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At a Crossroads:

The impact of abortion access on future economic outcomes*

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Abstract

An unintended birth at an early age has the potential to interrupt a woman's education, with implications for her future career and earnings. This paper investigates the impact of abortion access on women's economic outcomes later in life. I corroborate earlier findings that abortion access during adolescence and early adulthood reduces early births. I then offer updated evidence that, controlling for contraception access, abortion access increases educational attainment, career outcomes and earnings of black women and reduces their poverty and reliance on public assistance. Findings suggest that fertility is a significant pathway by which abortion access affects work status and family income, but that other pathways such as expectations and investment in human capital are more relevant for occupational choice and personal earnings.

JEL Codes: J13 (Fertility/Family Planning), I2 (Education), J24 (Human capital/Occupational choice), J16 (Economics of Gender), N32 (US economic history, post-1913)

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1 Introduction

When a young woman discovers that she has an unintended pregnancy, her life is truly at a crossroads. Becoming a parent is one of the most life-changing events that can occur. When this happens unplanned in adolescence or early adulthood it has the potential to change the direction of a young woman's trajectory in terms of educational attainment, career track, and future economic prosperity.

Women with early births are less likely to complete a college degree (Hoffman, Foster and Furstenberg, 1993). Even for women already enrolled in college, those with children are less likely to graduate (IWPR, 2019). Without a college degree, a woman is unable to pursue a career that requires a professional degree (such as law or medicine). Women without a degree are also less likely to obtain managerial positions. Those working in professional or managerial roles earn significantly more than others, so derailing one's education has the potential to impact future earnings and poverty status.[1] Missing out on a college degree costs a women $1.286 million in lower earnings over her lifetime.[2]

If an early pregnancy represents a crossroads, a relevant question is whether abortion access can affect the direction a young woman's life takes. Her choice set includes parenthood, adoption, and abortion. If abortion replaces adoption only, then abortion access may not shift her trajectory. However, if abortion access offsets parenthood in some cases, it may impact her economic outcomes in the short and long run.

This work first investigates whether abortion access affects the outcome of an unintended pregnancy. A significant body of existing evidence documents that abortion access does reduce births to teens and young women, and my findings are consistent with these. The primary research question of this paper is how abortion access affects a woman's future economic status, and whether such effects differ by demographic subgroup.

I rely on state-by-year variation in legal access to abortion during the 1960's and 1970's and in whether a minor could confidentially access an abortion without parental involvement in the 1970's and 1980's. This variation was often inadvertently determined by variation in pre-existing laws that allowed pregnant minors to consent to medical care, which resulted in confidential access to abortion when it was legalized. When controlling for state and cohort fixed effects, one can arguably estimate the causal impact of abortion access on outcomes of interest.

I find that abortion access reduced the probability of a teen birth and an early birth (before age 24). I then examine economic outcomes at ages 24 to 45. For white women, I find no significant knock-on effects on economic outcomes. For black women, abortion access results in increases in

[1] Author's analysis of women aged 24-55 in 2019 Annual Social and Economic Supplement of the Current Population Survey indicates that 11% of workers without a degree have a professional career, versus 44% of workers with a bachelors or advanced degree. Only 5% of those working without a degree are managers, versus 13% of those with a bachelors or advanced degree. Mean wage/salary income is $62,000/year for manager and professionals, versus $23,000/year for others. Rate of public assistance receipt is 0.3% among managers and professionals and 1.6% among others.

[2] Mean wage/salary income is $54,500 for those with a degree and $22,500 for those without. Multiplied over a 43 year career for those with a degree and a 47 year career for those without.

college entry and college completion, an increased probability of being in a professional career or managerial role, an increase in individual earnings and family income, and a decrease in poverty and receipt of public assistance.

These findings are highly relevant to current policy debates in the U.S. Since the national legalization of abortion in 1973 (via the Supreme Court decision *Roe v. Wade*), abortion access has continued to be a highly politicized issue. Parental involvement (PI) requirements began reducing access of minors almost immediately following *Roe*. In 1989, PI laws began expanding geographically and, three decades later, continue to expand. Even for adult women, access is constantly in flux due to changes in laws governing gestational limits, waiting periods, and ultrasound/counseling requirements, as well as targeted regulation of abortion providers (TRAP laws) that result in clinic closures and increased clinic congestion. For women who are already economically disadvantaged, accessing an abortion has become less and less feasible, as it is often not covered by Medicaid, may require traveling and possibly waiting/lodging at the distant location, and may require time off work and/or childcare. Regardless of whether Roe is upheld or overturned, many existing barriers make abortion inaccessible to some women today. For these women, lessons learned from legalization decades ago are still highly relevant today.

While many studies have documented the impact of abortion access on abortion use and birth, few have examined economic impacts on women. This study updates and expands the findings of this growing literature.

The remainder of the paper is organized as follows. Section 2.1 provides a brief overview of the history of legislation surrounding abortion access in the U.S. 2.2 discusses in detail the existing evidence regarding abortion access and economic outcomes. Section 3 provides details on the data for both legal access and individual outcomes. Section 4 describes the analysis and presents the results for the impacts of abortion access on teen birth and early birth. Section 5 presents the main analysis and results for women's economic outcomes, and Section 6 concludes.

2 Background

2.1 Legal history

Prior to the nineteenth century abortion before quickening was legal (and openly advertised) in the United States. Anti-abortion laws began in the 1820's and criminalization accelerated in the 1860's. In 1873, the Comstock Law prevented publication of information relating to abortion, contraception or sexually transmitted infections. By 1910 violation of this law could result in imprisonment, and nearly every state had specific anti-abortion laws.

The abortion reform movement in the U.S. began in the 1960's. "Reform states" decriminalized abortion in cases of rape or incest, or to protect the life or health of the woman. These states included Colorado, California and North Carolina in 1967, Maryland in 1968, five more states that followed in 1969, three in 1970, and one in 1972. In 1970, Hawaii became the first "repeal state" by legalizing abortion without such restrictions. Other states joined the repeal movement including

Alaska, New York, Washington and California (1970), and the District of Columbia (1971).[3] In 1973 the Supreme Court's ruling in *Roe v. Wade* made abortion legally available without restriction to adult women throughout the U.S.

Abortion access for adolescents and young women is affected by a number of factors. *Roe* gave access to women above the age of majority, which varied by state in 1973. Ages of majority were 21 in all but three states in 1970; these changed rapidly between 1970 and 1975, in most cases lowering the age of majority to 18, owing to both the the 26th Amendment in 1971 (allowing those aged 18+ to vote) and the draft for the Vietnam war. State-level changes in the age of majority opened access to women aged 18 to 21. In addition, some states had previously passed medical consent laws that allowed pregnant minors to consent to medical care. In these states, the passage of *Roe* meant that minors inadvertently had abortion access in these states as well. As a result, some states passed regulations requiring parental consent or parental notification for minor's abortion access. Over time, laws requiring parental involvement increased; beginning with the Supreme Court ruling *Planned Parenthood vs. Casey* in 1992, parental involvement laws were widely expanded.[4] All of these factors combined to create a complex, tiered system of access for minors that varied by age, state, and year. The share of states with various minimum ages for confidential access are shown in figure 1.

It is worth noting that this period of rapid change in abortion access overlaps with changes in contraception access that also occurred at the state-year-age group level. The FDA approval of *Enovid* in 1960, the first hormonal contraceptive pill, increased contraceptive accessibility and ease of use for women across the U.S. As with abortion, women faced a patchwork of laws governing access to the pill. Comstock laws prevailed in 16 states in 1960, preventing legal access to the pill even for adult women. As Comstock laws were repealed, adult women gained access in all but 4 states by 1965, though the last Comstock law was not repealed until 1974. For women under age 21 in state-years without Comstock laws, confidential access depended on the age of majority in the state at the time, though in some cases regulations specific to family planning allowed minors (or minors above a specified age) to consent. As a result, the age of consent for family planning ranged from 14 to 21, and many cases existed of no minimum age. The share of states with various minimum ages for confidential contraceptive access are shown in Appendix Figure A2.

2.2 Existing evidence

Numerous economic studies examine the impact of abortion access and/or public funding for abortion on medical or public health indicators of interest. These focus primarily on abortion

[3] In 1969 the California Supreme Court struck down an abortion statue that made abortion without restriction *de facto* legal in California in 1969, though official repeal did not occur until 1970. In the District of Columbia, abortion was legal with restrictions since 1901, though some sources document evidence that restrictions were purely *de jure* and not *de facto*, indicating that unrestricted access may have been available in DC prior to repeal in 1971.

