

## The Decline in Fertility: The Role of Marriage and Education

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**Summary:** We relate the decline in the birth rate to two demographic factors closely associated with women's fertility patterns: marriage and educational attainment. Married women are at least three percentage points more likely to have a child than unmarried women, and simultaneously marriage rates among women 25 to 29 declined 15.9 percent since 2006. Women who complete 4 years of college are less likely to have a child, while completion rates of 4 years of college rose 10 percent for women over the past decade.

### Introduction

Over the past decade, fertility [declined](#) rapidly in the United States – from a Total Fertility Rate (TFR) of 2.2 births per woman in 2008 to just 1.7 in 2019. Initial [reports suggest](#) the effects of the Covid-19 pandemic accelerated this trend. Though some of the pandemic-related fertility decline may be due to families waiting to have children, rather than changing their desired family size. If this is the case, fertility should rise near the end of the pandemic and in the years directly following the pandemic. This post highlights two demographic trends in women related to the past decade's decline in fertility: marriage and education.

### Marriage and Fertility

Timing of marriage, and particularly whether a woman marries younger or older, has historically been a [strong indicator](#) of women's fertility patterns. Figure 1 depicts age-specific marriage rates among women of childbearing age in 5-year age cohorts from 2006 to 2019, calculated from the American Community Survey (ACS). Over the time period observed, marriage rates among women aged 25-29 dropped 15.9 percentage points.

### Figure 1: Age-Specific Marriage Rates Over Time

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*Please view online for additional years.*

