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**Working Paper**

## Reproductive Technology and the Child Care Sector: How Access to Oral Contraception and Abortion Shaped Workforce Composition and Quality

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## ABSTRACT

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# Reproductive Technology and the Child Care Sector: How Access to Oral Contraception and Abortion Shaped Workforce Composition and Quality

The composition and quality of the child care workforce may be uniquely sensitive to changes in the complementarities between home production and market work. This paper examines whether the expansion of oral contraceptives and abortion access throughout the 1960's and 1970's influenced the composition, quality, and wages of the child care workforce. Leveraging state-by-birth cohort variation in access to these reproductive technologies, we find that they significantly altered the educational profile of child care workers—increasing the proportion of less-educated women in the sector while reducing the share of highly-educated workers. This shift led to a decline in average education levels and wages within the child care workforce. Furthermore, access to the pill and abortion influenced child care employment differently across settings, with center-based providers losing more high-skilled workers to alternatives with better career opportunities, and home-based and private household providers absorbing more low-skilled women, for whom child care may have remained a viable employment destination. Overall, our findings indicate that increased reproductive autonomy, while expanding women's access to higher-skilled and -paying professions, also resulted in a redistribution of skilled labor away from child care, which may have implications for service quality, child development, and parental employment.

**JEL Classification:** I21, I38, J13, J22, J24

**Keywords:** abortion, child care, pill, contraceptive, reproductive technology

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# 1 Introduction

The emergence of reproductive technologies, such as oral contraceptives and legalized abortion, catalyzed significant changes to social norms, gender dynamics, and labor markets in the United States during the mid-20th century. Oral contraceptives, commonly known as “the Pill,” were approved by the U.S. Food and Drug Administration (FDA) in 1960, and became widely available in the 1960s and 1970s through a series of state policy changes. Similarly, the legalization of abortion—which advanced through several judicial and legislative reforms and culminated with the Supreme Court’s 1973 decision in *Roe v. Wade*—marked another key milestone that provided women with unprecedented autonomy over family planning decisions. Together, these policy and legal developments drove substantial changes in family formation, educational attainment, and labor market engagement (Ananat et al., 2009; Ananat and Hungerman, 2012; Bailey, 2006; Goldin and Katz, 2002; Guldi, 2008; Levine et al., 1999; Lindo et al., 2020; Myers, 2017).

While an extensive body of work studies the broad family formation and labor market effects of increased access to the pill and abortion, relatively little work examines whether these technologies have reshaped the composition and quality of some essential labor markets, including the teaching profession. It is well-documented that the qualifications and skills of K-12 teachers have declined in recent decades (Corcoran et al., 2004), and at least one study suggests that the diffusion of reproductive technologies played a role in these shifts by decreasing the appeal of teaching as a profession (Steingrimsdottir, 2020). Similar dynamics may be at play within the child care and early education sector, whose workforce of nearly five million people is critical to child development and parental employment. Indeed, a recent paper finds some slippage in child care workers’ skills over time, and Figure 1 reveals that the sector has become relatively more attractive to less-skilled women (Herbst, 2024). Building on this evidence, our goal in this paper is to study the impact of access to reproductive technologies on the child care workforce, focusing on workforce quality and skill composition. Specifically, we leverage state-by-birth cohort variation in exposure to the pill and abortion services to evaluate effects on child care labor supply as well as workers’ educational attainment and wages.

The intuition for our work is based on a model of household production, which provides a useful framework for understanding how reproductive technologies have reshaped the complementarities between home production and market work, particularly across skill levels (Becker, 1965, 1993). In this model, individuals allocate time

between home production and the labor market to maximize utility, with opportunity costs playing a key role in these decisions. Access to reproductive technologies, such as oral contraceptives and abortion, may increase the opportunity cost of time spent on home production for higher-skilled women, by enabling them to delay childbearing, invest in human capital, and pursue higher-wage, higher-skilled careers outside the child care sector (Goldin and Katz, 2002; Bailey, 2006; Myers, 2017). At the same time, these technologies may have reduced the constraints on entering occupations like child care among lower-skilled women, given the skill complementarities it shares with home production. In addition, as the returns to education increased, higher-skilled women might have selected into occupations with greater long-term earnings potential, while lower-skilled women—faced with greater competition for jobs in high-skilled sectors—may have been drawn to child care as an accessible employment destination. These considerations illustrate how reproductive autonomy might influence occupational sorting and skill composition, reshaping the supply of labor within the child care sector.

This paper combines data on the child care workforce with information on the diffusion of the pill and abortion services to examine how these technologies influenced observed employment patterns in child care as well as the educational attainment and wages of child care workers. Our analysis focuses on working-age women in the 1930 to 1955 birth cohorts, who came of age when access to the pill and abortion was expanded throughout the 1960's and 1970's. Following the standard approach in the empirical literature, we exploit state-by-cohort variation in the minimum age at which unmarried women gained legal and confidential access to these services (Ananat and Hungerman, 2012; Bailey, 2006; Goldin and Katz, 2002; Myers, 2017). Estimates from difference-in-differences models provide three key results. First, access to reproductive technologies had important effects on the skill composition of the child care workforce, increasing the share of less-educated women employed in the industry and reducing the share of highly-educated women employed there. Second, these compositional changes in turn led to reductions in the average schooling attainment and wages of child care workers. Finally, the estimates are not uniform across child care sectors: the most pronounced skill shifts occurred in the center-based and private household sectors, while home-based child care experienced smaller changes. In addition, our results reveal similar patterns across white and black child care workers.

As alluded to above, child care is a unique sector because of its two-generation focus, supporting the development and well-being of children and the ability of parents—particularly mothers—to participate in the labor force (Tekin,

2007; Herbst, 2017, 2023). High-quality child care is associated with improved developmental outcomes for children, especially those from disadvantaged backgrounds, making the workforce that provides these services essential in addressing inequality and promoting school readiness (Herbst and Tekin, 2016, 2010; Herbst, 2013; Duncan and Magnuson, 2013). Furthermore, unlike most other professions, child care is heavily feminized and characterized by low wages and limited professional development opportunities. These features make it particularly sensitive to shifts in women’s reproductive autonomy, as decisions about family planning and childbearing can directly influence the supply of labor to this sector. Understanding how reproductive policies influence the composition and quality of the child care workforce provides insights into both individual labor market outcomes and broader societal implications for child development and economic productivity.

We also note that the rapidly changing legal landscape has heightened the urgency of addressing this question. The Supreme Court’s 2022 decision in *Dobbs v. Jackson Women’s Health Organization*, which overturned *Roe v. Wade*, marked a dramatic shift in the landscape of reproductive rights. This ruling gave individual states the authority to regulate abortion access, resulting in a fragmented patchwork of policies across the country. Dench et al. (2024) provide evidence that abortion bans implemented in the post-Dobbs era have already led to increased birth rates, with particularly pronounced effects among younger and less-educated women. Similarly, Myers (2024) highlights how greater travel distances to abortion facilities due to these bans have caused significant declines in abortion rates and corresponding increases in births. These findings underscore the important implications for labor markets and household dynamics of changes to reproductive technology access, and emphasize the need for research on the ripple effects of such changes, particularly in sectors like child care that depend on women’s labor and whose workforce quality has implications for child development.