[4] The *Planned Parenthood vs. Casey* ruling indicated that laws could not place an "undue burden" on women seeking abortions. Because "undue burden" was not clearly defined, many states determined that this allowed parental involvement laws. Appendix Figure A1 presents the number of states with parental involvement laws over time.

use[5] and births,[6] but also examine impacts on contraceptive use,[7] pregnancy,[8] and abortion timing.[9] Some studies also consider social outcomes, such as marriage timing.[10] A growing body of work also examines impacts of women's abortion access on the next generation, both as children, including infant mortality, having a single-parent, living in poverty, or relying on public assistance,[11] and as adults, including teen or unwed birth, educational attainment, crime, incarceration, employment, poverty, and public assistance.[12] These studies document a reduction in childhood poverty, which may seem to imply that access also reduced the number of mothers living in poverty. However, as many of the studies of child outcomes state, much of the effects on the next generation arise from selection effects. That is, fewer children are born to disadvantaged women, generating better average outcomes among the resulting cohort, even if no individual's situation has actually changed. Whether abortion access can improve the economic welfare of women remains an open question.

A small body of work has examined the impact of abortion access on women's economic outcomes. Amador (2017) presents a dynamic life-cycle model of women's decisions regarding contraceptive use, abortion use, schooling and labor supply decisions. After validating the model using data from the National Longitudinal Survey of Youth (NLSY97) and abortion provider data from Guttmacher Institute, Amador uses the model to simulate the impacts of abortion access. The model predicts that a total elimination of abortion access would reduce women's educational attainment by 4.9% and reduce women's college degree attainment by 5.6%, lowering lifetime earnings by 2%. These population-level effects mask much larger simulated impacts on the subset of women who would have had an abortion in their lifetime if it were available (42% of women). For these women, schooling is reduced 13.2%, college degrees 14.3% and lifetime earnings 4.6%.

The predictions of Amador are corroborated by evidence from Angrist and Evans (2000) and Kalist (2004), who show that legalization of abortion in the 1970's increased educational attainment and employment, particularly for black women.

Angrist and Evans (2000) (AE) focus on pre-Roe variation in abortion access measured as the years of exposure to abortion access between the ages of 15 to 19, based on year of birth and state of residence.[13] They use Census data from 1980 and 1900 and control for birth cohort and state fixed effects. Their results indicate that having abortion access for 3 out of the 5 years of adoles-

[5] Blank, George and London (1996); Levine, Trainor and Zimmerman (1996); Haas-Wilson (1996); Meier et al. (1996); Joyce and Kaestner (1996); Ellertson (1997); Haas-Wilson (1997); Cook et al. (1999); Morgan and Parnell (2002); Levine (2003); Joyce, Kaestner and Colman (2006); Gius (2007); Colman, Joyce and Kaestner (2008); New (2011); Medoff (2014); Myers and Ladd (2017); Lindo et al. (2017); Grossman et al. (2017); Fischer, Royer and White (2018)

[6] Kane and Staiger (1996); Levine, Trainor and Zimmerman (1996); Haas-Wilson (1997); Levine et al. (1999); Cook et al. (1999); Angrist and Evans (2000); Morgan and Parnell (2002); Levine (2003); Joyce, Kaestner and Colman (2006); Ananat, Gruber and Levine (2007); Guldi (2008); Colman, Joyce and Kaestner (2008); Borelli (2011); Lahey (2014); Medoff (2016); Myers (2017*b*); Myers and Ladd (2017); Fischer, Royer and White (2018)

[7] Sabia and Anderson (2016); Fischer, Royer and White (2018)

[8] Levine (2003); Colman, Joyce and Kaestner (2008); Medoff (2010)

[9] Colman and Joyce (2009)

[10] (Myers, 2017*b*)

[11] (Gruber, Levine and Staiger, 1999)

[12] (Donohue and Levitt, 2001; Donohue, Grogger and Levitt, 2009; Ananat et al., 2009; Whitaker, 2011; Ozbeklik, 2014)

[13] They find no impacts of differential abortion access post-*Roe*.

cence reduced teen births by 5% for white women and by 8-10% for black women. This exhibited no significant downstream impacts for white women, but for black women improvements were shown in educational attainment and labor force participation. Overall, black women with any access during adolescence saw increases in high school graduation (1.3%), college entrance (3.7%) college graduation (9.6%), and employment status (1.6%). Effects of teen births on the women who had them (as estimated with two-stage least squares, instrumenting teen births with abortion access) reduced the individual's probability of high school graduation by 29%, college entrance by 60%, and employment status by 36%.[14] They find no significant impacts on poverty status.

Kalist (2004) conducts a similar analysis to AE, focusing exclusively on full time working status. Relying on the Current Population Surveys from 1968-1972, he also includes state and year fixed effects. He finds that abortion access increased full time working status of women aged 15 to 44 by 5.7 percentage points (roughly a 17.5% increase) among black women, but not significantly among white women.[15]

Two other studies examine the impact of more recent changes in abortion access. In an unpublished dissertation, Borelli (2011) examines the impact of exposure to parental involvement laws during adolescence in the 1980s and 1990s. Her primary outcome of interest is completed fertility, however she also estimates the impact on educational outcomes measured at ages 21 to 32, controlling for fixed effects for state-of-birth, year-of-age, and five-year birth cohort. Her analysis does not control for contraceptive access. She finds that parental involvement laws reduced the probability of black women completing high school by 2 to 4% and reduced their probability of entering college by 5 to 7%. Effects on college entry were also significant for white women but much smaller (<2%).

Foster et al. (2018) conducted a prospective study (the "Turnaway Study") to examine the impacts of abortion access on a range of outcomes, relying on clinic-specific gestational limits. The authors compare outcomes for women who sought and received an abortion just before the clinic's gestational limit to outcomes for women who sought an abortion but were denied based on a gestation just past the clinic's limits. Some economic outcomes are considered among the broader set of outcomes examined. The researchers find that women who were denied wanted abortions are more likely than receiving women to be unemployed six months later, and have higher rates of poverty and public assistance reliance 4 years later. Miller, Wherry and Foster (2020) extend the Turnaway Study by connecting study participants to their credit reports. They find that women who were denied wanted abortions were more likely to XXX 4 years later.

The work presented here contributes to this growing literature in several ways. First, it improves upon the legal coding of abortion access that was employed in earlier studies by differentiating between restricted and unrestricted access and employing more accurate dates of im-

[14] 2SLS estimations on college graduation are not reported.

[15] Like AE, Kalist's analysis also shows no significant impact of *Roe.* By my interpretation, his triple difference results indicate that the effects of *Roe* on labor force participation of black women in non-repeal states was 0.0093 (not significant), which is the sum of coefficients: $roe + (roe \times black) + (roe \times norepeal) + (roe \times norepeal \times black)$. Kalist incorrectly interprets the coefficient on $roe \times norepeal \times black$ (0.069) as the effect of *Roe* on black women in non-repeal states and concludes that there was a significant effect of 6.9%.

plementation.[16] Second, I differentiate between confidential access and access that requirement parental involvement, a critical difference when focusing on adolescence. Third, it is the first study to examine the impact of abortion access on women's economic outcomes while controlling for contraceptive access. This is an important contribution given the current debate in the literature regarding whether access to contraception or abortion is the more important mechanism driving changes in women's fertility, education and labor force participation through the 1970's. While several prominent studies documented the important role of early legal access to the pill (Goldin and Katz, 2002; Bailey, 2006, 2013), Myers (2017*b*) provides evidence that these studies failed to adequately control for abortion access and her analysis shows that young women's access to abortion had a far more important role in changing their fertility and marriage patterns than their access to contraception. Finally, this work goes beyond documenting impacts on education and work behavior to also show long-run impacts on occupational choice, career advancement, earnings, poverty, and reliance on public assistance.

While taking an historical perspective, the findings presented here have significant implications for policies today. It is unlikely that the U.S. will return to the low levels of abortion access that prevailed prior to *Roe*. Even if Roe is overturned, state-level legalization, as well as internet-based access to medication abortion will ensure that overall access will be higher than in 1972. However, women with fewer economic resources may not be able to pay out of pocket or travel to another state to access abortion, given the required travel costs, time off work, and foregone wages involved. For some groups of women, abortion may become (or may already be) unattainable. For these women, the findings presented here offer evidence that their lack of access will likely contribute to furthering their economic disadvantage. The natural experiment of gradual increases in access provide evidence that access has a strong causal impact on women's education, career outcomes, income and poverty.

3 Data

3.1 State-by-year legal data

Information on the status of legal access to contraception and abortion is drawn primarily from Myers (2017*a*). For each state-year combination from 1960 to 1992, I record the minimum age at which legal access to each type of family planning is available, and separately the age at

[16] AE takes as treated states the 15 reform and repeal states as described by Sklar and Berkov (1974), which do not include Georgia, Florida or the District of Columbia, each of which offered some level of abortion access prior to *Roe*. Second, they treat repeal and reform states as the same level of access, when reform states actually offered a much lower level of (restricted) access than repeal (unrestricted) states. Kalist improves upon AE by focusing on the 5 repeal states in the pre-*Roe* era (rather than combining the reform and repeal together). However, both analyses treat all repeal (or reform) states as "turning on" at the same time (1986 in Kalist, 1970 in AE). In reality, only 7 of these 18 states had a change of access in 1970, with some as early as 1967 and others as late as 1972. Grouping states into a single implementation year does not utilize all available variation and may introduce non-random measurement error.

which confidential access was available.[17] Confidential access is defined as not requiring consent, notification, or any other involvement from one's parents. I construct variables that contain the minimum age at which the described legal access was available in a given state and year: $Restricted^{AB}$(legal access to abortion only in cases of rape or incest, or in cases in which a birth would put the life, physical or mental health of the woman at risk; regardless of whether parental involvement is required or not); PI^{AB}(unrestricted legal access to abortion requiring parental involvement); $Confid^{AB}$(unrestricted legal access to abortion that is confidential); PI^{CPT} (access to contraception requiring parental consent); $Confid^{CPT}$ (confidential access to contraception). For each type of family planning (AB vs CPT) these categories are mutually exclusive and exhaustive.

