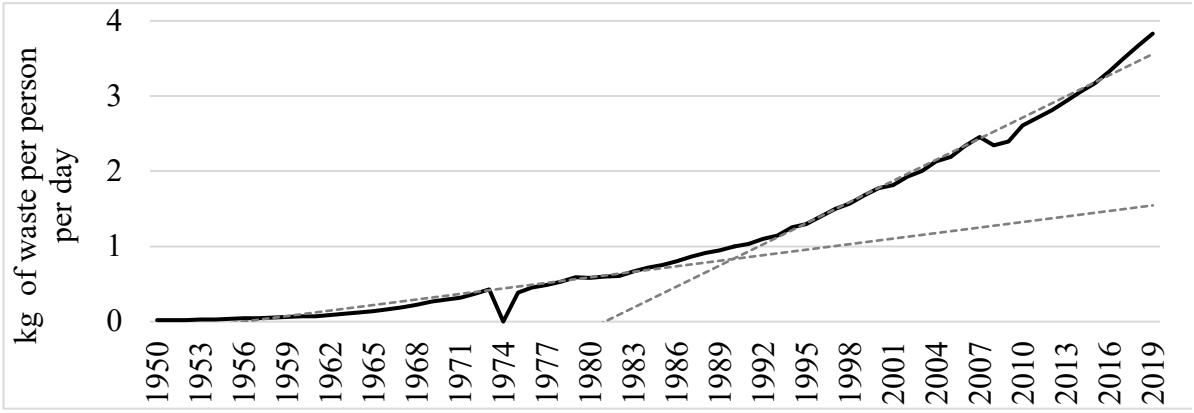


Source and Notes: Figure reflects data collected by the Continuous Plankton Recorder (CPR), operated by the Marine Biological Association (see https://www.cprsurvey.org/). See Ostle et al. for a more complete description.

Fig. 7 illustrates the growth in the U.S. of daily plastic waste generated between 1950 and 2019. Ritchie (2023) estimates that out of the 350 million tons of plastic waste produced each year, about one-quarter (19 million tons) is mis-managed (i.e., not secured in landfills,

recycled, or incinerated). Of the mismanaged waste 1.7 million tons (0.5%) ends up in the ocean, 4.3 million tons (1.7%) end up in rivers and on coastlines, and 13 million tons (3.7%) ends up contaminating soil. All forms of mismanaged plastic waste have the potential for ending up in the human food chain (Mamun et al. 2023).

Fig. 7 Daily per-person plastic waste generated (kg) in the U.S., 1950-2019, indexed to 1990 with trend lines.



Source: Our World in Data, https://ourworldindata.org/explorers/plastic-pollution?Metric=Plastic+waste+generation&Per+capita=true&Share+of+world+total=false&Source=Jambeck+et+al.+%282015%29&country=~USA

An even more direct contributor to plastic flowing into our waterways and food chain is the amount of micro-plastics we directly consume, such as in chewing gum, or simply wash down our drains in toothpaste, detergents, and soaps/shampoos (Vrachovska 2025). While the claims seen in alarming headlines about how much microplastic we have in our bodies is hotly debated (Zuckerman 2025; Zukerman 2024), human's (and other animals') exposure to microplastics is clear and the evidence of their contribution to negative health outcomes is widely accepted.

VII. Policy Discussion

While the analysis in this paper falls short of identifying specific, singular determinants of declining birth rates in the U.S., it does suggest that policies focused on two broad areas might be useful: (1) policies addressing issues contributing to the decline in wanting children and (2) policies addressing issues contributing to the increased medical difficulties of bearing children. No one policy will magically reverse declining birth rates,

and the discussion here does not provide an exhaustive list of policy options. Most importantly, however, the discussion includes policies targeting rising medical difficulties having children, which has previously not received much attention in the literature.

A. Social Support Policies

Changing social norms and expectations is a tall order, however Kleven et al. (2026) demonstrate it's not impossible. They investigate an increase in earmarked leave for fathers in Denmark from two to eleven weeks. Not only did the policy nearly double the fathers' share of leave, it also significantly moved gender-role beliefs in a more progressive direction.

Leave policies in the U.S. are not nearly as generous in many European countries. Job protection is the only policy implemented at the national level in the U.S. The Family and Medical Leave Act (FMLA) guarantees most workers in the U.S., whose employers have at least 50 workers, unpaid, job-protected leave to care for family members (among other things). Flores et al. (2025) found that a policy of job protection alone exacerbated the motherhood penalty new mothers face in the labor market, as they partially shift their focus to home activities, did not affect father's work hours, and actually reduced the number of subsequent births. Following a first birth, parents appear to be trading quality for quantity as job protection policies do not address resource constraints introduced by the birth of a child. Confirming this impact of leave policies, generally, on lower subsequent births, Gayle et al. (2025) demonstrate the delicate balancing act between increasing the number of children women have, on the one hand, and not negatively impacting women's labor market outcomes on the other.[18]

As of February 2025, 13 states have comprehensive family leave policies (BPC 2025) with various combination of job protection and paid family leave. In 2004, California was the

[18] Also see Del Rey et al. (2021) who show that there is an upper limit to the positive impact a generous leave policy can have on female labor force participation.

first state to implement a paid family leave policy. Golightly and Meyerhofer (2022) investigate the impact of that policy on birthrate outcomes and find that having access to paid family leave increases the number births per 1,000 women aged 20-39 by 2.8 percent. This effect is of similar magnitude estimated for family leave policies in Europe (see Lalive and Zweimüller 2009; Raute 2019; Shim 2014).