This study contributes to three key areas of research. First, it builds on the extensive literature documenting the transformative effects of reproductive technologies on women’s labor market and educational outcomes. Goldin and Katz (2002), Bailey (2006), and Myers (2024) show that access to oral contraceptives and abortion have encouraged women to delay family formation, increase human capital investments, and enter professional occupations. Second, this paper addresses a critical gap in the literature by linking these policy changes to the child care workforce, exploring how shifts in fertility behavior and family planning influence workforce composition and participation in this essential sector. Finally, it adds to the growing body of evidence on the declining quality of the child

care workforce, as documented in [Herbst \(2024\)](#), by examining whether broader societal changes catalyzed by the advancement of reproductive technologies have contributed to this trend.

The remainder of the paper proceeds as follows. Section 2 describes the data and empirical methods, while Section 3 presents the main results and robustness checks. In Section 4, we provide a brief summary of our findings along with a discussion of policy implications.

## 2 Data and Methodology

Our data come from the 1980, 1990, and 2000 U.S. Decennial Censuses and the 2005 to 2019 American Community Survey (ACS) ([Ruggles et al., 2024](#)). The analytic sample is restricted to women ages 25 to 64 who were born during the years 1930 to 1955. We drop those in the armed services, those residing in group quarters, and those in school. We also drop individuals with positive work hours but no earnings and vice versa.

Using the IPUMS industry and occupation codes, child care workers are defined broadly to include all women employed in one of three settings: private households as well as home- and center-based programs ([Herbst, 2023](#)). Private household child care workers are defined as individuals employed in the private household services industry whose primary occupation is a child care worker. Home-based workers are self-employed individuals working in the child day care services industry and whose occupation is a child care worker or education administrator.<sup>1</sup> Finally, center-based workers include non-self-employed individuals who work in the child day care services industry and whose occupation is a child care worker, preschool teacher or assistant teacher, education administrator, or special education teacher.

The analyses report results for three sets of outcomes. We first examine whether a given woman is employed as a child care worker, both overall and separately by sector (i.e., center-based, home-based, and private household workers). All occupational choice measures are binary indicators equal to one if a woman is employed as a child care worker and zero otherwise. We then examine the schooling attainment of child care workers, first measured by the number of years of education received and then by binary indicators for whether a given woman is a high school drop-out (i.e., no more than 11 years of schooling), has at least a two-year college degree (i.e., 14 or more years of schooling), and has at least a four-year college degree (i.e., 16 or more years of schooling). The binary indicators

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<sup>1</sup>About 4.5% of the home-based workers in the analysis sample are education administrators, while the rest are child care workers. The results are robust to the removal of education administrators from the definition of home-based workers.



test the impact of access to pill and abortion at key points in the education distribution.<sup>2</sup> Finally, we examine the wages of child care workers, taking the inverse hyperbolic sine of real hourly wages. The measure of hourly wages is constructed by dividing annual earnings by annual hours of work, where hours of work is determined by multiplying the number of weeks of employment by the (usual) number of hours of work per week.<sup>3</sup>

These data are used to estimate the following equation:

$$Y_{ics} = \gamma PILL_{cs} + \phi ABORT_{cs} + \alpha X'_{ics} + \alpha Z'_{cs} + \xi_c + \eta_s + \tau_{rc} + \varepsilon_{ics}, \quad (1)$$

where  $Y_{ics}$  denotes one of the outcomes described above for woman  $i$  in birth cohort  $c$  located in state  $s$ . The variable  $PILL_{cs}$  represents the share of years between ages 14 and 21 that a given woman had legal and confidential access to the pill, while  $ABORT_{cs}$  represents the share of years between ages 14 and 21 that a woman had legal and confidential access to abortion. To construct these variables, we rely on data in Myers (2022), which documents the youngest age at which unmarried women could access “legal and confidential” oral contraceptive and abortion services by state and year.<sup>4</sup> Variation in pill access is driven by three factors: the 1960 FDA approval of the pill, the subsequent enforcement and repeal of “little Comstock” laws in several states between 1960 and 1965, and state-specific changes to age-of-majority, medical consent, and mature minor statutes that allowed individuals under age 21 to consent to the provision of medical services. Variation in abortion access is determined largely by the 1973 Supreme Court decision in *Roe v. Wade* to make abortion legal, pre-Roe changes in some states to enable legal access, and state-specific changes allowing for those under age 21 to access abortion services.

As shown in Figures A1 and A2, states made substantial changes between 1960 and 1976 to the policy and legal environment governing women’s access to the pill and abortion services. There was a substantial decline in the number of states that did *not* grant access to women ages 21 and under, while a growing number of states lowered the minimum age at which such women could gain legal and confidential access. By 1976, 21 states granted all

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<sup>2</sup>While the 1980 Census and most of the ACS surveys allow for individual years of education (or specific degrees) to be identified, the 1990 and 2000 Censuses combine multiple years of education into one category for those with less than a high school degree. In these cases, we assign all individuals in a given category a single value for years of schooling. Those with 12 years of schooling but no degree or a high school diploma (including a GED) are assigned 12 years of schooling. Individuals with less than one year of college or those with one or more years of college but no degree are assigned 13 years of schooling, while those with two years of college, an associate’s degree, or three years of college are assigned 14 years of schooling (Herbst, 2024).

<sup>3</sup>While the survey questions on employment and earnings focus on the previous year, it is important to note that the Census’ reference period is the previous calendar year, while for the ACS the reference period is the previous 12 months.

<sup>4</sup>The term “confidential” is defined as a policy environment in which doctors or other health care providers in a given state could prescribe the pill or provide abortion services to women of a certain age without involving the parent for consent purposes.

women ages 14 to 21 access to the pill, and 25 states provided such access to abortion services. We exploit this cross-state and -birth cohort variation to identify the impact of pill and abortion access.

To illustrate how state-specific policy conditions combine with birth timing to produce the identifying variation in the variables PILL and ABORT, consider the state of Texas. In 1972, the minimum age at which women could gain legal and confidential access to the pill was 21. The minimum age was then lowered to 18 in 1973. Therefore, a woman who turned 18 in 1972 (born in 1954) would not have access to the pill at age 18, but would have gained access at age 19. Therefore, her value of PILL is 0.375 (3 years of access divided by 8 potential years of access). However, for a woman born one year later (in 1955) and who turned 18 in 1973, she was able to access the pill at age 18, making the value of PILL for her 0.50 (4 divided by 8).

The model includes a set of individual-level demographic controls ( $X'$ ), including age, marital status, race/ethnicity, number of children, and non-wage income. Also included are a set of state-by-cohort characteristics ( $Z'$ ), including the male and female median wage, labor force participation rate, share employed in personal services, share married, and share non-white. Finally, the models include a set of birth cohort fixed effects,  $\xi_c$ , state fixed effects,  $\eta_s$ , and region-by-cohort fixed effects,  $\tau_{rc}$ , to account for any generational and geographic unobservables that may affect women's occupational and educational choices. Importantly, the region-by-cohort fixed effects absorb any regional differences in the extent of interstate travel for the purpose of obtaining an abortion (and perhaps the pill as well), which was common throughout the 1960's and 1970's, when states varied substantially in who could legally access these services (Joyce, 2013).<sup>5</sup> The  $\varepsilon_{ics}$  denotes the random error term. All analyses are weighted using the Census/ACS person weight, and the standard errors are clustered at the state-level.

## 3 Results

### 3.1 Main Results

We present our results in three steps. First, we examine the impact of reproductive technologies on child care employment decisions. Next, we study the educational attainment of the child care workers. Finally, we assess the effect of these technologies on wages. Throughout the analysis, we explore two dimensions of heterogeneity: differences across workers with varying levels of education and variations across child care sectors, including those

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<sup>5</sup>Although we emphasize the importance of the region-by-cohort fixed effects, we also estimate all models without these controls, and find our results to be similar to those presented in the paper.

in center-based, home-based, and private household settings.