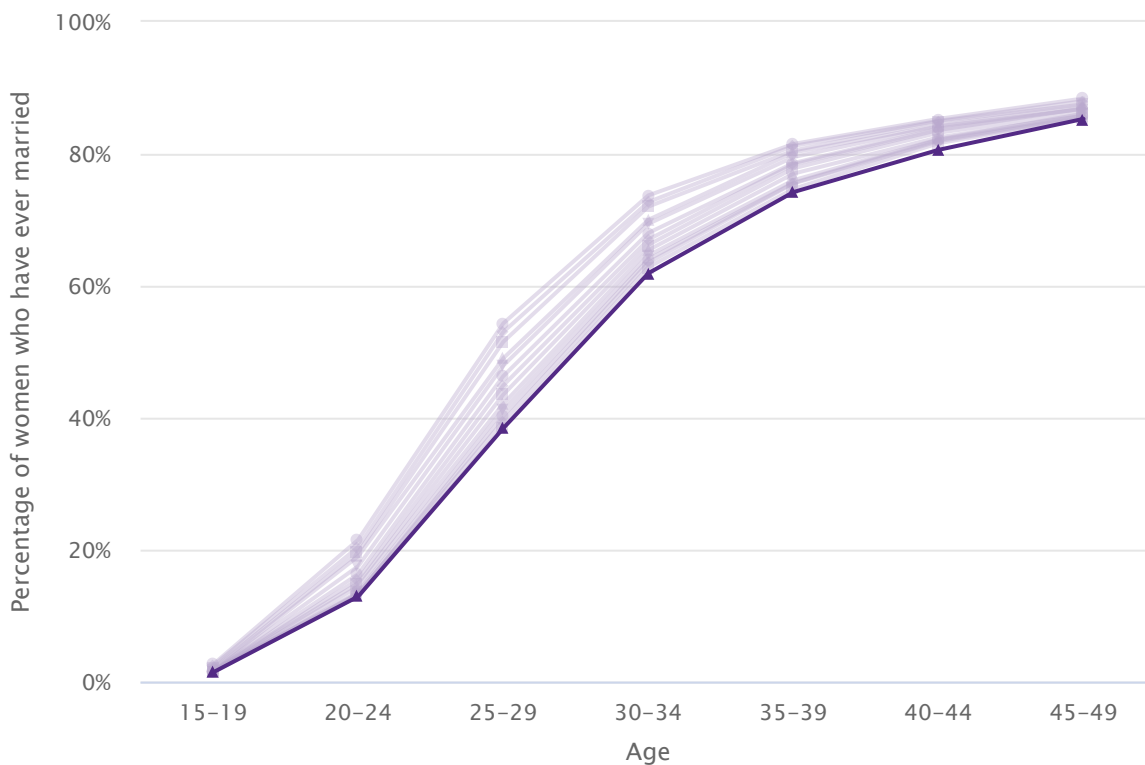
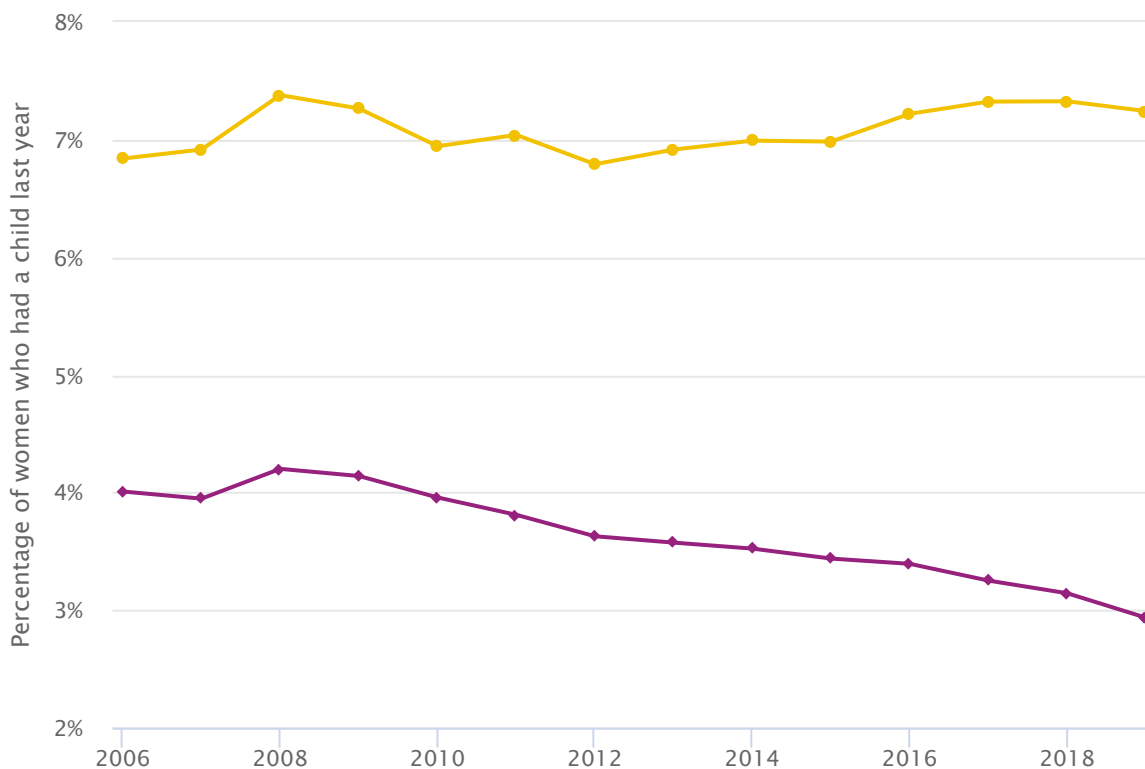


Figure 2 shows the percentage of women at childrearing age who had a child in the previous year, separately by marital status.<sup>1</sup> Over the whole period observed, married women are at least three percentage points more likely to have given birth in the past year than unmarried women. Further, over the past decade unmarried women of childbearing age have grown increasingly unlikely to give birth: the likelihood drops a full percentage point over the time frame observed.

Figure 2: Percentage of women aged 15-49 who had a child last year, by marital status

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## Education and Fertility

In women, educational attainment (particularly college attendance), is also [closely related to](#) declines in fertility.

Figure 3 displays college education rates among women ages 25 and older. The figure shows a linear rise in completion of four years of college: in 2006, only 30.5 percent of women ages 25 to 49 had completed four years of college, compared to 40.7 percent in 2019.