Others report increases in total fertility following implementation of paid maternity leave. Bault (2023) reports an increase in the Czech Republic's fertility rate from 1.13 in 1999 to 1.8 in 2021 after implementing a 3-year paid leave policy, and in addition to other questionable pro-natal policies enacted by the Romanian government, fertility rates in that country increased from 1.47 in 2011 to 1.8 in 2021 after implementing their 2-year paid leave policy. Slovenia implemented a unique policy that provides for part of a (adult) child's pension contribution to transfer directly to their parent's pension account (Bault 2023); this is argued to increase the incentive to have more offspring, provide children a good education (in order to ensure higher earnings, thus pension contributions), and disincentivize emigration.

B. Policies addressing the Cost to Having Children

Costs to having children include not only direct financial costs, but also the emotional toll and maternal mortality risks. However, most policies considered in the U.S. and implemented around the world focus on the direct financial cost.[19] U.S. lawmakers' efforts to offset the direct cost of having and raising children through the "American Family Act" (AFA) was first introduced in Congress in 2017 and every year since, although it has never passed. The current form of the AFA would significantly expand the current Child Tax Credit as well as provide a one-time "baby bonus" to parents of newborns (Trimmer 2025). As before, the current AFA proposal has an income phase-out provision.

[19] Offering financial incentives to combat declines in birthrates has a long history. In 18 B.C. Augustus offered monetary rewards to men who had multiple children, and penalties for the unmarried and childless (Devine 1985).

With the passage of The Working Families Tax Cuts Act in 2025, the U.S. government will deposit $1,000 into new individual retirement accounts (IRAs) for every child born between January 1, 2025, and December 31, 2028; the deposit is triggered only by a parent opening an account and requesting the initial deposit. There is a $5,000 cap on annual contributions to the account, $2,500 may come from a parent's employer (pre-tax). Withdrawals from the account are only allowed after the child turns 18 (for further details, see Waggoner 2025; Erb 2026). While much smaller in scale, this program is reminiscent of "baby bond" programs promoted by others (see Hamilton and Darity 2010).

Using data for 21 OECD countries between 2001-2015, Xhang et al. (2024) offer some idea about how effective this sort of financial assistance might be for increasing the birth rate. They find that, among the policies considered in their longitudinal analysis (cash transfers, provision of child services, and tax incentives), cash transfers had the largest positive impact on fertility rates for most of the countries, the impact is significant, and the impact is largest among countries whose fertility rates are not too low (not lower than 1.5 for 13 years or more). Overall, a one percent increase in public expenditures on family support policies increases total fertility by 0.069 (e.g., taking the average fertility rate from 1.5 to 1.569).[20] However, these policies are not cheap. France and Luxembourg have the highest total public expenditure at 3.59% and 3.57%, respectively, of GDP (Zhang et al. 2023). And, while above the European average, these countries' total fertility rates are also still on a decline.

In an about-face on their one-child policy, China has implemented new financial incentives to boost their fertility rate (Chia and Chen 2025). In addition to exempting expenditures on child- and elder-care from the country's value-added tax (VAT), they have

[20] Recall, total fertility is the total number of children a woman can be expected to have in her lifetime. This evidence about the impact of cash benefits being the most effective policy is confirmed by a more recent analysis using data through 2022 (see Rahman et al. 2025).

re-instated the VAT for the sale of condoms and other forms of contraception, which were exempt under the one-child policy, making contraception in China more expensive. Other countries provide pro-natal incentives by subsidizing the cost of childcare. Whereas the average cost of childcare in the U.S. is 32 percent of the average salary, that share is only one percent in Estonia and Germany (Shane 2023). The state of New York announced a plan to fund free childcare for two-year olds in New York City with plans to expand the program statewide in coming years (Shapiro and Ashford 2026). This is part of New York City Mayor's plan to create the first universal childcare program in the U.S.

C. Environmental Policies

The policies discussed in this section address the role that environmental policies might play in combatting the rise in impaired fecundity. It has already been established that environmental contaminants, including microplastics, can have a negative effect on the ability to conceive and bear children (Canipari et al. 2020; D'Angelo and Meccariello 2021; Hu et al. 2024; Zurub et al. 2024), so reducing the amount of plastic in the environment might be a place to start in reducing environmental contributions to declining birth rates. Besides just outright banning the use of plastics in production of consumer goods or prohibiting the inclusion of microplastics in cosmetics and cleaning products, there are a number of policy options that target economic incentives for use and/or proper disposal of plastics.