Table 1 studies the impact of PILL and ABORT on the decision to work in the child care industry. Column (1) presents results for the full sample of women, while columns (2) and (3) focus on lower- and higher-skilled women, respectively, where lower-skilled is defined as having less than 14 years of education and higher-skilled as having 14 or more years. For brevity, our discussion focuses on these lower- and higher-skilled women. Overall, our findings indicate that increased access to the pill and abortion influenced child care employment patterns in distinct ways. While access to the pill reduced the share of higher-skilled women employed in child care, expanded abortion access increased the share of lower-skilled women employed in the industry.

This pattern is evident in the first set of results, which examines the decision to work in any sector of the child care industry. The estimates imply that exposure to abortion access every year between ages 14 and 21 (hereafter called “full access”) increased the likelihood of child care employment by 1.1 percentage points among less-skilled women [column (2)], while full access to the pill reduced the likelihood of child care employment by 0.3 percentage points among higher-skilled women [column (3)]. These effects imply a 69% increase in lower-skilled child care employment and a 20% reduction in higher-skilled employment from the means of each skill group.<sup>6</sup>

The remaining results in Table 1 examine the decision to work in the center-based, home-based, and private household sectors. It appears that full access to the pill and abortion reduced higher-skilled employment in the center-based sector (with no impact on lower-skilled employment) by approximately 0.2 percentage points (or 14%) and 0.4 percentage points (or 32%), respectively. Interestingly, full access to abortion increased both lower- and higher-skilled employment in the home-based sector, while the pill reduced higher-skilled employment by 0.07 percentage points (or 37%). Finally, full access to the pill and abortion increased lower-skilled employment in the private household sector by 0.04 percentage points (or 27%) and 0.3 percentage points (or 173%), respectively, while the pill reduced higher-skilled employment by 0.04 percentage points (or 57%).

It is possible that the heterogeneous effects across child care settings stem from sectoral differences in skill requirements and regulatory stringency. For example, center-based providers have relatively high educational and licensing requirements (which in turn attract better qualified workers), making them more sensitive to the departure of such workers following the diffusion of reproductive technologies (Herbst, 2024). Consistent with this pattern of

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<sup>6</sup>Note that “full access” to the pill and abortion—or eight years of access—implies a large amount of exposure compared to the sample means for PILL and ABORT. Indeed, women in the sample had access to the pill for about 29% of the years between ages 14 and 21 (or 2.3 years), while women had access to abortion services for about 16% of the years (or 1.3 years), on average.

skill-based occupational reallocation, it appears that higher-skilled women within the center-based sector were able to transition out of child care employment (and presumably into higher-skilled occupations). In contrast, home-based and private household providers are lightly regulated and offer greater work flexibility, making these sectors more accessible to lower-skilled women. These job characteristics likely became more attractive to such women as better access to fertility controls reshaped the labor market in such a way as to limit their employment options in higher-skilled sectors (Dex and Ward, 2007; Herbst, 2018). Overall, the findings in Table 1 imply that as higher-skilled women in low-paying sectors like child care moved into better-paying occupations, the workforce became increasingly dominated by lower-skilled women. However, this shift varied across child care settings, with the largest shifts occurring in the home-based and private household sectors. For these women, child care employment may have remained one of the few viable options, while those with greater skills within the sector, such as those in center-based care, were better positioned to move into higher-paying jobs.

Furthermore, the results in Table 1 indicate that the pill primarily reduced the attractiveness of child care employment among higher-skilled women, while abortion access increased its appeal among lower-skilled women. A possible explanation for this pattern is that the pill and abortion affected women from different backgrounds in distinct ways: the pill may have had a greater influence on advantaged women, while abortion had a stronger effect on disadvantaged women.<sup>7</sup> This finding is consistent with Steingrimsdottir (2016), who finds that access to the pill led higher-ability women to pursue high-paying, male-dominated careers, while abortion access had a greater effect on low-ability women, shifting them into low-wage occupations. In our context, it is possible that within the home-based and private household sectors, relatively higher-educated women were more likely to use the pill to delay childbearing and pursue careers outside of child care, while less-educated women, for whom abortion may play a larger role in fertility decisions, were more likely to enter into lower-skilled roles within these sectors.

Given that the introduction of the pill and abortion reduced the attractiveness of child care employment among higher-skilled women (while increasing its attractiveness among lower-skilled women), it is perhaps not surprising that these technologies led to reductions in schooling attainment within the child care workforce, as documented in Table 2. Panel A shows that full access to the pill and abortion led to a decline in average years of schooling among all child care workers by 0.24 years (or 2%) and 0.77 years (or 6%) [(column (1))], respectively. This effect

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<sup>7</sup>Research indicates that low-income and minority women are less likely to use contraception overall (Brown et al., 1995). Additionally, studies show that the legalization of abortion in the 1970's led to substantial declines in teen birth rates, with black women experiencing larger birth rate reductions than whites (Levine et al., 1999; Myers, 2017).

was primarily driven by a decrease in the share of workers with 14 or more years of schooling [columns (3) and (4)]. The remaining results in Table 2 show interesting heterogeneity, beginning with center-based child care workers (Panel B), for whom years of schooling fell by 0.15 (or 1%) and 0.66 (or 5%) because of full access to the pill and abortion, respectively. These reductions appear to be driven by an increase in the share of center workers who are high school drop-outs, but there are also indications that the center-based sector experienced a reduction in the share of workers with higher levels of education. Interestingly, increased abortion access *raised* education levels in the home-based sector by reducing the share of workers who are high school drop-outs (Panel C). Finally, Panel D indicates that full access to the pill reshaped the composition of the private household workforce, leading to a 1.4-year (or 12%) decline in schooling. This shift largely reflects a reduction in the proportion of workers with 14 or more years of education.

Table 3 studies the impact of PILL and ABORT on the equilibrium wages of child care workers overall [column (1)] as well as by sector [columns (2) through (4)]. Generally speaking, both policies contributed to lower wages in the child care workforce. For example, full access to the pill reduced average wages by 4% among all workers, while full access to abortion led to a 21% decline. As shown in column (4), those in the private household sector appear to be particularly sensitive to changes in reproductive technology access, showing large reductions in wages after the roll-out of pill and abortion services.

One way to assess the magnitude of our results is to calculate the amount of the change in the outcomes (across birth cohorts) explained by the regression coefficients. Between the 1930 and 1955 birth cohorts, the share of lower-skilled women employed as child care workers grew from 0.8% to 1.7%, while the share of higher-skilled women in child care grew from 1.4% to 1.5%. Using the estimates in Table 1, our results imply that 57% of the increase in lower-skilled employment can be attributed to an increase in abortion access. Furthermore, our estimates suggest that the share of higher-skilled women in child care would have been 1.43 times higher had the pill not been made accessible.<sup>8</sup> We also examine how our estimates relate to the schooling attainment of child care workers. Between the 1930 and 1955 birth cohorts, average years of education increased from 11.6 to 13.3. Using the estimates in Table 2, our results suggest that years of schooling would have been 8% higher had the pill not been made accessible, while years of schooling would have been 23% higher had abortion not been made accessible.

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<sup>8</sup>The abortion calculation is  $(0.0105 \cdot (x)) / (.01734929 - .0075773)$ , where  $x$  is the change in the mean of ABORT between the 1930 and 1955 cohorts. The pill calculation is  $(-0.0029 \cdot (y)) / (.0148056 - .0136456)$ , where  $y$  is the change in the mean of PILL.