Figure 2 shows how access to confidential abortion changed over time. Access for women aged 21+ began (with restrictions) in 1967. In 1972, just prior to *Roe*, 42% of women aged 21+ had legal access, though most of this access was restricted. Beginning in 1973, all women aged 21+ had unrestricted, confidential access. For women aged 18 to 20, non-negligible access begins in 1970 (for just 13% of women), but rises to 35% by 1972. With many states lowering the age of majority to 18 around the same time, the access for 18 to 20 year olds is virtually universal following *Roe*. Confidential access for 15 to 17 years olds is much lower, rising to 19% before *Roe*, peaking at 78% in 1980, and then declining to 51% by 1992.

I note that while historical records of legislation are available, it is not always possible to know with certainty how various laws were implemented at the time. Implementation is subject to court rulings, orders by Attorneys General, and the general awareness and understanding of the law by providers. In most cases, I have recorded the minimum age as written in the law; only in clear and extreme cases have I adjusted this to reflect *de facto* rather than *de jure* legal access (see details in the Appendix).

I undertook a careful cross-checking of the legal coding employed in Myers (2017*b*) against the information provided in Myers (2017*a*). Our coding differs in a number of cases because I made a different decision about how to code an ambiguous environment, and in limited cases due to apparent coding errors on the part of Myers. These differences are detailed in the Appendix.

Finally, I note that the set of values originally taken by the legal variables is

$$s = \{0, 12, 14, 16, 17, 18, 19, 20, 21, 999\}$$

Zero indicates there is no minimum age; for example, if contraception is legally available at all, a girl of any age would be able to access it with parental consent. 999 indicates that the legal environment did not apply to anyone; for example $Restricted^{AB}$ only applied prior to *Roe v. Wade*, and only in a limited number of states.

In order to be allowed to merge the legal data with the confidential individual-level data (discussed below), I was required to prevent the identification of individual states. Therefore, in the final data the legal variables take values from the set $s' = \{16, 18, 19, 20, 21, 999\}$, where 16 indi-

[17] My legal data end in 1992, the year of the *Planned Parenthood vs. Casey* ruling, which opened the way for significant increases in parental involvement laws.

cates any age 16 or younger (including no minimum age), 18 indicates age 17 or 18, and other values indicate specific ages, or not applicable.

For cases taking a value of 16, the vast majority are cases of no minimum age (96% for $Confid^{AB}$; 93% for $Confid^{CPT}$). For cases taking a value of 18, these are almost entirely cases of access at age 18 (except 2 cases out of 1,683 state-by-year legal environments).

3.2 Individual-level data

I employ data from the National Survey of Family Growth (NSFG), which includes detailed histories of pregnancy and birth, as well as outcomes of interest such as education and workforce status. The NSFG includes multiple cross-sectional surveys that are nationally representative of women aged 15 to 44. I do not employ the first two cycles collected in 1973 and 1976, as they do not include unmarried women in the sampling frame. I employ cycles 3 through 6 collected in 1982, 1988, 1995, and 2002. These include women born between 1937 and 1987. I exclude women born in years later than 1967, as discussed below.

For each woman, I observe the year of her first pregnancy, as well as whether it was intended or wanted at the time. In addition to standard background and demographic information, I also have information on educational attainment, employment status in the week prior to the interview, household income, and poverty status. I do not observe her state of residence during her teenage years. However, I was granted use of confidential data via the Center for Disease Control's Research Data Center (RDC) in order to access information on her state of residence at the time of the interview.[18] Edlund and Machado (2015) show that, among women interviewed at ages 20 to 44, state of residence at interview is highly correlated with state of residence during adolescence; in fact it is a better predictor than state of birth.

For Hispanic women residing in the U.S. during these data cycles who were born 1937 to 1967, Census data indicate that fewer than half were born in the U.S.[19] Foreign-born status of an individual is not available in cycles 3 and 4 of the NSFG, however, data from cycles 5 and 6 confirm that 52% of Hispanic women in the sample are foreign-born. As such, for Hispanic women in this sample, the assumption that place of current residence matches the place of residence during adolescent is a much less reliable assumption. For consistency across the cycles, Hispanic women are excluded from this analysis. I note that this excludes 9% of respondents and only 3% of the black respondents, for whom the majority of results are found.

Tables 1 and 2 provide descriptive statistics for the sample employed. The sample includes more than 18,000 women between the ages of 24 and 45, born in years 1937 to 1967 and interviewed in one of the four data cycles employed. More than 7,000 of these women report a pregnancy before age 20. Employing the relevant sampling weights, the sample represents a population that

[18] Confidentiality processes required that I submit my legal data to be merged with state of residence by the RDC staff, who then masked state identifiers in our merged data for analysis, for use as fixed effects. This process required that I collapse some ages of access as discussed in section 3.1.

[19] My analysis of the Census 5% samples from 1980, 1990, and 2000 indicates that Hispanic women from these birth cohorts were 57% foreign-born (50% in 1980, rising to 62% in 2000).

is 84% white, 68% married, and 12% poor. 45% attended any college, 21% completed college, and 61% were working in the week before the interview. 44% were married before age 20 and 14% were married for the first time within the 9 months following a pregnancy (shotgun marriage).

Figure 3 shows the share of women (by birth cohort) who had their first pregnancy before each age between 17 and 22 for birth cohorts who were aged 15 between 1958 and 1985. Vertical lines mark the approval of *Enovid* in 1960 and Roe v. Wade in 1973. We see that early pregnancy declines for cohorts coming of age in the early 1960s. We see some recovery among cohorts coming of age during the sexual revolution in the late 1960s, with the probability of early pregnancy returning to 1960-levels by 1972 for ages less than 21. We do not see significant increases in early pregnancy following the widespread legalization of abortion in 1973.

Figure 4 shows the analogus shares of women with their first birth before each age threshold. In contrast to pregnancies, we see births to young women beginning to decline in 1967 when the first abortion reforms began. By 1980, the probability of a birth before each age is only a half to two-thirds the probability of a pregnancy.

Figure 5 shows pregnancy intention by age at conception. A pregnancy is considered unwanted if it is reported that she (or he) never wanted to have a pregnancy or she never wanted to have a pregnancy with that partner. A pregnancy is considered unintended if it is reported by the woman at the time of the interview that either she or her partner did not want a pregnancy at the time it occurred, either because pregnancy was unwanted (as defined above) or she (or he) felt the pregnancy was mistimed. Pregnancies at age 15 are 85% unintended and nearly 40% unwanted.[20] At age 19, 60% of pregnancies are unintended and 20% are unwanted. These rates continue to decline until about age 26 and then level off around 25% and 10%, respectively.

Panel A of Table 3 shows reported abortions by pregnancy intention. Very few intended pregnancies are aborted, regardless of age or marital status at the time of the pregnancy. 17% of unintended pregnancies are reported as abortions and 28% of unwanted pregnancies. Differences between teen pregnancies and other pregnancies in this regard are negligible. Overall 15% of teen pregnancies are reported as abortions versus 12% of all pregnancies. For comparison, panel B of Table 3 shows reported miscarriages. Miscarriage rates are comparable across all pregnancy types and are slightly lower in teen pregnancies, as would be expected given that miscarriage risk increases with a woman's age.

Considering information of such a personal nature, it is natural that some misreporting will occur. For example, the rates of unintendedness are likely lower bounds as many unintended births are later rationalized to have been intended. Abortion is almost certainly underreported, with many aborted pregnancies going unreported entirely (which also lowers the measured rate of unintended pregnancy). This is demonstrated by findings that abortion access significantly "reduces" pregnancy, which likely reflects a change in reported pregnancy rather than actual pregnancy. Therefore, I rely on the unconditional occurrence of a birth as the first stage outcome of

[20] I note some may feel at age 15 that they want to never have a pregnancy and may change their minds about this later. As such, high levels of unwantedness do not necessarily indicate a high share of women who never want to have a birth.

interest, which is significantly less likely to suffer from such reporting bias. However, in order to estimate the impact of abortion access for those who need it, I also conduct sub-sample estimations of economic impacts, limiting the sample to women who had early pregnancies. Given the potential misreporting in pregnancy, I present both the unconditional and conditional samples for each estimation.