As of January 2026, 10 states have what are often referred to as a "bottle bill".[21] Bottle bills generally require payment of a five or ten cent deposit per container purchased, which is redeemable if returned to a grocery store or designated redemption center. Bottle bills provide an incentive for not only consumers to properly discard waste, but also motivates an army of unhoused individuals and youth to collect waste that has been improperly discarded. Abate (2016) reports that people living on the streets redeem, on

[21] See https://www.bottlebill.org/index.php/current-and-proposed-laws/usa/additional-links

average between $15 and $35 per day at one recycling center in San Francisco. At the time of her report, one garbage can filled with plastic bottles gets about $8.

Cecot and Viscusi (2022) find that household recycling rates are higher in states that have deposit laws for glass, metal, and plastic containers; mandated recycling laws result in higher rates of recycling relative to states with mere suggestions; and that overall recycling rates increased over the period of study (2005-2014), suggesting that simply being aware of benefits of behavior change can produce results. Additionally, there seems to be no question that well-designed regulation of plastic shopping bags reduces waste and litter (Sokolow et al. 2024). However, there is debate about what form that regulation should take (e.g., bans, fees, etc.) and what the unintended consequences of those regulations might be (Nielsen et al. 2019; de Leeuw 2020). For example, Li et al. (2022) report that it takes about four times as much energy to create a paper bag than it does to create a plastic one.

D. Reproductive Policies

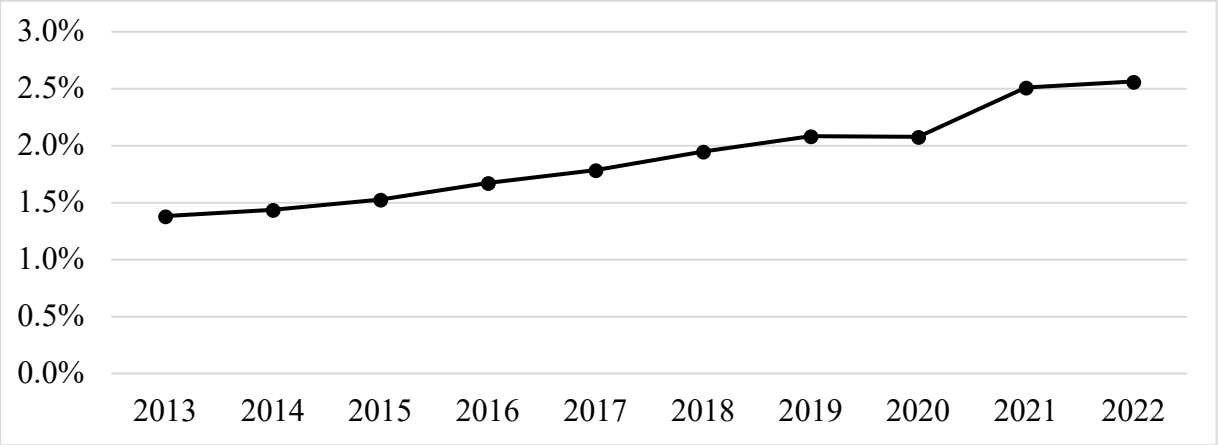
In light of rising difficulties conceiving and bearing children, this section discusses a variety of reproductive and fertility policies that could be adopted to fulfill the desire to have children for families who are having medical or practical difficulties.

Assisted Reproductive Technologies (ART). As women age, both the quantity and quality (viability) of the eggs they are born with decline (Park et al. 2021). As women continue to enjoy fulfillment in extra-household activities and as their control over reproductive timing has delayed family formation decisions, biological difficulties will naturally arise in efforts to have children in traditional ways. Additionally, non-heterosexual couples have obvious practical obstacles to having children.

The first successful birth of a baby conceived through in-vitro Fertilization (IVF) occurred in 1978. Since then, the number of live births through ART, including IVF has steadily grown, as shown in Fig. 8 (CDC 2024). This growth is in spite of the cost (ranging

from $12,000 to $25,000 per procedure) and legal complications of undergoing IVF and related services. Many private health insurance plans and public insurance, such as Medicare and Medicaid classify these procedures as not medically necessary, limiting coverage.

Fig. 8 Number of live-birth deliveries resulting from ART per total number of live births.