### 3.2 Robustness and Extensions

Table A1 provides results from a number of specification tests. We test two alternative definitions of the policy variables, measuring the share of years between ages 14 and 20 that women had legal access to the pill and abortion as well as a binary indicator for any legal access to these services between the ages of 14 and 20.<sup>9</sup> In addition, we include additional sets of controls, such as survey year fixed effects and state-specific linear cohort trends. The cohort trends absorb heterogeneity that is correlated with any ongoing child care labor market trends. We also examine whether limiting the sample to native-born women induces any changes in the results. Omitting foreign-born women removes some uncertainty about the location of individuals during the critical period of potential exposure to the pill and abortion access. Furthermore, we omit the five “repeal” states and the District of Columbia, which legalized abortion prior to the 1973 *Roe v. Wade* decision, and we omit the 13 “reform” states that allowed abortions to occur under limited circumstances also prior to *Roe v. Wade*. Following Myers (2017), we estimate models that limit the sample to the “repeal” states as well as those at least 500 miles from California, New York, and the District of Columbia. This analysis deals with the criticism from Joyce (2013), who argues that inter-state travel (primarily to these three jurisdictions) biases (downward) the impact of pill and abortion access. Finally, we omit Mississippi and Ohio from the analysis because both states altered their policies on pill access in 1965, when the U.S.’s civil right’s movement was at its apex, which might confound the impact of the pill on the child care workforce (Myers, 2017). In nearly all cases, our results are robust to these specification tests.

As an additional robustness check, we conduct a leave-one-out analysis, in which we randomly select a set of 10 states (without replacement and excluding Mississippi and Ohio) to be removed from the analysis, one at a time. Such a test is important to confirm that women’s exposure to the pill and abortion access is random across states and that our results are not driven by a single state. The results from this exercise, presented in Table A2, indicate that the estimates remain quantitatively similar to one another and to the baseline results discussed earlier, and the estimates maintain statistical significance.

When investigating the impact of increased pill and abortion access on family formation outcomes, it is common

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<sup>9</sup>Both variables measure access to the pill and abortion before age 21, which is consistent with the way the “early legal access” (ELA) literature generally specifies them. For example, Bailey (2006) constructs a binary indicator equal to one if a given woman had access to the pill before age 21. Lindo et al. (2020) measures the share of years a woman would have access to the pill and abortion between ages 18 and 20, while Myers (2017) measures the share of years a woman would have access to the pill and abortion between ages 14 and 18-19.

for studies to examine heterogeneity across white and black women (Guldi, 2008; Myers, 2017). Table A3 presents results from such an analysis of the child care workforce, where Panel A shows results for white women and Panel B shows results for black women. The pattern of results is similar across both groups, suggesting that the diffusion of reproductive technology shaped white and black women’s child care employment decisions in comparable ways.

## 4 Conclusion

This study examines how access to reproductive technologies—specifically the pill and abortion—shaped the composition and quality of the contemporary child care workforce. Leveraging state-by-birth cohort variation in legal access to these technologies, we investigate impacts on women’s decision to work in the child care industry and how these decisions influenced educational attainment and wages within the workforce. We also examine how these effects differ across women’s level of human capital and across key segments of the child care sector, including center-based, home-based, and private household settings.

Our results reveal that access to reproductive technologies influenced the composition, skill levels, and wages of the child care workforce. Specifically, access to the pill and abortion reduced the supply of higher-skilled women in center-based settings, while increasing the supply of lower-skilled women in home-based and private household settings. Years of schooling attainment within the child care industry declined, especially in the center-based and private household sectors, where access to the pill and abortion increased the attractiveness of child care employment among less-skilled women. Wage reductions were also observed across all segments of the child care industry, with the most pronounced declines occurring in private household care, which is likely due to an influx of lower-skilled workers. Our results remain consistent across a range of robustness analyses, further strengthening the validity of our findings.

One noteworthy result from our analysis is that the pill and abortion influenced child care employment differently across child care settings, likely due to sectoral differences in skill and regulatory requirements. Center-based providers, who are exposed to stricter educational and licensing requirements, experienced a relatively large departure of higher-skilled workers, whereas home-based and private household providers, who offer more flexibility with fewer quality restrictions, witnessed an increase in lower-skilled workers. Furthermore, access to the pill and abortion appear to have affected women from different socioeconomic backgrounds in distinct ways. The pill may have encouraged women from more advantaged backgrounds to delay childbearing in order to pursue higher-paying

careers, while abortion access may have had a greater impact on women with lower socioeconomic status, making informal child care a more viable employment destination.

Such changes in the composition of the child care workforce may in turn have important implications for the quality and stability of these services. In particular, reductions in the share of higher-skilled women in center-based care may have consequences for the quality of early childhood education, warranting additional public investments and policy interventions such as professional development programs, improvements in working conditions to retain high-skilled workers, and stricter licensing requirements. Meanwhile, the increasing presence of lower-skilled women in the home-based and private household sectors highlights the need for policies that ensure adequate training and quality standards in these less-regulated sectors.

Recent policy discussions have emphasized the need for significant public funding to expand access to high-quality child care, improve wages, and professionalize the workforce. For example, the Child Care for Working Families Act, introduced as a proposal in 2023, aims to cap child care costs, increase worker wages, and invest in workforce development, while the CCDBG Reauthorization Act of 2024 seeks to increase child care supply by expanding capacity, upgrading facilities, and investing in workforce recruitment and retention ([Luchner, 2024](#); [First Five Years Fund, 2024](#)). Our results indicate that the diffusion of reproductive technologies contributed to a decrease in the attractiveness of child care employment among higher-skilled workers while increasing its attractiveness among lower-skilled workers. These shifts suggest that increasing the supply of high-quality facilities and workers should indeed be central to any reform proposal targeting the child care sector.

Reproductive technologies have empowered women to delay childbearing, invest in education, and pursue careers in high-skilled fields (with better compensation) outside traditionally female-dominated sectors like child care. While this marks a significant societal advancement, our analysis shows that it also led to a redistribution of skilled labor away from child care, where workforce quality is vital for supporting early childhood development and facilitating parental employment. Rather than viewing reproductive autonomy as the cause of these transformations, our findings underscore the need for public policies to address the structural challenges in the child care sector. Policies that lead to higher wages, improved professional development opportunities, and better working conditions could make child care employment more attractive to high-skilled individuals. Unlike other low-paying, female-dominated professions, the case for public investment in child care is particularly compelling because of the