A key question is whether the potential misreporting can induce bias in the main estimates of interest, and if so, in what direction? If women who do not report their aborted pregnancies (those choosing to hide or forget that it happened) are those who had the greatest impacts from abortion access, then the sub-sample estimates of economic impact will be attenuated toward zero. Only if those who hide or forget aborted pregnancies has less to gain from abortion than others (which seems doubtful) would the impacts estimated here be upward biased by the misreporting.

4 Impacts on early births

For each individual, I calculate her legal and confidential access to family planning during the periods of her life from age 15 to age k separately for $k \in [18, 24]$. For some women, this period includes years prior to 1960. Because access to abortion and contraception were extremely limited in all states prior to 1960, all years before 1960 are coded as no access. For some women, this period includes years after 1992, and these women (born later than 1967) are excluded from the analysis.

I estimate

$$\begin{aligned} B^k_{ics} = &\alpha_1 + \beta^k_{AC} Confid^{AB,k}_{cs} + \beta^k_{AL} PI^{AB,k}_{cs} + \beta^k_{AR} Restricted^{AB,k}_{cs} + \beta^k_{PC} Confid^{Pill,k}_{cs} \\ &+ \beta^k_{PL} PI^{Pill,k}_{cs} + \vec{X}_{ics}\vec{\gamma} + \nu_c + \nu_s + \varepsilon_{ics} \end{aligned} \quad (1)$$

where B^k_{ics} is a birth occurring before age k to individual i from birth cohort c residing in state s. $Confid^{AB,k}_{cs}$ is the percentage of years between age 15 and age k during which a woman in state s and birth cohort c had access to confidential abortion. The same definition structure applies to $PI^{AB,k}_{cs}$, $Restricted^{AB,k}_{cs}$ and the indicators of access to contraception, where the meaning of PI and $Restricted$ are as described in section 3.1. For clarity, for any cohort c from state s,

$$\begin{aligned} Confid^{AB,k}_{cs} + PI^{AB,k}_{cs} + Restricted^{AB,k}_{cs} + None^{AB,k}_{cs} = 1 \\ Confid^{Pill,k}_{cs} + PI^{Pill,k}_{cs} + None^{Pill,k}_{cs} = 1 \end{aligned}$$

and $None^{AB,k}_{cs}$ and $None^{Pill,k}_{cs}$ are excluded categories in equation 1. I include individual characteristics in the vector $\vec{X}_{ics}$, including race, age at menarche, and proxies for socioeconomic status – whether her mother completed high school or earned a college degree.

I expect the β coefficients to be negative and possibly significant. An ongoing debate in the literature is whether the explanatory power is greater for the coefficients β_{PC} and β_{PL} or for the coefficients β_{AC}, β_{AL}, and β_{AR}. I compare these sets of coefficients and also conduct an F-test for

joint significance of all β coefficients to determine the suitability of the set as an instrument for early birth.

Equation 1 is estimated for seven values of $k \in [18, 24]$, as presented in Table 4. I find that $Confid^{AB}$ and PI^{AB} have consistently negative and significant impacts on the probability of a birth before age k for $k \in [20, 24]$, ranging in size from 12 to 17 percentage points. There are no statistically significant impacts of contraceptive access. In order to keep presentation of additional results tractable, I select two values of k with which to continue analysis.

The specification for $k = 20$ offers comparability with the primary existing analyses, which rely on teen births at the population level as the outcome of interest. The specification for $k = 24$ considers the broadest range of early fertility that is impacted by the policies, in order to examine the fullest impact of early births on economic outcomes of interest.

In order to narrow the focus to women who potentially experienced a need for abortion, I additionally estimate a version of equation 1 restricting the sample to women who report having a pregnancy before age k. Estimates of β coefficients from this version would indicate the impact of abortion access on early birth among the set of women who had early pregnancies. Each estimation of equation 1 is conducted for the aggregate population, for black women, and for white women.

Table 5 presents estimated β coefficients from equation 1. For the aggregate sample, $Confid^{AB}$ reduces the probability of a teen birth by 0.122 or 46% (col 1). Among black women the estimate is much higher: conditional on teen pregnancy, $Confid^{AB}$ reduces the probability of teen birth by .510, or 58% (col 6). Similarly, for $k = 24$, conditional on an early pregnancy, $Confid^{AB}$ significantly reduces an early birth for black women, by .255 or 28% (col 8). The effects when $k = 24$ do not extend to the aggregate population (cols 3 and 4).

For white women, when conditioning on pregnancy, we see no significant impact of $Confid^{AB}$ on birth for either $k = 20$ or $k = 24$. However, we do see strong effects for white women in the unconditional estimation (.116, col 9) possibly indicating that the underreporting issue causes the early pregnancy sub-sample to be misspecified *more* for white women than other women.

There are several cases where PI^{AB} also significantly reduces births (cols 1, 6, and 9). Abortion access that is restricted to special cases ($Restriced^{AB}$) has mixed impacts, in some cases lowering births (col 11), and in other cases increasing births (cols 2, 7 and 10). One possible explanation for this effect may be that restricted access provides the illusion of access to abortion, which reduced the perceived cost of unprotected sex, but does not provides feasible access for most women.

I also examine the impact of contraceptive access on birth outcomes. The assumed pathway by which access would reduce birth would be by reducing pregnancy, so the unconditional estimates are of primary interest. In the unconditional estimates we see no evidence that contraceptive access (either $Confid^{Pill}$ or PI^{Pill}) reduced births. In fact, among white women there is some evidence that access increased births (col 11). What is interesting are the impacts of PI^{Pill} in the conditional estimations. Given that all the women in the sample for these estimation had an early pregnancy, it is hard to see how contraceptive access would affect their probability of birth.

Nonetheless, we see that the probability of a birth conditional on a pregnancy is significantly reduced for the aggregate sample (col 2). This effect is driven by white women (col 10). This cannot be arising solely through the prevention of pregnancy and as such must arise from a selection effect on who becomes pregnant, which changes the probability of choosing an abortion if available. For example, if contraception access reduces pregnancy for type A more than others, and type A are also less likely than others to abort an unintended pregnancy, then contraceptive access will shift the pool of women with early pregnancies to be more likely to abort and therefore less likely to have a birth.

In summary, I find that for white women, abortion access (both $Confid^{AB}$ and PI^{AB}) has significant effects on the probability of teen birth but not on the probability of a birth before age 24. For black women, effects are significant and large for both teen birth and birth before age 24, but only among the sub-sample of women who had a pregnancy at that time. Access to restricted abortion reduces births only among white women when $k = 24$. Access to contraceptives reduced births only among white women who had teen pregnancies (due to a selection effect). The F-statistics indicate that the five policy environment indicators are a strong instrument for teen birth for white women, both in the full sample and conditional on pregnancy. For black women, the policy instruments are valid for both teen births and births before age 24, but only among the subset of women who became pregnant.

5 Impacts on economic outcomes

As estimations of equation 1 indicate a significant impact of abortion access on early birth, I next consider whether such access also exhibits impacts on women's economic outcomes. I estimate this both in reduced form and 2SLS estimations.

5.1 Estimation

The reduced form analysis estimates

$$\begin{aligned} O_{ics} =& \alpha_1 + \beta^k_{AC} Confid^{AB,k}_{cs} + \beta^k_{AL} PI^{AB,k}_{cs} + \beta^k_{AR} Restricted^{AB,k}_{cs} + \beta^k_{PC} Confid^{Pill,k}_{cs} \\ & + \beta^k_{PL} PI^{Pill,k}_{cs} + \vec{X}_{ics}\vec{\gamma} + \nu_c + \nu_s + \varepsilon_{ics} \end{aligned} \quad (2)$$

where $O_{ics}$is an economic outcome of interest, and all other elements are as defined for equation 1. The outcomes of interest include: years of education, any college, completing college, working last week, working in a professional occupation, working in a managerial role, individual earnings, family income, poverty status, and receipt of food stamps.[21] β_{AC} indicates the change in the

[21]Educational attainment indicators are proxied using the highest grade attended. Professional occupations as defined by IPUMS include architects, engineers, scientists, doctors/nurses/pharmacists/physician assistants, therapists, professors, teachers, counselors, librarians, social workers, clergy, lawyers/judges, writers/editors, artists, and athletes. Managerial roles as defined by the Census Bureau include legislators, officials in public administration or protective services, managers, administrators, postmasters, funeral directors, accountants/auditors, underwriters, analysts, spe-

outcome of interest for a woman with confidential abortion access in all years from age 15 to age k, as compared to a woman with no access during that period of life. All changes discussed below are relative to women with no access; percent effects are relative to the mean for the estimation sample.[22] I expect β coefficients to be negative for education, career, and income indicators, and positive for living below the poverty line or receiving food stamps.