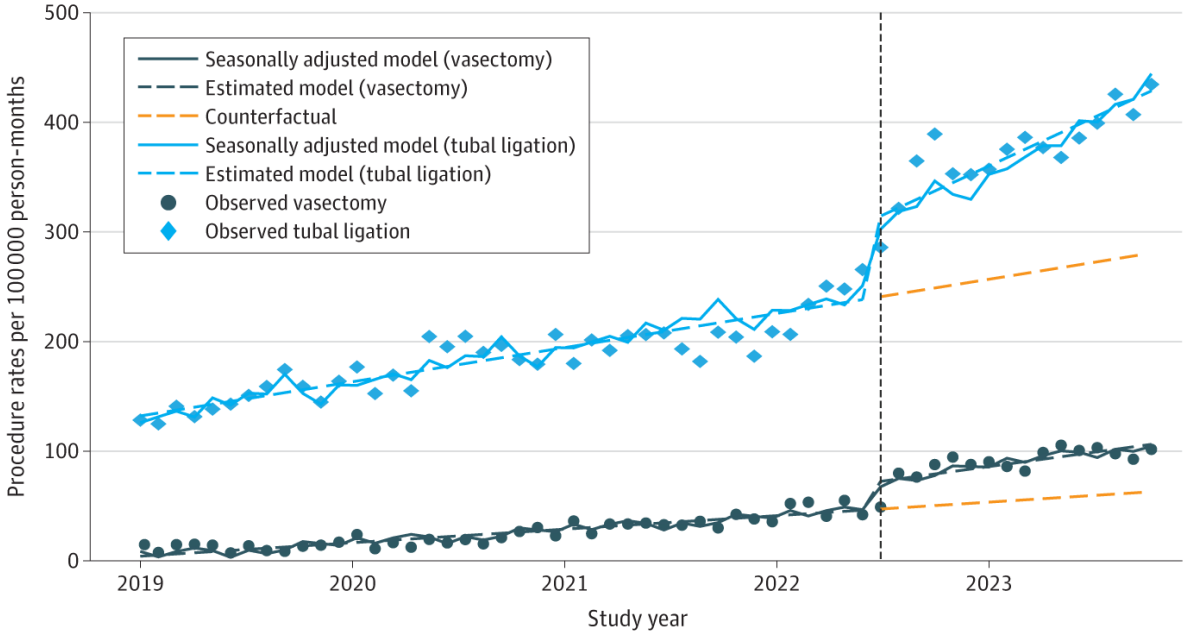
Source: Centers for Disease Control and Prevention (CDC), https://www.cdc.gov/art/php/national-summary/?CDC_AAref_Val=https%3A%2F%2Fwww.cdc.gov%2Fart%2Freports%2F2021%2Fsummary.html&cove-tab=0 and https://www.cdc.gov/nchs/data/nvsr/nvsr74/nvsr74-11.pdf

In October 2025, the U.S. President announced a two-pronged initiative to address cost issues for those seeking treatments (ASRM 2025). This initiative includes negotiated lower prices for some of the medications required for treatment through a website named for the president. Operational as of February 2026, based on the authors' calculations, this web site offers an average savings of about $566 for three common drugs used in IVF treatments. Additionally, employers are now allowed to offer fertility treatments as an "excepted" benefit, like vision or dental benefits, giving employers maximum flexibility for their offering. In spite of this initiative, the U.S. Congress, two months after its announcement, stripped fertility coverage for Military families from the defense spending bill that was signed into law in December 2025 (Novak 2025). The cost and restrictions in the U.S. have spawned "fertility tourism," where many families find it less expensive and less restrictive to travel outside the U.S. to seek fertility care (Novak 2025).

Reproductive Rights. In June 2022, the U.S. Supreme Court overturned a woman's constitutional right to bodily autonomy through access to abortion services (*Dobbs v. Jackson*

Women's Health Organization). While no arguments about reversing birth rate declines were made supporting this decision, it may not be a surprise that researchers have found it did have the effect of increasing the number of births (Dench et al. 2024). They estimate that after the ruling, up to a quarter of people seeking an abortion were turned away, resulting in roughly 32,000 additional annual births. The impact was concentrated among younger women and women of color.

Fig. 9 Monthly time series of tubal ligation and vasectomy procedure rates among adults aged 18 to 30 years.



Source and Notes: Ellison et al. (2024),. https://jamanetwork.com/journals/jama-health-forum/fullarticle/2817438, an open access article distributed under the terms of the CC-BY license, which permits unrestricted use, distribution, and reproduction in any medium. The dotted vertical line indicates the Dobbs v Jackson Women's Health Organization decision.

However, there was another, perhaps less intuitive, consequence of the *Dobbs* ruling. Ellison et al. (2024) found that both tubal ligations and vasectomies saw an immediate level increase of roughly 58 and 27 per 100,000 person months, respectively (see Fig. 9). Additionally, the monthly *rate* of tubal ligations increased by 87 percent. In other words, both the number of tubal ligation and vasectomy procedures significantly increased after the Dodd decision, and the monthly rate for the tubal ligation procedure has continued to rise.[22]

[22] Also see Pogge et al. (2026), J. Ellison (2025), Berk et al. (2025), and Gallen and Lu (2025)

Consistent with these results, Pennington and Venator (2024, 37) find that women opt for, "more effective methods when they expect abortion access to fall...and longer-lasting methods when they expect out-of-pocket costs to rise."

VIII. Conclusion

This paper evaluates the decline in U.S. birth rates by jointly considering women's fertility preferences and their medical ability to conceive and bear children. The findings show that although later cohorts are less likely to have had a child at any age, the underlying mechanisms differ depending on the cohort. For Gen X and Millennials, the probability of wanting a child remains comparable to or higher than that of Boomers, indicating that declining fertility among these cohorts is not primarily driven by changes in preferences. Rather, the steady rise in impaired fecundity appears to be the more consequential factor shaping lower birth rates for these generations of women. For Gen Z, however, both diminished desire for children and elevated rates of impaired fecundity both contribute to their lower birth rates, suggesting that social, economic, and biological constraints are together influencing the youngest generation.