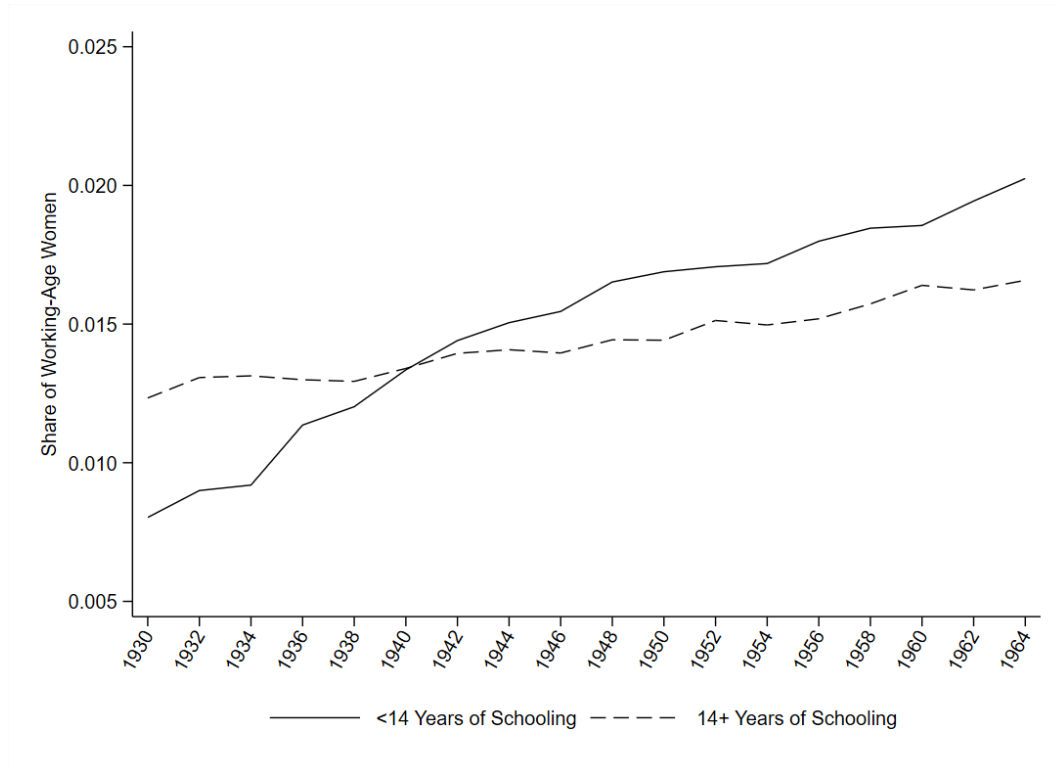
presence of market failures, including externalities and information asymmetries, that often justify a public role in efforts to improve quality, affordability, and accessibility ([Borowsky et al., 2022](#)). Incorporating these structural reforms would complement the positive societal benefits of reproductive autonomy, helping to strengthen essential care-related professions while addressing pressing workforce challenges.

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**Figure 1:** Share of Working-Age Women Employed in the Child Care Industry, by Education Level and Birth Cohort



Source.—U.S. Decennial Census, 1980-2000 and American Community Survey (ACS), 2005-2019 (Ruggles et al., 2024).

Notes.—This figure shows the share of women ages 25 to 64 employed in the child care industry by education level and birth cohort. The figures are presented separately for women with less than 14 years of schooling and for women with 14 or more years of schooling over the 1930 to 1964 birth cohorts. All figures are weighted using the Census/ACS person weight.

**Table 1:** Effects of Reproductive Technology on Child Care Employment

Outcome Variable	(1)	(2)	(3)
<b>=1 if any child care worker</b>			
PILL	-0.0005 (0.0008)	0.0005 (0.0008)	-0.0029** (0.0011)
ABORT	0.0041** (0.0016)	0.0105*** (0.0031)	-0.0017 (0.0015)
<b>=1 if center-based worker</b>			
PILL	-0.0004 (0.0007)	0.0003 (0.0007)	-0.0017* (0.0010)
ABORT	-0.0028** (0.0013)	-0.0009 (0.0022)	-0.0038** (0.0016)
<b>=1 if home-based worker</b>			
PILL	-0.0003 (0.0003)	-0.0001 (0.0004)	-0.0007* (0.0004)
ABORT	0.0052*** (0.0009)	0.0088*** (0.0013)	0.0013** (0.0005)
<b>=1 if private household worker</b>			
PILL	0.0001 (0.0002)	0.0004* (0.0002)	-0.0004* (0.0002)
ABORT	0.0017*** (0.0003)	0.0026*** (0.0006)	0.0007 (0.0005)
Sample Education Restriction	Full Sample	<14 Years of Education	14+ Years of Education

Source.—U.S. Decennial Census, 1980-2000 and American Community Survey (ACS), 2005-2019 (Ruggles et al., 2024) and Myers (2022).

Notes.—The outcomes are binary indicators for any employment in the child care industry, employment in the center-based sector, employment in the home-based sector, and employment in the private household sector, respectively. All models include the key variables PILL and ABORT, which are described in the main text, a set of individual-level demographic controls, a set of state-by-cohort characteristics, birth cohort fixed effects, state fixed effects, and region-by-cohort fixed effects. All analyses are weighted using the Census/ACS person weight, and the standard errors are clustered at the state-level. The models in column (1) are estimated on the full sample of women ages 25 to 64 in the 1930 to 1955 birth cohorts. The models in column (2) are estimated on the subset of women with less than 14 years of schooling. The models in column (3) are estimated on the subset of women with 14 or more years of schooling. N=7,629,869 for the models in column (1); N=5,354,230 for the models in column (2); and N=2,275,639 for the models in column (3).

**Table 2:** Effects of Reproductive Technology on the Schooling Attainment of Child Care Workers

Analytic Sample	(1)	(2)	(3)	(4)
<b>Panel A: All Child Care Workers</b>				
PILL	-0.2415** (0.1179)	-0.0022 (0.0118)	-0.0472** (0.0225)	-0.0577*** (0.0195)
ABORT	-0.7705*** (0.1897)	0.0483 (0.0375)	-0.1234** (0.0573)	-0.0905 (0.0641)
<b>Panel B: Center-Based Workers</b>				
PILL	-0.1558 (0.1030)	-0.0071 (0.0099)	-0.0247 (0.0231)	-0.0569*** (0.0208)
ABORT	-0.6573** (0.2957)	0.0806*** (0.0227)	-0.0931 (0.0849)	-0.0537 (0.0810)
<b>Panel C: Home-Based Workers</b>				
PILL	-0.2092 (0.2654)	0.0113 (0.0292)	-0.0496 (0.0395)	-0.0444 (0.0292)
ABORT	0.9821*** (0.3642)	-0.2445*** (0.0466)	-0.0218 (0.0615)	0.0447 (0.0518)
<b>Panel D: Private Household Workers</b>				
PILL	-1.3546*** (0.5044)	0.0672 (0.0608)	-0.2337*** (0.0765)	-0.0809 (0.0524)
ABORT	-0.3673 (0.8170)	0.0379 (0.1872)	0.0494 (0.1447)	-0.0785 (0.1734)
Outcome Variable	Years of Education	=1 <=11 Years of Education	=1 14+ Years of Education	=1 16+ Years of Education

Source.—U.S. Decennial Census, 1980-2000 and American Community Survey (ACS), 2005-2019 (Ruggles et al., 2024) and Myers (2022).

Notes.—The outcomes are years of schooling [column (1)], a binary indicator for 11 or fewer years of schooling [column (2)], a binary indicator for 14 or more years of schooling [column (3)], and a binary indicator for 16 or more years of schooling [column (4)]. All models include the key variables PILL and ABORT, which are described in the main text, a set of individual-level demographic controls, a set of state-by-cohort characteristics, birth cohort fixed effects, state fixed effects, and region-by-cohort fixed effects. All analyses are weighted using the Census/ACS person weight, and the standard errors are clustered at the state-level. All models are restricted to subsets of female child care workers ages 25 to 64 in the 1930 to 1955 birth cohorts. N=89,621 for the models in Panel A; N=63,226 for the models in Panel B; N=18,105 for the models in Panel C; and N=8,282 for the models in Panel D.