I also estimate the impact of an early birth on these outcomes, using abortion (and contraceptive) access as an instrument in a two-stage least squares (2SLS) estimation. This method predicts an individual's probability of an early birth using all five exposure variables in equation 1. This predicted probability is employed as the independent variable of interest in the second stage, estimated as

$$Y_{ics} = \alpha_2 + \delta^k \hat{B^k}_{ics} + \vec{X}_{ics}\vec{\gamma} + \nu_c + \nu_s + \varepsilon_{ics} \tag{3}$$

where $\hat{B}_{ics}$is the predicted value of B_{ics} from equation 1. δ is expected to be negative for all outcomes except poverty and food stamps. This method estimates the impact of having an early birth (as exogenously predicted). This is in contrast to the reduced form method (RF), which estimates the impact of abortion (and contraception) access on all women. The 2SLS method isolates the impacts operating through the pathway of early birth, where as RF measures impacts through all channels. If we assume that early birth is the primary channel of impact, we may expect the 2SLS estimates to be larger in magnitude than the RF estimates, as the RF estimates (on all women) would be attenuated by those without pregnancies. On the other hand, if there are pathways other than birth through which abortion access affects economic outcomes (such as expectations, planning and investment in human capital), then we may expect the magnitude of the RF estimates to be of comparable size. In either case, we expect the 2SLS estimates to be of opposite sign than RF estimates and, given the fact that the independent variable of interest in the second stage equation is estimated, 2SLS estimates will be less precisely estimated.

5.2 Results

Tables 6 through 8 present estimates of β_{AC} and β_{AL} from equation 1 and δ from equation 3. To present the results succinctly and facilitate comparisons, the coefficients are presented without standard errors (but with stars for statistical significance). Complete tables with all β coefficients, standard errors, observation counts, and F-statistics for a joint test of the five β coefficients are presented in the Appendix.

Education

In the full sample (Table 6), we find that abortion access has a significant impact on education for women who have an early pregnancy (before age 24). For these women, access to abortion from

cialists, purchasing/promotions agents, buyers, and inspectors. Earnings and income are standardized to 2018 USD.

[22] In my next round of analysis at the RDC I will estimate the means of dependent variables for women with no access, which is the relevant benchmark for calculating percentage effects.

age 15 to 23 increases years of education by 0.80 (6%), increases the probability of entering college by 0.21 (41%) and increases the probability of completing college by 0.18 (72%). For each outcome, 2SLS estimates are two to four times as large but not statistically significant.

Among black women (Table 7) the results are much larger. Access to abortion before age 20 and before age 24 both have a significant impact on the education of black women, both among those with pregnancies and when estimated among all black women. Among women with pregnancies before age 24, abortion access increases educational attainment by 2.5 to 3 years (20%). This is reflected in a 0.5 to 0.8 increase in the probability of entering college (130-200%) and a 0.3 to 0.5 increase in the probability of completing college (a 2 to 3-fold increase). The 2SLS estimates are two to three times larger and are statistically significant when employing the full sample of black women.

Among white women there are almost no effects on educational attainment. There is a suggested impact on college completion among women with pregnancies before age 24, but the effect is not robust.

Career

In the full sample, we find that abortion access has a significant impact on work status and career advancement for women who have a pregnancy before age 20. For these women, abortion access from age 15 to 19 increases the probability of working (at age 24-45) by 0.27 (38%) and increases the probability of working in a management position by 0.15-0.16 (150%). Among the sample of women with a pregnancy before age 24, we see suggestive impacts on work status and strong impacts on the probability of working in a professional occupation. Their probability of a professional occupation is increased by 0.35-0.37 (a 2-fold increase). For work status, the 2SLS estimates are four times larger than the RF estimates. However, for manager and professional occupations, 2SLS estimates are comparable or smaller. This indicates that non-fertility pathways play a significant role in the impact of abortion access on holding a manger position or having a professional occupation in the future.

Among black women, evidence of impacts on labor force participation are less robust, but abortion access does affect future work status for women with early pregnancies (0.40; 59%). Evidence for impacts on black women's occupation type is very strong. Abortion access under age 20 and under age 24 both significantly impact work in a managerial or professional occupation, both when estimated among women with pregnancies or all black women. For women with pregnancies before age 24, abortion access since age 15 increases managerial positions by 0.18 to 0.28 (a 2 to 5-fold increase) and increases professional occupation by 0.32 to 0.47 (a 3 to 5-fold increase). Among the sample of all black women, the 2SLS estimates of impact on manager and professional occupation are comparable to the RF estimates, or smaller, indicating as noted before that non-fertility pathways are important. However, among those with teen and early pregnancies, 2SLS estimates are 2 to 4 times as large, indicating that, for those with early pregnancies, fertility is also an important pathway by which abortion access affects occupational outcomes.

Among white women with a pregnancy before age 20, abortion access since age 15 increases labor force participation by 0.19 to 0.24 (~30%) and increases managerial roles by 0.21 (a 2-fold increase). Impacts on professional occupations are concentrated among women with pregnancies before age 24, for whom abortion access increase the probability of these occupations by 0.39 to 0.41 (a 2-fold increase). As noted above, the 2SLS estimates indicate significant non-fertility pathways for impacts on occupational outcomes, but not on work status.

Income

In the full sample, we find that for women with a pregnancy before age 20, abortion access increases a woman's earnings later in life by $11,000 to $15,000/year as measured in 2018 USD, about a 37% increase, and increases family income by $6,000 to $10,000/year, a 10% increase. We also find that abortion access before age 20 and before age 24 reduced the chance of living in poverty by 0.05 to 0.10 (50-100%). The effects on poverty estimated among all women; the point estimates are larger for women with pregnancies but are not precisely estimated. Interestingly we find that the fertility pathway is dominant for the effect on family income, with 2SLS estimates 3 times the size of the RF estimates. However, for individual earnings, other pathways are significant, as the 2SLS estimate is much smaller and not significantly different from zero.

Impacts on income and poverty for black women are striking. Across all outcomes and specifications, early abortion access has a large and statistically significant impact of black women's future economic welfare. Focusing for brevity on women with pregnancies before age 24, results indicate that abortion access from ages 15 to 23 increases individual earnings by $23,000 to $28,000/year (75-100%) and family income by $48,000 to $52,000/year (>100%). It reduces the chance of living in poverty by 0.36 to 0.42 (>100%) and the chance of receiving food stamps by 0.39 to 0.52 (a 1 to 2-fold decrease). For the most part, 2SLS estimates are about double the RF estimates for family income and poverty and are 4 to 7 times higher for food stamps; for each of these outcomes, fertility is an important pathway. As noted above, for individual earnings the evidence suggests that non-fertility pathways are also important (2SLS estimates are comparable or smaller in most cases).

Among white women with pregnancies before age 20, abortion access increases individual earnings by $8,000 to $14,000/year (20-40%). There is weak evidence that abortion access before age 24 reduces future poverty, but the effect is marginally significant at the 10%. Overall, impacts on income and poverty for white women are much less robust.

Impacts of contraception access

All coefficients and relevant statistics from the estimation of equation 2 are presented in full in Appendix Tables A2 through A7. Reviewing the estimates of β_{PC} and β_{PL}, we observe the following impacts of access to contraception.

In the aggregate sample, there is weak evidence that contraceptive access affects educational

attainment, work status, and professional status. However, these effects are restricted to samples including only women with teen or early pregnancies. This suggests that any impact of contraceptive access on these outcome is not operating through pregnancy prevention, and must be operating through non-fertility pathways such as expectation and investment. However, as noted, these findings are marginally significant and not robust. There are no impacts on income or poverty in the aggregate sample.

Among the sample of black women, there is more convincing evidence that contraceptive access improved future economic outcomes. Contraceptive access increased years of education by 0.75 to 0.9 (6-7%) and college completion by 0.15 to 0.2 (>100%), which is significant, though smaller than the 2 to 3-fold increase impact of abortion access. Contraceptive access also increased professional status of black women by 0.12 to 0.37 (a 1 to 3-fold increase), which is again significant but smaller than the 3 to 5-fold impact of abortion access. Finally, contraceptive access may have increased future family income for black women by $13,000 to $17,000/year (30%). Consistent with other outcomes, this effect is smaller than the 100% impact of abortion access.

There are no benefits of contraceptive access observed in terms of the future economic outcomes of white women.

6 Discussion

In this work I rely on state-year-cohort level variation in access to abortion to estimate the impact of access on a range of future economic outcomes. This work improves upon earlier estimates of the impact on education and future work status by accounting for different levels of abortion access (restricted versus unrestricted, and legal versus confidential), by controlling for coincident access to contraception, and by additionally examining impacts among the subset of women with early pregnancies for whom abortion access is most relevant. This work also offers the first evidence regarding the impacts of abortion access on future occupational outcomes, income, and poverty.

I document evidence that abortion access has dramatic impacts on the future economic outcomes of black women. For educational attainment, the estimates are much larger than previously documented. Angrist and Evans (1996) documented sub-population-level increases of 3.7% in college entrance, 9.6% in college graduation and 1.6% in employment status. My sub-population-level estimates indicate a 100% increase in college entrance, a 2 to 3-fold increase in college graduation, and a 44% increase in employment status (though not precisely estimated).

I also document large, robust impacts on occupational, income and poverty outcomes of black women. Access to confidential abortion during ages 15 to 23 increases the probability of holding a management or professional job (6-fold and 2-fold, respectively), increases individual earning (61%) and family income (92%), and decreases the chance of poverty (98%) and reliance on public assistance (100%).