By incorporating medical limitations into an analysis traditionally focused on preferences and economic conditions, this study broadens existing explanations for U.S. fertility decline. The results indicate that policies aimed solely at influencing preferences or reducing financial barriers are unlikely to fully address falling birth rates. Instead, effective policy responses will need to target multiple dimensions -- supporting family formation decisions while also addressing the rising prevalence of impaired fecundity through expanded access to reproductive services and attention to environmental factors.

As Geruso and Spears (2026) point out, declines in total fertility can arise from women having fewer children and/or fewer women having children. They find, in their study of 19 countries across 20 years that 37 percent of the average decline in total fertility comes

from fewer women having children. Different policies will have different incentives. For example, re-enforcing women's reproductive rights appears to be important if the goal is to increase the number of women having children, whereas more generous financial incentives could be targeted at both reducing childlessness and increasing number of children per woman. Improving environmental conditions and access to assisted reproductive technologies seems best targeted at combating childlessness.

Aside from addressing slowing population growth through fertility policies, however, policy makers could also re-visit immigration policy. VanOrman (2026) reports that the U.S. population grew by 0.5 percent in 2025, which is the slowest growth since 2021. The 54 percent decline in net immigration in 2025 accounted for over 100 percent of the decline in growth. Additionally, the Congressional Budget Office estimates that because of these dramatic declines in net immigration, the U.S. population will basically stop growing by 2056 (CBO 2026). This can be expected to have a substantial impact on the overall economic outlook of the U.S. going forward (Geruso and Spears 2026; Weil 2026).

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Appendix A: Supplemental Data Details and Parameter Estimates