**Table 3:** Effects of Reproductive Technology on Child Care Workers' Wages

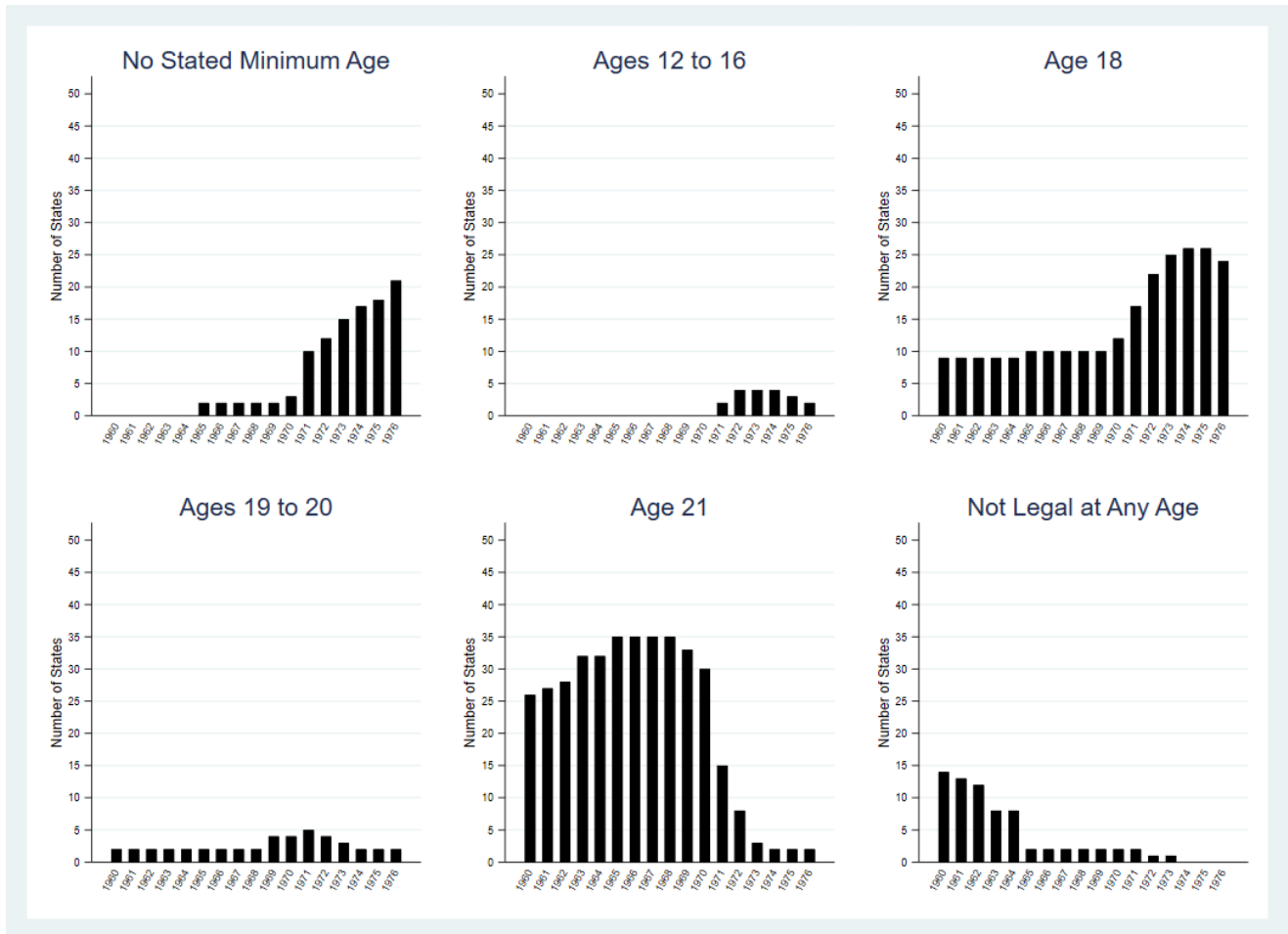
	(1)	(2)	(3)	(4)
PILL	-0.0421 (0.0353)	-0.0204 (0.0335)	-0.0001 (0.1037)	-0.1615 (0.1280)
ABORT	-0.2026** (0.0791)	-0.0466 (0.0753)	0.0826 (0.2397)	-0.7842*** (0.2742)
Sample	Full Sample	Center-Based Workers	Home-Based Workers	Private HH Workers

Source.—U.S. Decennial Census, 1980-2000 and American Community Survey (ACS), 2005-2019 (Ruggles et al., 2024) and Myers (2022).

Notes.—The outcome in all models is the inverse hyperbolic sine of real hourly wages. All models include the key variables PILL and ABORT, which are described in the main text, a set of individual-level demographic controls, a set of state-by-cohort characteristics, birth cohort fixed effects, state fixed effects, and region-by-cohort fixed effects. All analyses are weighted using the Census/ACS person weight, and the standard errors are clustered at the state-level. The model in column (1) is estimated on the full sample of female child care workers ages 25 to 64 in the 1930 to 1955 birth cohorts. The model in column (2) is estimated on the subset of center-based workers. The model in column (3) is estimated on the subset of home-based workers. The model in column (4) is estimated on the subset of private household workers. N=89621 for the model in column (1); N=63226 for the model in column (2); N=18105 for the model in column (3); and N=8282 for the model in column (4).

## A Appendix Figures and Tables

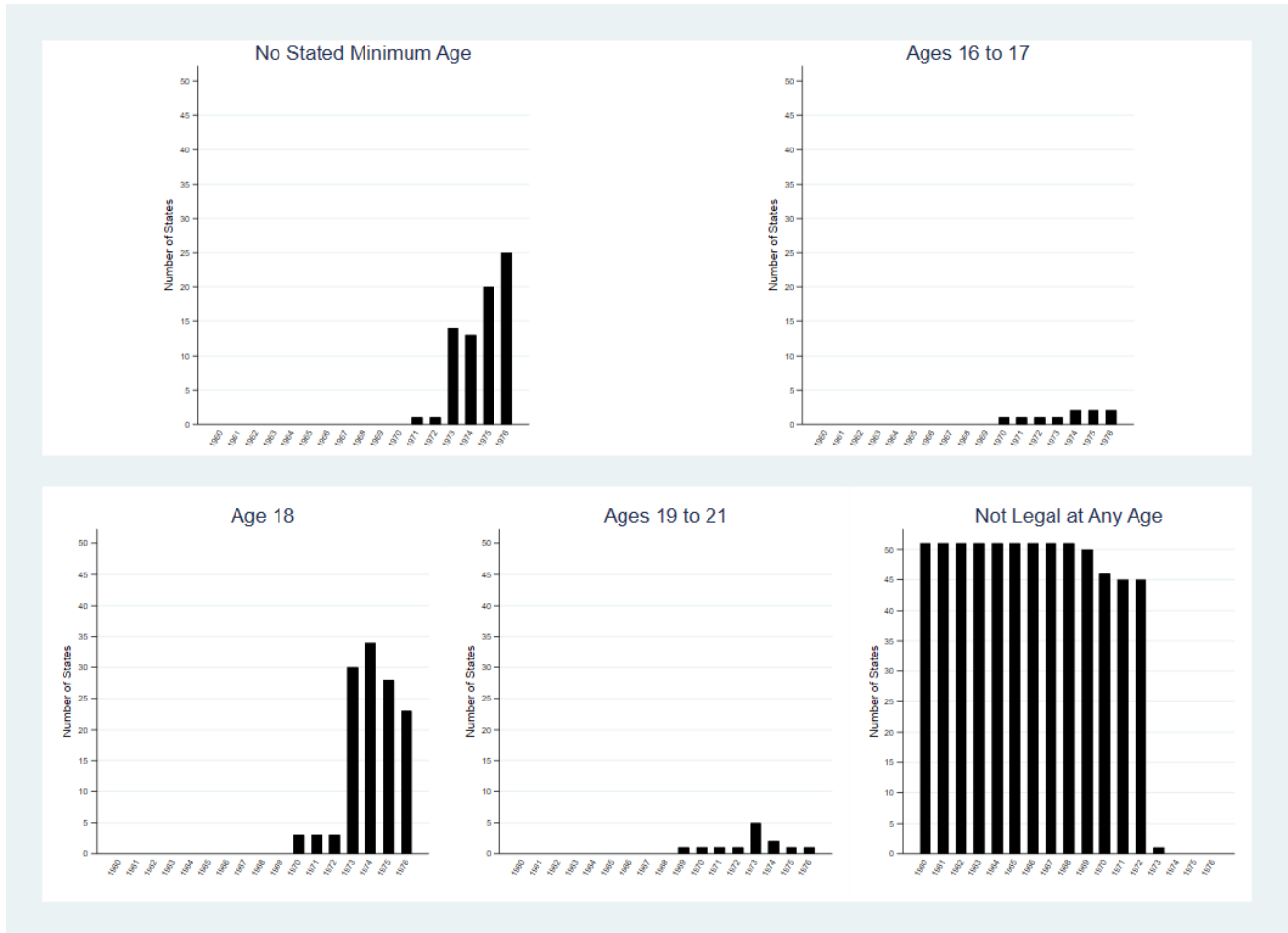
**Figure A1:** Number of States Granting Legal and Confidential Access to the Pill, by Age, 1960 to 1976