There is only weak evidence that confidential abortion access impacts the future economic

outcomes of white women. Indications suggest an increase in professional occupation (76%), and possibly a reduction in poverty, though the effect is only marginally significant. Among those who had a teen pregnancy, there is evidence that abortion access improved future employment, earnings, and managerial roles by 33%, 41%, and 2-fold, respectively. Again, these effects are not considered robust.

Given the significant impact of abortion access on births for both black and white women, it is important to consider why the downstream impacts on economic outcomes are so heavily concentrated among black women. Black women have higher rates of unmet need for contraception, higher rates of unintended pregnancy, and report higher use of abortion (Bernstein and Jones, 2019). Lower access to contraception is likely to increase the potential impact of access to abortion. Black women are also more likely to be living in poverty than White women and so generally face greater barriers to accessing reproductive health care and are less able to overcome abortion access restrictions.

One advantage of this analysis is the differentiation between abortion access that is legal for minors with parental involvement and access that is confidential for minors. The effects of these access types are estimated separately. For many outcomes, the impacts of these access types are comparable. Among black women, outcomes for which confidential access is estimated to have a greater impact than access with parental involvement are only college completion and receipt of food stamps. In both of these cases the standard errors do not allow us to reject that the effects of the two access types are the same. I also note that no significant impacts are estimated of access to abortion under restrictions to life or health of the woman. It is worth noting that restricted access makes up a very small share of access types (see Figure 6).

Myers (2017) documents evidence that, for teens and young women, access to abortion has significant impacts on fertility, whereas access to contraception has no impact once abortion access is controlled. Consistent with this, I also find that early access to abortion has more substantial impacts on the future outcomes of women than early access to contraception. Robust measures of impacts of contraception are limited to black women, and are consistently smaller in magnitude than estimates of abortion access.

I also explore whether fertility is the dominant pathway by which abortion access affects economic outcomes of black women. Even for women who never have a pregnancy, access to abortion may change their perception of their control over their fertility, shifting their expectations about their education or career, and changing their investments in their own human capital. As expected, I generally find that reduced form effects of abortion access on economic outcomes are greater among the sample that experienced a pregnancy, at least when examining access before age 24. When considering access before age 20, effects are comparable across the full sample and the sample with pregnancy before age 20. This indicates that expectations and investment are a more significant pathway for younger women; as women age, fertility becomes the dominant pathway through which abortion affects economic outcomes.

Comparing reduced form estimates to 2SLS estimates of the impact of a birth on these out-

comes also sheds light on the pathways of impact. Among black women, the 2SLS estimates of impacts of a birth on education, family income, poverty and receipt of food stamps are two to four times larger in magnitude than the reduced form estimates of the impact of abortion access. However, 2SLS estimates for managerial and professional occupation and individual earnings are comparable to the RF estimates, or smaller. This indicates that fertility is a dominant pathway for many of economic outcomes, however, for individual occupation and earnings, non-fertility pathways are important. This is consistent with a view that a woman's expectations and life decisions have the capacity to impact these individual-level outcomes more-so than family-level outcomes such as family income, poverty, and government assistance.

The effects described here represent the difference in outcomes for a woman with abortion access during all of the critical adolescent and early adult years as compared to a woman with no access during that period. Are these findings relevant for U.S. policy today? Despite the 1973 *Roe v. Wade* decision, many young women in the U.S. today do not have access to confidential abortion or effectively have no access to abortion at all. Relatively affluent young women may be able to travel to states where confidential access is available, but for those who are economically disadvantaged, accessing an abortion may be nearly impossible. This includes a minor without access to a car or the financial resources to travel, and in some cases lodge, out of state. It also includes adults who may live far from the nearest abortion provider and who do not have the financial means to travel. Modern-day restrictions such as waiting periods and targeted-regulation of abortion providers (TRAP) laws increase the burden of seeking time off work, coverage for childcare, and financial means required to travel to a clinic as they become farther away and the duration of the process is lengthened.

The findings presented here document large and robust impacts of abortion access on the future economic outcomes of women, especially black women. While the U.S. is unlikely to ever return to pre-*Roe* levels of abortion (in)access nationally, it continues to be the case that for some women abortion is very difficult or impossible to access. For these women, the economic impacts estimated here are very relevant. Further, from a societal perspective, it is an important finding that barriers to abortion access are hindering the economic success of those who are already economically disadvantaged, and increasing the social burden in terms of public assistance.

Disclosures

The author declares no conflicts of interest, including any commercial associations, employment, personal relationships, academic competition, financial interest, or other connection that might raise any question of bias in the work reported or the conclusions.

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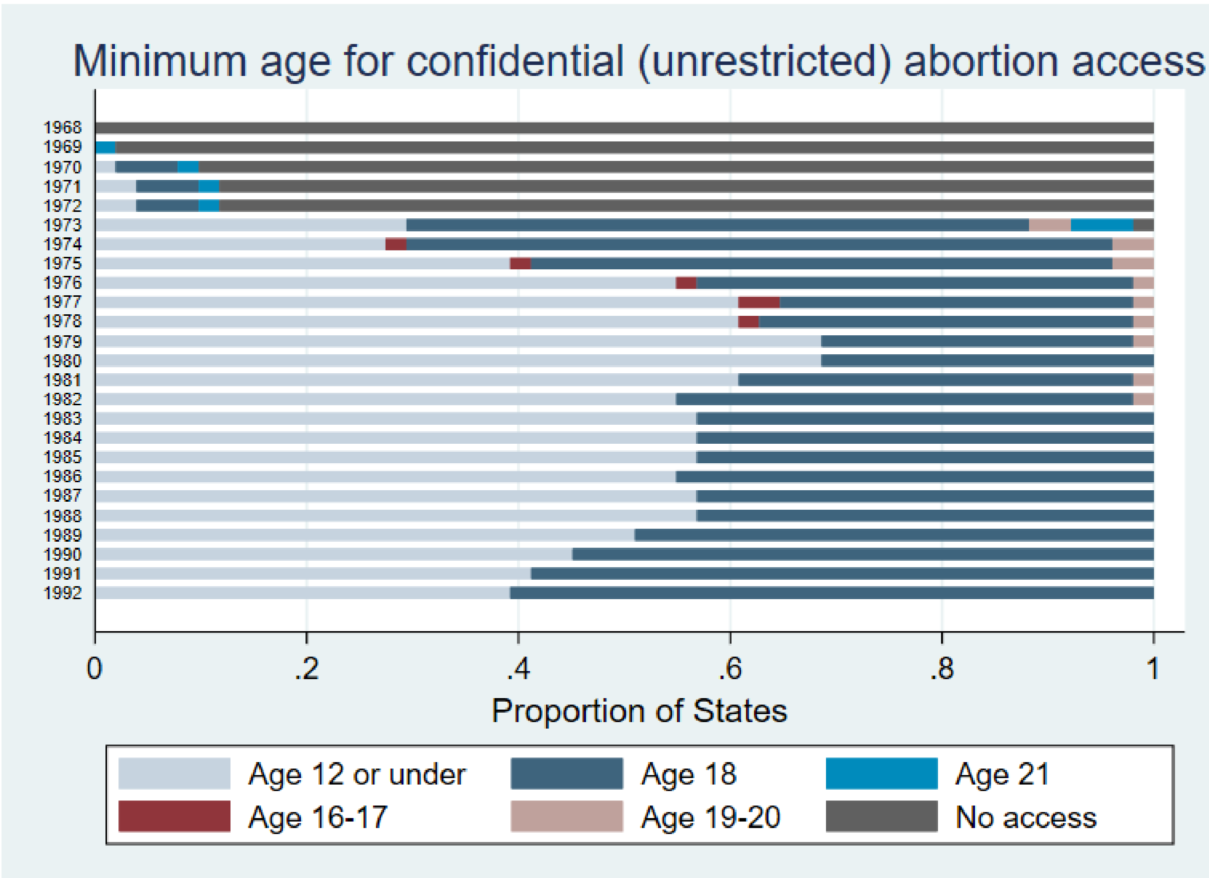
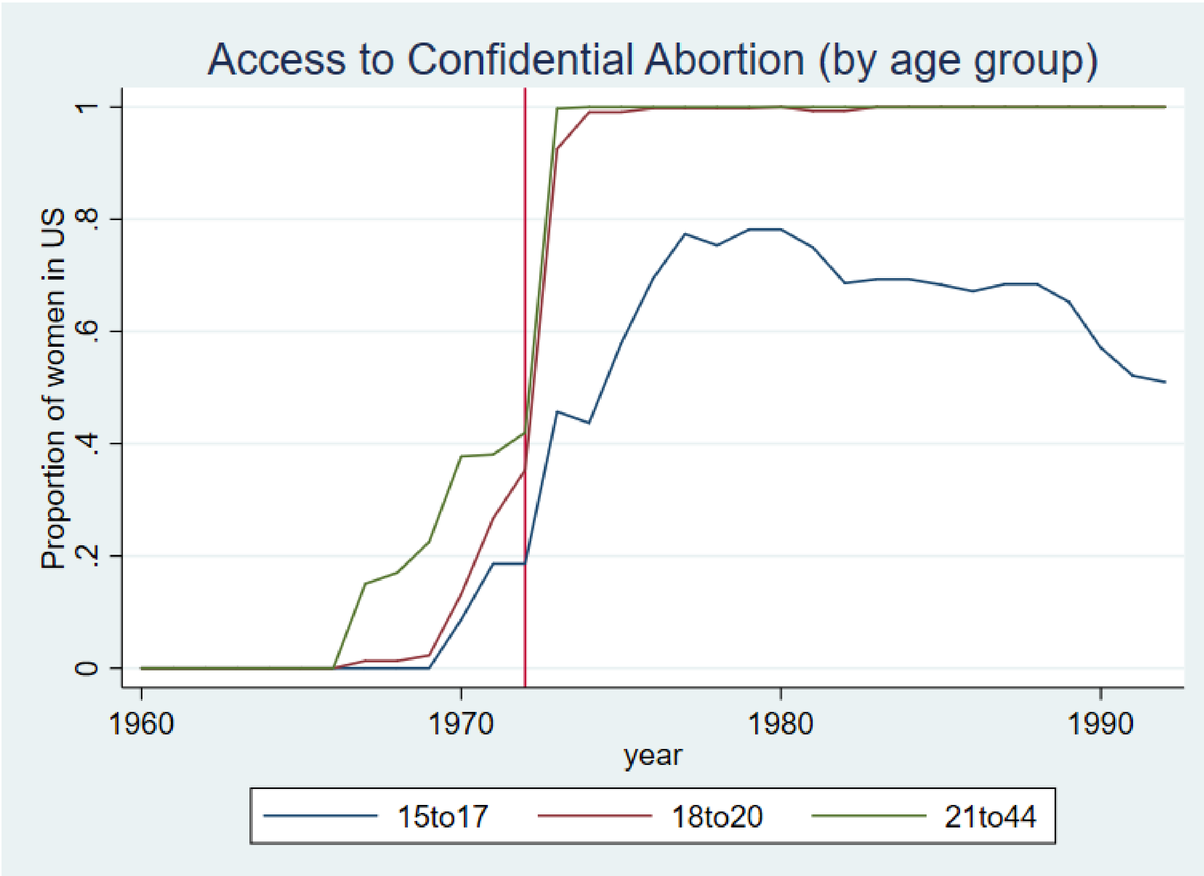
Figures