Fig. A1. Flowchart of definitions for infertility and impaired fecundity

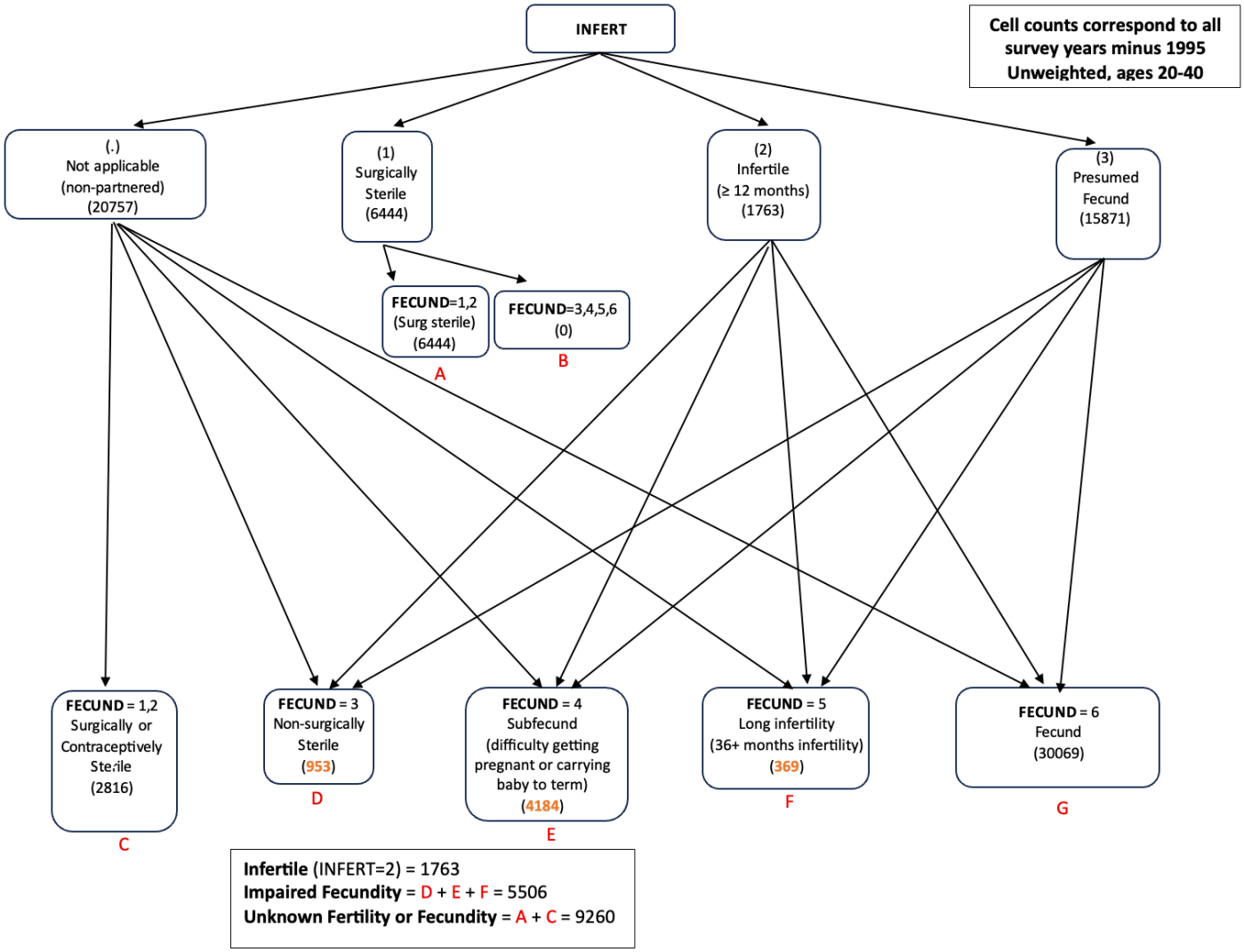


Table A1. Correlation coefficients between regressors and dependent variables

	Parity > 0	Want =1	Impaired Fecundity = 1
prevbirth = 1			
want = 1	-0.2793		
impfecund = 1	-0.061	0.0592	
age	0.2449	-0.2246	0.0359
withpartner = 1	0.2392	-0.0299	0.0284
pub_asst = 1	0.2884	-0.0731	0.0114
msa = 1	-0.1047	0.0631	0.0024
above_median = 1	-0.1074	0.0409	-0.0241
white = 1	-0.0905	-0.0079	0.0209
black = 1	0.0625	-0.0073	-0.0158
other = 1	-0.0568	0.0344	-0.0143

	Parity > 0	Want =1	Impaired Fecundity = 1
hispan = 1	0.0994	-0.0069	-0.0027
emp = 1	-0.2424	0.0902	-0.0093
lths = 1	0.1942	-0.085	0.0121
hs = 1	0.1751	-0.092	0.0114
somecoll = 1	0.0247	-0.0079	0.0248
collplus = 1	-0.3159	0.1499	-0.0423

Notes: * add info about data source *

Table A2. Maximum likelihood parameter estimates, equation (1)

```
Multivariate probit (MSL, # draws = 5)                Number of obs =   39,431
                                                      Wald chi2(74) = 10027.05
Log pseudolikelihood = -4.634e+08                     Prob > chi2   =   0.0000

------------------------------------------------------------------------------
             |               Robust
             | Coefficient  std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
prevbirth    |
   impfecund |  -.5214867   .0613413    -8.50   0.000    -.6417134     -.40126
         age |   .1085829   .0027987    38.80   0.000     .1030975    .1140683
 withpartner |   .9554967    .023362    40.90   0.000     .9097081    1.001285
    pub_asst |   .9442219   .0315203    29.96   0.000     .8824433    1.006001
         msa |   -.186417   .0312208    -5.97   0.000    -.2476086   -.1252255
above_median |  -.0879683   .0239743    -3.67   0.000    -.1349571   -.0409795
       black |   .3419077   .0313375    10.91   0.000     .2804873     .403328
       other |  -.0425929   .0470736    -0.90   0.366    -.1348554    .0496696
      hispan |   .2574488    .031225     8.24   0.000     .1962488    .3186487
         emp |   -.416738   .0254088   -16.40   0.000    -.4665383   -.3669376
          hs |  -.3192856   .0437263    -7.30   0.000    -.4049876   -.2335837
    somecoll |  -.6474529   .0429429   -15.08   0.000    -.7316195   -.5632863
    collplus |  -1.027927   .0466583   -22.03   0.000    -1.119375   -.9364779
         sy2 |  -.0223594    .032833    -0.68   0.496    -.0867108    .0419921
         sy4 |  -.0504202   .0393746    -1.28   0.200    -.1275931    .0267526
         sy5 |  -.1542478   .0479677    -3.22   0.001    -.2482627   -.0602329
         sy6 |  -.1938754   .0631909    -3.07   0.002    -.3177273   -.0700234
         sy7 |  -.2262273   .0659042    -3.43   0.001    -.3553971   -.0970574
         sy8 |    -.17459    .071789    -2.43   0.015     -.315294   -.0338861
         sy9 |  -.2809523   .0699485    -4.02   0.000    -.4180489   -.1438557
        sy10 |  -.3948082   .0785632    -5.03   0.000    -.5487893   -.2408271
        boom |   .3463299   .1111134     3.12   0.002     .1285516    .5641081
        genx |   .4187917   .1160256     3.61   0.000     .1913857    .6461978
        mill |   .4372274   .1324358     3.30   0.001     .1776581    .6967968
        genz |   .2099936    .16079     1.31   0.192    -.1051491    .5251363
       _cons |  -2.988671   .1534155   -19.48   0.000     -3.28936   -2.687982
-------------+----------------------------------------------------------------
want         |
   prevbirth |  -.6649094   .0569436   -11.68   0.000    -.7765169    -.553302
         age |  -.0817811   .0030072   -27.20   0.000     -.087675   -.0758871
 withpartner |   .2485972   .0270121     9.20   0.000     .1956544    .3015399
    pub_asst |   .0572315    .031683     1.81   0.071    -.0048661    .1193291
         msa |   .0704797   .0287691     2.45   0.014     .0140933     .126866
above_median |  -.0176818   .0240581    -0.73   0.462    -.0648348    .0294712
       black |   .0940721   .0299945     3.14   0.002     .0352839    .1528603
       other |   .0690438   .0430595     1.60   0.109    -.0153514    .1534389
      hispan |   .1312448   .0299306     4.38   0.000      .072582    .1899076
         emp |   .0773334   .0249469     3.10   0.002     .0284383    .1262285
          hs |   .0966298   .0357369     2.70   0.007     .0265868    .1666728
    somecoll |   .2249577   .0376719     5.97   0.000     .1511222    .2987932
    collplus |   .3699904    .042263     8.75   0.000     .2871565    .4528242
         sy2 |  -.0330366   .0316863    -1.04   0.297    -.0951405    .0290674
         sy4 |  -.0460739   .0387073    -1.19   0.234    -.1219388     .029791
         sy5 |  -.0189484   .0461522    -0.41   0.681     -.109405    .0715081
         sy6 |  -.0174397   .0588526    -0.30   0.767    -.1327888    .0979093
         sy7 |  -.1495716   .0606415    -2.47   0.014    -.2684268   -.0307163
         sy8 |  -.0546842    .063939    -0.86   0.392    -.1800024    .0706339
         sy9 |  -.1452966   .0681419    -2.13   0.033    -.2788524   -.0117409
```