### Figure 3: College Education Rates Among Women Ages 25+

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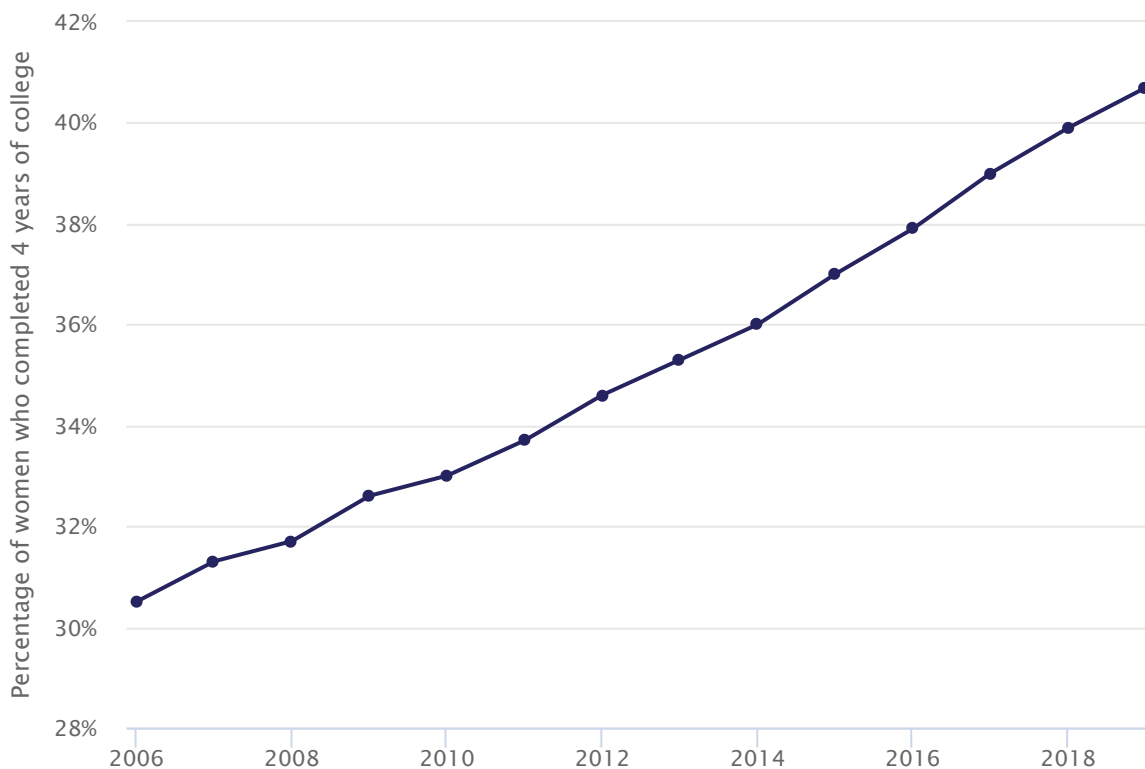
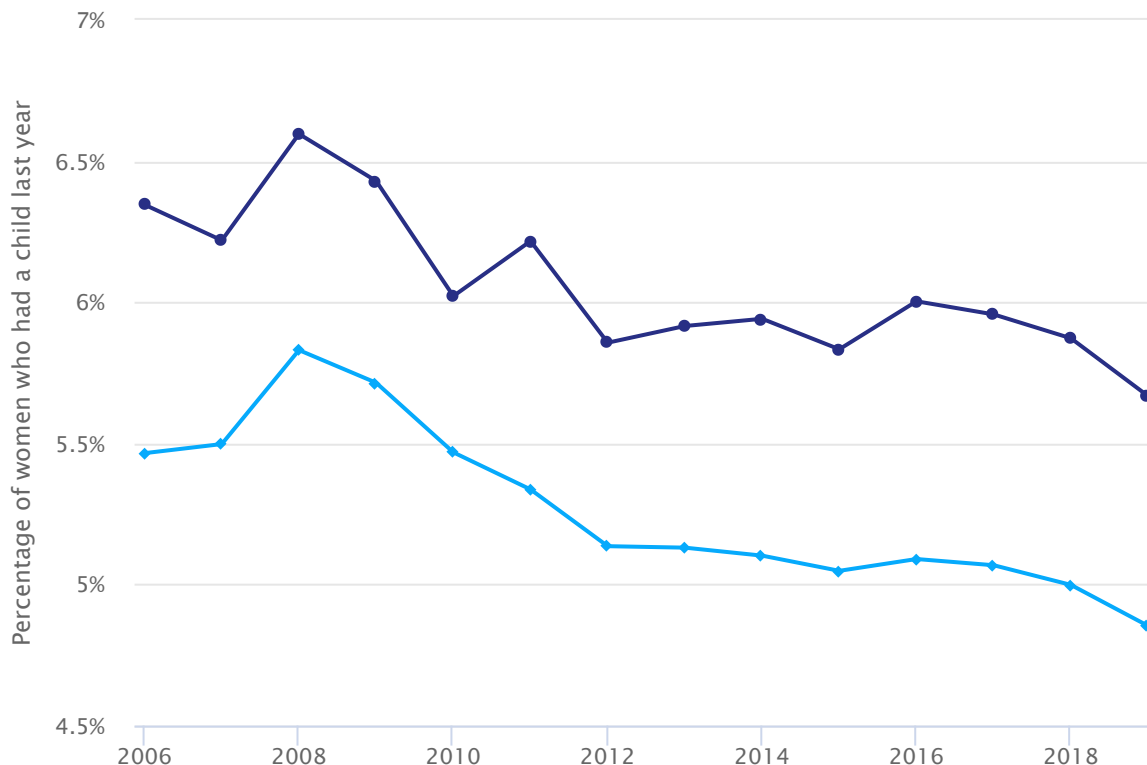