Figure 1



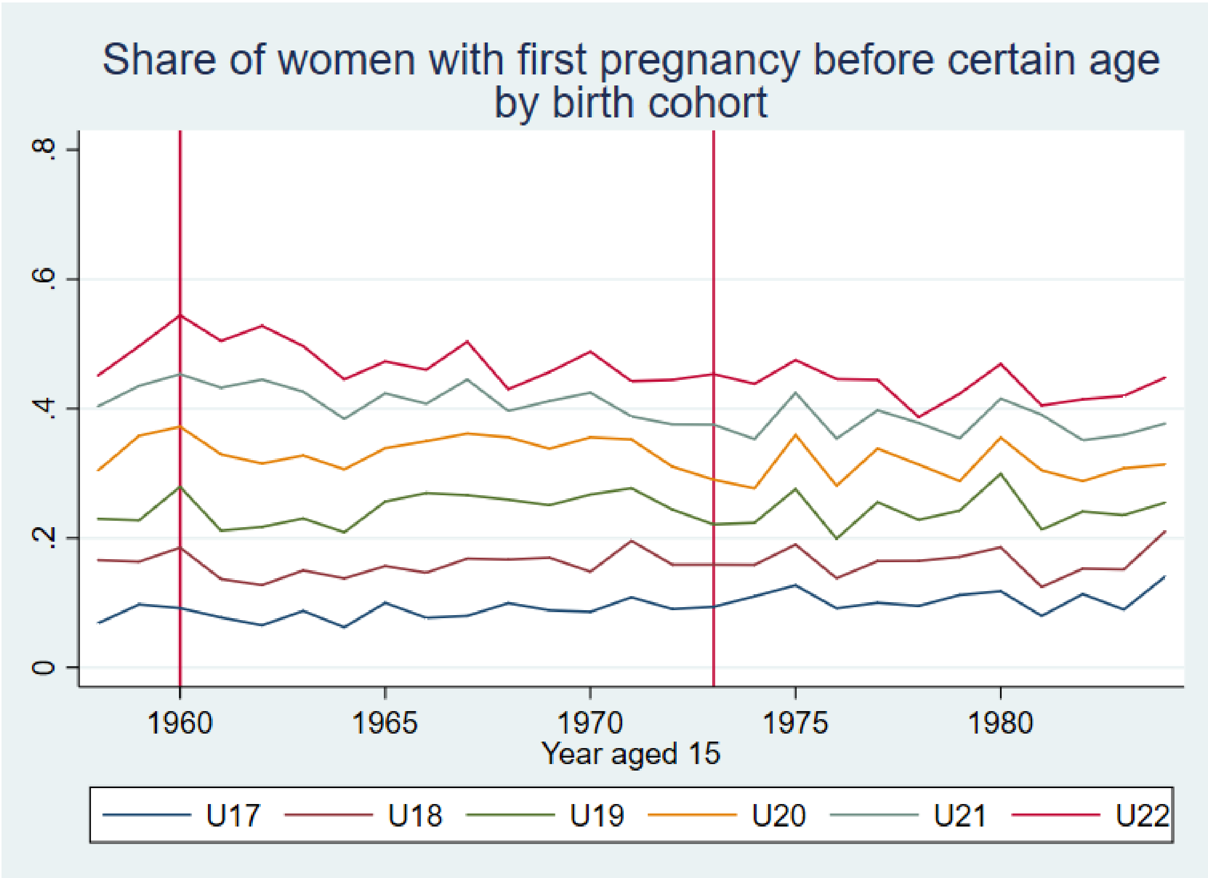
Note: Based on state level, not individual level data. Each bar shows the proportion of states that fell into each age category for the minimum age at which a woman could access a confidential and unrestricted abortion in each year.

Figure 2



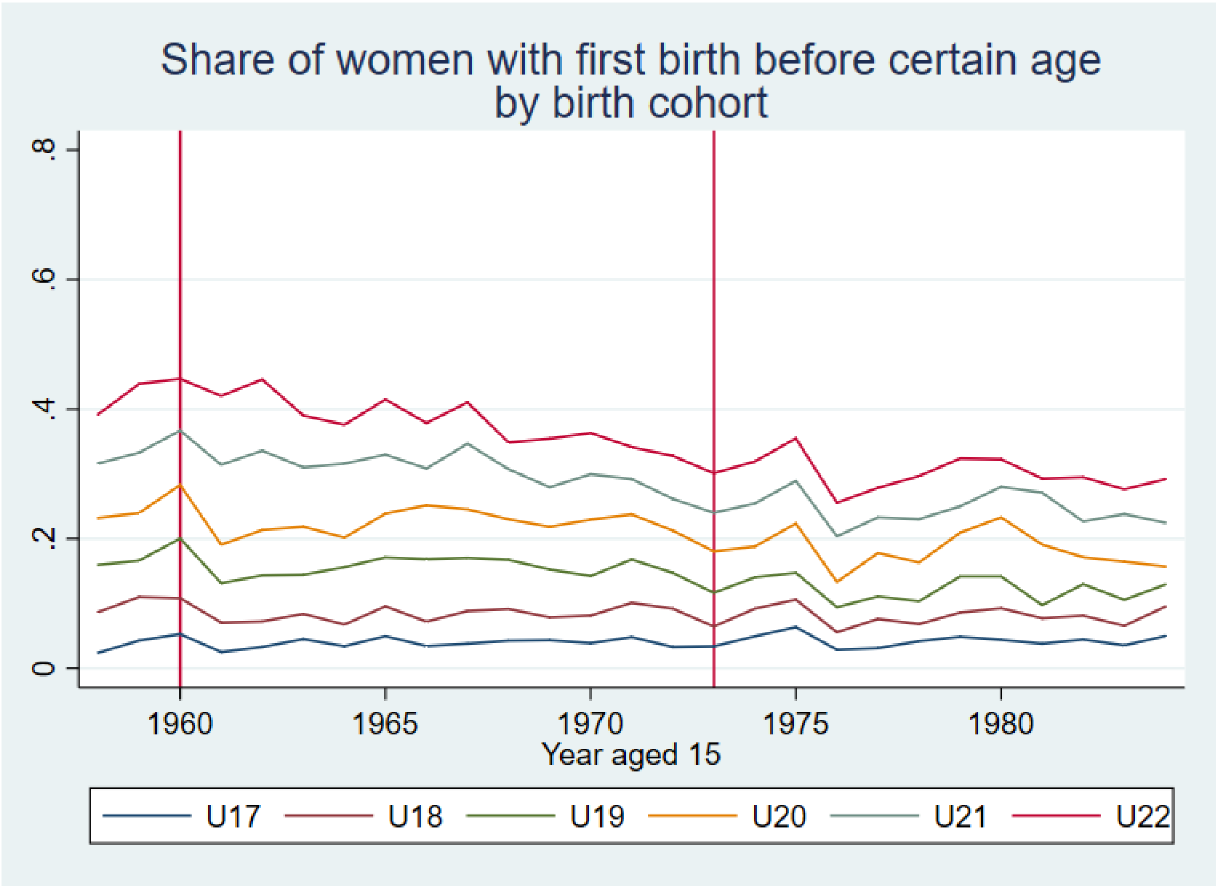
Note: Based on state level, not individual level data. Each state is weighted by its population of adult women in the 1980 census.