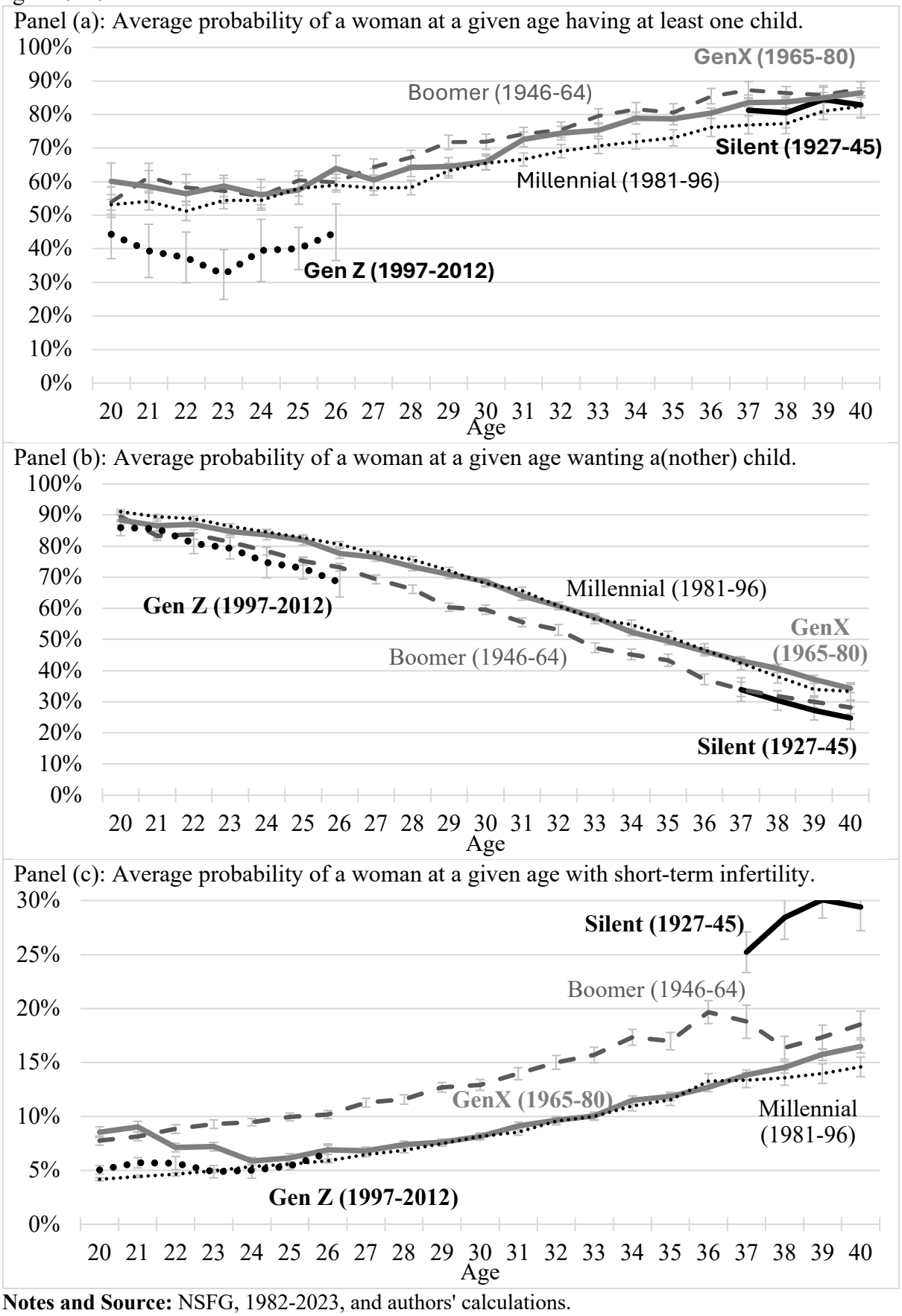
```
        sy10 |  -.2967628   .0745624    -3.98   0.000    -.4429024   -.1506232
        boom |   .1285765   .1011526     1.27   0.204    -.0696789    .3268318
        genx |   .2533815   .1070099     2.37   0.018     .0436459    .4631171
        mill |   .2763869   .1222369     2.26   0.024     .0368071    .5159668
        genz |  -.2737097   .1507522    -1.82   0.069    -.5691785    .0217591
       _cons |   2.592669   .1433948    18.08   0.000      2.31162    2.873718
-------------+----------------------------------------------------------------
impfecund    |
         age |   .0426825    .002958    14.43   0.000      .036885     .04848
 withpartner |    .253131   .0261108     9.69   0.000     .2019547    .3043073
    pub_asst |   .0636121   .0310849     2.05   0.041     .0026868    .1245373
         msa |   .0199536   .0309695     0.64   0.519    -.0407456    .0806528
above_median |  -.0833816   .0279975    -2.98   0.003    -.1382556   -.0285075
       black |  -.1025024   .0328791    -3.12   0.002    -.1669442   -.0380606
       other |  -.0463124    .048904    -0.95   0.344    -.1421625    .0495378
      hispan |  -.1711017   .0344318    -4.97   0.000    -.2385869   -.1036166
         emp |  -.0051344   .0258178    -0.20   0.842    -.0557363    .0454675
          hs |  -.0952419   .0402617    -2.37   0.018    -.1741533   -.0163304
    somecoll |  -.1561785   .0413743    -3.77   0.000    -.2372707   -.0750864
    collplus |  -.4042319    .046265    -8.74   0.000    -.4949096   -.3135542
         sy2 |  -.0764036   .0376781    -2.03   0.043    -.1502513   -.0025558
         sy4 |   .0324598   .0448962     0.72   0.470    -.0555351    .1204547
         sy5 |   .0621753   .0522317     1.19   0.234    -.0401969    .1645475
         sy6 |   .0643124   .0651119     0.99   0.323    -.0633046    .1919294
         sy7 |   .0348807   .0663985     0.53   0.599     -.095258    .1650195
         sy8 |   .1184132   .0742122     1.60   0.111    -.0270401    .2638664
         sy9 |   .1170538    .075185     1.56   0.119    -.0303061    .2644137
        sy10 |   .2154606   .0821449     2.62   0.009     .0544594    .3764617
        boom |  -.1080336   .1018443    -1.06   0.289    -.3076449    .0915776
        genx |  -.1117655   .1098038    -1.02   0.309     -.326977     .103446
        mill |  -.1020566   .1278742    -0.80   0.425    -.3526853    .1485722
        genz |   .0585201   .1611665     0.36   0.717    -.2573605    .3744006
       _cons |  -2.134668   .1551125   -13.76   0.000    -2.438683   -1.830653
-------------+----------------------------------------------------------------
    /atrho21 |   .0302866   .0304592     0.99   0.320    -.0294125    .0899856
-------------+----------------------------------------------------------------
    /atrho31 |   .0682404   .0290205     2.35   0.019     .0113614    .1251195
-------------+----------------------------------------------------------------
    /atrho32 |   .0795655   .0158518     5.02   0.000     .0484965    .1106346
-------------+----------------------------------------------------------------
       rho21 |   .0302773   .0304313     0.99   0.320     -.029404    .0897435
-------------+----------------------------------------------------------------
       rho31 |   .0681347   .0288857     2.36   0.018     .0113609    .1244706
-------------+----------------------------------------------------------------
       rho32 |   .0793981   .0157519     5.04   0.000     .0484585    .1101854
------------------------------------------------------------------------------
Likelihood ratio test of  rho21 = rho31 = rho32 = 0:
            chi2(3) =   645518   Prob > chi2 = 0.0000
```