Source.—Myers (2022)



**Figure A2:** Number of States Granting Legal and Confidential Access to Abortion, by Age, 1960 to 1976



Source.—Myers (2022)

**Table A1:** Robustness Checks

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Alternative policy measure #1</b>						
PILL	0.0003 (0.0006)	-0.0020*** (0.0006)	-0.1869** (0.0914)	-0.0359* (0.0179)	-0.0421*** (0.0151)	-0.0269 (0.0282)
ABORT	0.0100*** (0.0027)	-0.0013 (0.0019)	-0.6653*** (0.1194)	-0.1079** (0.0406)	-0.0879 (0.0528)	-0.1589** (0.0711)
<b>Alternative policy measure #2</b>						
PILL	0.0003 (0.0004)	-0.0009** (0.0004)	-0.1183 (0.0734)	-0.0120 (0.0126)	-0.0061 (0.0118)	-0.0179 (0.0141)
ABORT	0.0029*** (0.0011)	-0.0005 (0.0005)	-0.2289* (0.1345)	-0.0372* (0.0200)	-0.0257 (0.0234)	-0.0432* (0.0245)
<b>Add age <math>\times</math> cohort FE</b>						
PILL	0.0000 (0.0007)	-0.0025*** (0.0008)	-0.2420** (0.1168)	-0.0476** (0.0228)	-0.0583*** (0.0202)	-0.0458 (0.0354)
ABORT	0.0126*** (0.0033)	-0.0004 (0.0019)	-0.8212*** (0.1747)	-0.1347** (0.0550)	-0.0986 (0.0630)	-0.1879** (0.0792)
<b>Add survey year FE</b>						
PILL	0.0000 (0.0007)	-0.0025*** (0.0008)	-0.2449** (0.1175)	-0.0476** (0.0225)	-0.0575*** (0.0196)	-0.0431 (0.0353)
ABORT	0.0125*** (0.0033)	-0.0005 (0.0019)	-0.7868*** (0.1871)	-0.1283** (0.0563)	-0.0926 (0.0636)	-0.1939** (0.0791)
<b>Add state linear cohort trends</b>						
PILL	-0.0011 (0.0011)	-0.0023** (0.0010)	-0.1151 (0.1795)	-0.0243 (0.0310)	-0.0316 (0.0299)	-0.0431 (0.0432)
ABORT	0.0059** (0.0027)	0.0021 (0.0019)	-0.2293 (0.3088)	-0.0401 (0.0760)	-0.0055 (0.0803)	-0.2787*** (0.0969)
<b>Sample is native born</b>						
PILL	-0.0000 (0.0007)	-0.0021*** (0.0007)	-0.2807*** (0.0998)	-0.0436** (0.0211)	-0.0603*** (0.0175)	-0.0508 (0.0360)
ABORT	0.0045** (0.0019)	-0.0005 (0.0022)	-0.3018 (0.2209)	-0.0675 (0.0566)	-0.0453 (0.0627)	-0.1250 (0.0890)
<b>Omit 6 “repeal” states</b>						
PILL	-0.0002 (0.0007)	-0.0028*** (0.0008)	-0.2516** (0.1145)	-0.0422* (0.0219)	-0.0548*** (0.0181)	-0.0693* (0.0371)
ABORT	0.0147* (0.0073)	-0.0043 (0.0068)	-0.4999 (0.7145)	-0.2670 (0.1887)	0.0004 (0.1544)	0.2364 (0.2407)
<b>Omit 13 “reform” states</b>						
PILL	-0.0004 (0.0007)	-0.0030*** (0.0010)	-0.1788 (0.1305)	-0.0391 (0.0242)	-0.0621*** (0.0212)	-0.0110 (0.0397)
ABORT	0.0172*** (0.0025)	-0.0013 (0.0016)	-0.9252*** (0.2197)	-0.1683*** (0.0557)	-0.1585*** (0.0580)	-0.2062** (0.0936)
<b>“Repeal” and 500+ miles from CA/NY/WA</b>						
PILL	0.0008 (0.0014)	-0.0012 (0.0012)	-0.2303 (0.2027)	-0.0634 (0.0397)	-0.0644** (0.0291)	-0.1834*** (0.0544)
ABORT	0.0016 (0.0030)	-0.0016 (0.0045)	-0.0851 (0.3095)	0.0172 (0.1030)	0.1154 (0.0768)	-0.1867 (0.1485)
<b>Omit Mississippi and Ohio</b>						
PILL	0.0008 (0.0013)	-0.0029** (0.0012)	-0.2392 (0.2043)	-0.0672* (0.0382)	-0.0558* (0.0333)	-0.0802* (0.0468)
ABORT	0.0124*** (0.0034)	-0.0002 (0.0020)	-0.7542*** (0.1937)	-0.1162* (0.0615)	-0.0878 (0.0653)	-0.1954** (0.0796)
Outcome	=1 any CC	=1 any CC	Yrs of Ed	=1 14+ Yrs	=1 16+ Yrs	Wages
Sample Education Restriction	<14 Yrs	14+ Yrs	Full	Full	Full	Full

Source.—U.S. Decennial Census, 1980-2000 and American Community Survey (ACS), 2005-2019 (Ruggles et al., 2024) and Myers (2022).

Notes.—The outcomes are a binary indicator for any employment in the child care industry [columns (1) and (2)], years of schooling [column (3)], a binary indicator for 14 or more years of schooling [column (4)], a binary indicator for 16 or more years of schooling [column (5)], and wages [column (6)]. All models include a version of the key variables PILL and ABORT, which are described in the main text, a set of individual-level demographic controls, a set of state-by-cohort characteristics, birth cohort fixed effects, state fixed effects, and region-by-cohort fixed effects. All analyses are weighted using the Census/ACS person weight, and the standard errors are clustered at the state-level. The models in column (1) are estimated on the subset of women with less than 14 years of education. The models in column (2) are estimated on the subset of women with 14 or more years of education. The models in columns (3) through (6) are estimated on the full set of child care workers.