Figure 4 plots the percentage of women of childbearing age who had a child last year, separately by whether she completed 4 years of college. The birth rates for each of these groups of women declined a full percentage point over the period observed. In 2019, women aged 15-49 with at least four years of college were 0.8 percentage points less likely to have had a child in the past year.

Figure 4: Percentage of women aged 15-49 who had a child last year, by completion of 4 years of college

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## Discussion

Examining [age-specific fertility rates](#), marriage rates, and trends in women’s educational attainment, it is clear many women are delaying fertility and ultimately having fewer children. These factors are not isolated, but also interact with one another. A young woman who graduates college is more likely to marry and have children after age 21 and enter the formal labor market. Because she is a worker with a college degree, she likely earns a higher income than women without college degrees meaning her opportunity cost of leaving the labor market to have children will be higher than it otherwise would have been if she earned a lower income. Additionally, if women are concerned that they will progress in their careers at a slower rate if they go on maternity leave, they will also be disincentivized to have children. Further, [high childcare costs](#) provide a disincentive for parenthood.

## Implications

The decline in birth rates in the US has also been observed in most developed countries around the world. With the fertility rate being below the [2.1-births-per-woman](#) replacement rate, the resulting population’s age distribution has many policy implications. One concern about declines in fertility is that per capita federal debt will increase for future generations ceteris paribus. For instance, programs like Social Security that are [pay-as-you-go systems](#), will not have enough working age people paying into the program to support the population of retirees without fundamentally changing payroll tax rates or Social Security benefit payouts. Relatedly, there are

concerns that a shrinking population would result in a smaller workforce and slower economic growth. Still, others argue that a declining birthrate could have potential [positive effects](#), such as reducing infrastructure costs, and easing ecological burdens and natural resource constraints. One should also keep in mind that increasing immigration could also offset some of the population decline (and effects) that the current trends in the birth rate would cause.

*This analysis was conducted by [Maddison Erbabian](#), [Austin Herrick](#), and [Victoria Osorio](#). Prepared for the website by [Mariko Paulson](#).*

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1. Marital status is determined by whether the respondent has ever been married, regardless of whether she is married currently. [↩](#)