Appendix B: Trivariate Probit Results for Short-term Infertility

The trivariate probit model described in equation (1) in the paper was re-estimated with "*ImpFecund*" being replaced with "*Infertility*." Recall that a designation of "infertility" more accurately describes a short-term difficulty conceiving. Once a woman has had difficulty conceive for 36 weeks or more, she is re-classified as having impaired fecundity. Additionally, the sample here, as well as the one used for the impaired fecundity analysis, excludes women who are either surgically or contraceptively sterile, since we don't know what the ability to conceive would be in the absence of that intervention. Fig. A1 presents the predicted probabilities analogous to Fig. 6 in the paper.

The pattern of probabilities by age across cohorts for having a baby (Panel a) and for wanting a baby (Panel b) are quite similar to the ones in the model that included impaired fecundity rather than infertility (Fig. 6 in the paper). However, rather than increasing across cohorts, like impaired fecundity, the probability of infertility decreases across cohorts, except no so much for Gen Z vs. Millennial women. This is what we would expect from the sample means presented in Fig. 2 in the paper. Of course, interpretation of these probabilities is difficult because if infertility continues for at least 36 months, then a woman is moved, categorically, from being infertile to having impaired fecundity.

Fig. B1 Predicted probabilities from trivariate probit estimation by cohort across age, women ages 20-40.



Notes and Source: NSFG, 1982-2023, and authors' calculations.