**Table A2:** Results from the Leave-One-Out Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Indiana</b>						
PILL	0.0003 (0.0007)	-0.0024*** (0.0008)	-0.2145* (0.1204)	-0.0458* (0.0229)	-0.0581*** (0.0207)	-0.0383 (0.0357)
ABORT	0.0126*** (0.0033)	-0.0005 (0.0019)	-0.7828*** (0.1829)	-0.1245** (0.0569)	-0.0911 (0.0637)	-0.1983** (0.0791)
<b>Hawaii</b>						
PILL	0.0001 (0.0007)	-0.0026*** (0.0008)	-0.2411** (0.1182)	-0.0481** (0.0228)	-0.0578*** (0.0196)	-0.0453 (0.0354)
ABORT	0.0129*** (0.0033)	-0.0008 (0.0020)	-0.7968*** (0.1922)	-0.1219** (0.0589)	-0.0909 (0.0658)	-0.1960** (0.0800)
<b>Montana</b>						
PILL	0.0001 (0.0007)	-0.0027*** (0.0008)	-0.2576** (0.1205)	-0.0514** (0.0227)	-0.0601*** (0.0195)	-0.0373 (0.0356)
ABORT	0.0127*** (0.0032)	-0.0003 (0.0019)	-0.7656*** (0.1917)	-0.1234** (0.0574)	-0.0914 (0.0643)	-0.2009** (0.0792)
<b>Texas</b>						
PILL	-0.0000 (0.0007)	-0.0024*** (0.0008)	-0.2542** (0.1148)	-0.0485** (0.0216)	-0.0573*** (0.0197)	-0.0366 (0.0357)
ABORT	0.0127*** (0.0032)	-0.0004 (0.0019)	-0.7639*** (0.1901)	-0.1217** (0.0573)	-0.0908 (0.0640)	-0.2007** (0.0793)
<b>North Carolina</b>						
PILL	0.0000 (0.0007)	-0.0025*** (0.0008)	-0.2482** (0.1178)	-0.0460** (0.0225)	-0.0560*** (0.0196)	-0.0422 (0.0357)
ABORT	0.0129*** (0.0032)	-0.0005 (0.0019)	-0.7730*** (0.1944)	-0.1287** (0.0577)	-0.0959 (0.0631)	-0.1981** (0.0796)
<b>Oregon</b>						
PILL	-0.0002 (0.0007)	-0.0029*** (0.0008)	-0.2416** (0.1187)	-0.0476** (0.0227)	-0.0588*** (0.0200)	-0.0431 (0.0355)
ABORT	0.0143*** (0.0028)	0.0009 (0.0018)	-0.7998*** (0.1894)	-0.1228* (0.0618)	-0.0899 (0.0701)	-0.2117*** (0.0816)
<b>Iowa</b>						
PILL	0.0001 (0.0007)	-0.0026*** (0.0008)	-0.2652** (0.1130)	-0.0523** (0.0225)	-0.0609*** (0.0185)	-0.0422 (0.0354)
ABORT	0.0127*** (0.0033)	-0.0006 (0.0019)	-0.8232*** (0.1841)	-0.1315** (0.0567)	-0.1004 (0.0621)	-0.2014** (0.0793)
<b>Minnesota</b>						
PILL	-0.0001 (0.0007)	-0.0023*** (0.0008)	-0.2129* (0.1183)	-0.0403* (0.0219)	-0.0517** (0.0194)	-0.0369 (0.0355)
ABORT	0.0125*** (0.0033)	0.0004 (0.0019)	-0.7402*** (0.1964)	-0.1112* (0.0579)	-0.0840 (0.0657)	-0.1990** (0.0799)
<b>Vermont</b>						
PILL	0.0000 (0.0007)	-0.0024*** (0.0008)	-0.2388** (0.1180)	-0.0457** (0.0224)	-0.0571*** (0.0195)	-0.0423 (0.0353)
ABORT	0.0129*** (0.0032)	-0.0008 (0.0019)	-0.7837*** (0.1880)	-0.1293** (0.0568)	-0.0918 (0.0644)	-0.2083*** (0.0792)
<b>Idaho</b>						
PILL	0.0000 (0.0007)	-0.0023*** (0.0008)	-0.2300* (0.1188)	-0.0446* (0.0224)	-0.0568*** (0.0197)	-0.0419 (0.0355)
ABORT	0.0128*** (0.0032)	-0.0004 (0.0019)	-0.7740*** (0.1895)	-0.1248** (0.0572)	-0.0910 (0.0643)	-0.2038** (0.0791)
Outcome	=1 any CC	=1 any CC	Yrs of Ed	=1 14+ Yrs	=1 16+ Yrs	Wages
Sample Education Restriction	<14 Yrs	14+ Yrs	Full	Full	Full	Full

Source.—U.S. Decennial Census, 1980-2000 and American Community Survey (ACS), 2005-2019 (Ruggles et al., 2024) and Myers (2022).

Notes.—The outcomes are a binary indicator for any employment in the child care industry [columns (1) and (2)], years of schooling [column (3)], a binary indicator for 14 or more years of schooling [column (4)], a binary indicator for 16 or more years of schooling [column (5)], and wages [column (6)]. All models include the key variables PILL and ABORT, which are described in the main text, a set of individual-level demographic controls, a set of state-by-cohort characteristics, birth cohort fixed effects, state fixed effects, and region-by-cohort fixed effects. All analyses are weighted using the Census/ACS person weight, and the standard errors are clustered at the state-level. The models in column (1) are estimated on the subset of women with less than 14 years of education. The models in column (2) are estimated on the subset of women with 14 or more years of education. The models in columns (3) through (6) are estimated on the full set of child care workers. The state names in bold indicate the states that have been removed from the analyses.

**Table A3:** Effects of Reproductive Technology, by Race

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: White women</b>						
PILL	0.0005 (0.0008)	-0.0030*** (0.0008)	-0.3737*** (0.1060)	-0.0711*** (0.0235)	-0.0737*** (0.0214)	-0.0388 (0.0392)
ABORT	0.0053*** (0.0018)	0.0004 (0.0023)	-0.2517 (0.3387)	-0.0717 (0.0623)	-0.0681 (0.0732)	0.0464 (0.0936)
<b>Panel B: Black women</b>						
PILL	-0.0010 (0.0021)	-0.0036 (0.0036)	-0.3916** (0.1873)	-0.0626* (0.0356)	-0.0840** (0.0324)	-0.1345 (0.0938)
ABORT	0.0168** (0.0076)	0.0030 (0.0083)	-0.8021 (0.5018)	-0.0543 (0.1085)	0.0532 (0.1260)	-0.5660** (0.2407)
Outcome	=1 any CC	=1 any CC	Yrs of Ed	=1 14+ Yrs	=1 16+ Yrs	Wages
Sample Education Restriction	<14 Yrs	14+ Yrs	Full	Full	Full	Full

Source.—U.S. Decennial Census, 1980-2000 and American Community Survey (ACS), 2005-2019 (Ruggles et al., 2024) and Myers (2022).

Notes.—The outcomes are a binary indicator for any employment in the child care industry [columns (1) and (2)], years of schooling [column (3)], a binary indicator for 14 or more years of schooling [column (4)], a binary indicator for 16 or more years of schooling [column (5)], and wages [column (6)]. All models include the key variables PILL and ABORT, which are described in the main text, a set of individual-level demographic controls, a set of state-by-cohort characteristics, birth cohort fixed effects, state fixed effects, and region-by-cohort fixed effects. All analyses are weighted using the Census/ACS person weight, and the standard errors are clustered at the state-level. The models in column (1) are estimated on the subset of women with less than 14 years of education. The models in column (2) are estimated on the subset of women with 14 or more years of education. The models in columns (3) through (6) are estimated on the full set of child care workers.