Figure 3



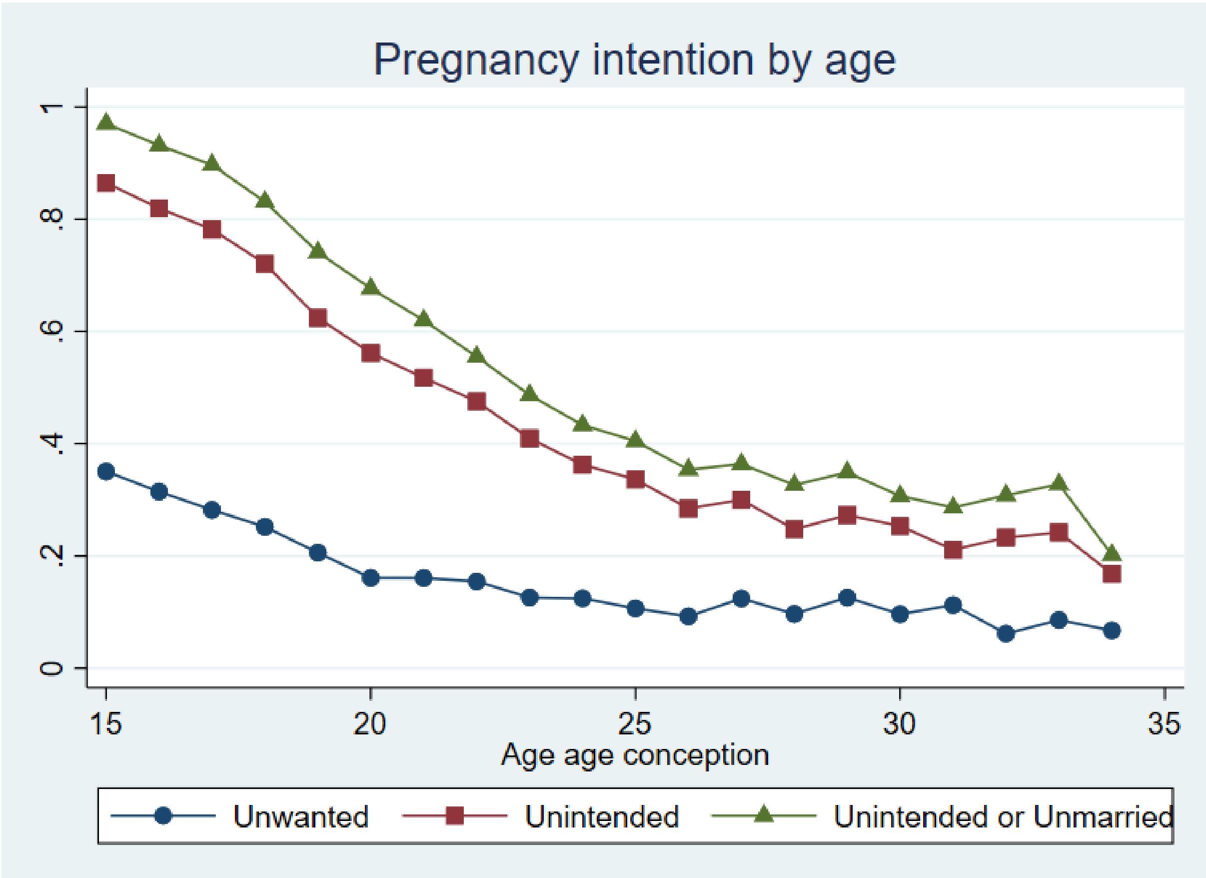
Note: Based on women aged 24 to 45 interviewed in cycles 3 through 6 of the National Survey of Family Growth.

Figure 4



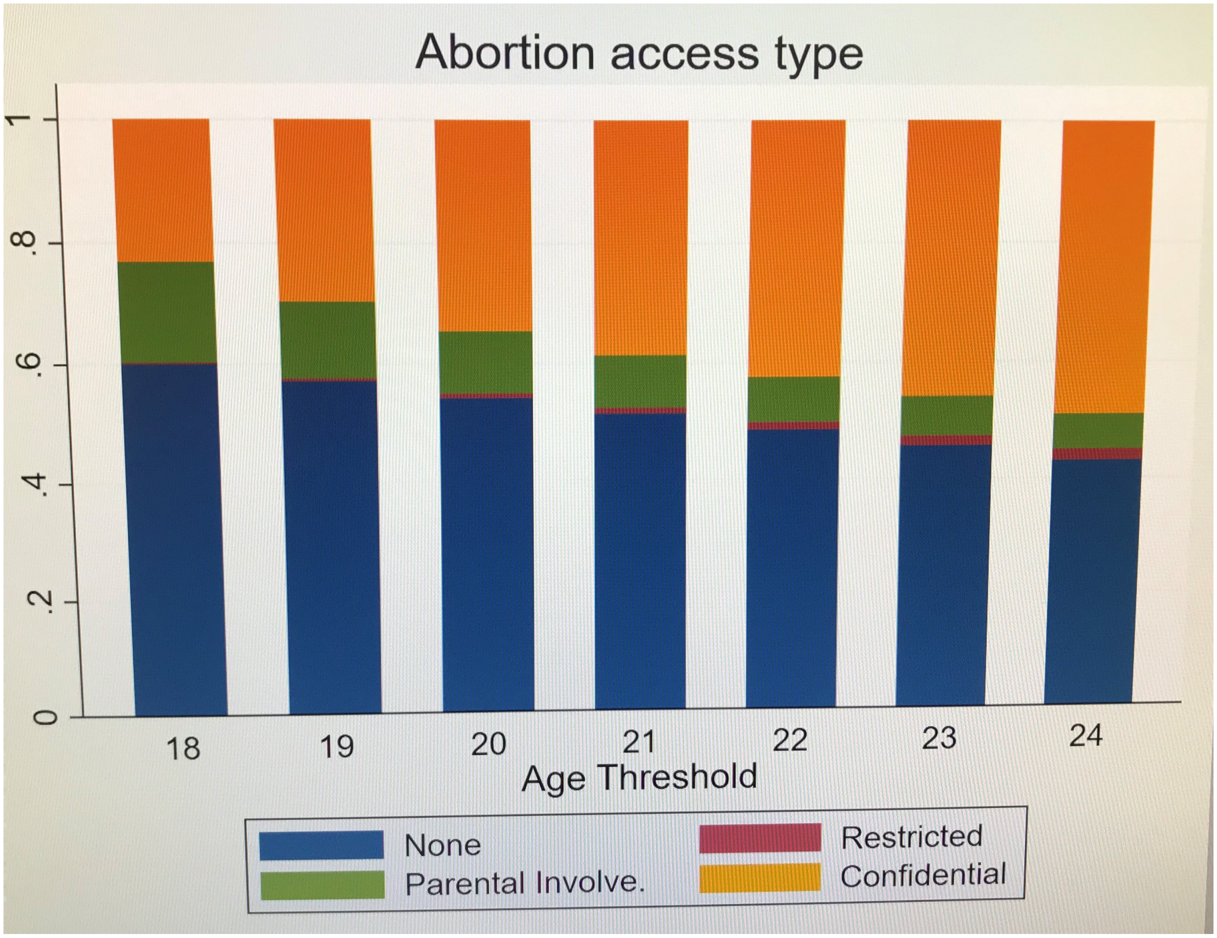
Note: Based on women aged 24 to 45 interviewed in cycles 3 through 6 of the National Survey of Family Growth.

Figure 5



Note: Based on women aged 24 to 45 interviewed in cycles 3 through 6 of the National Survey of Family Growth. For descriptions of unwanted and unintended, see section 3.2.

Figure 6



Note: Based on women aged 24 to 45 interviewed in cycles 3 through 6 of the National Survey of Family Growth. Data were merged with legal coding data based on restricted information about woman's state of residence, accessed through the Research Data Center at the National Center for Health Statistics.

Tables

Table 1: Sample Size

	1982	1988	1995	2002	Black	White	Total
Women	4,597	5,769	6,206	2,080	6,089	11,794	18,652
Women ever pregnant	3,946	4,779	5,313	1,792	5,428	9,755	15,830
Women with pregnancy before k=20	1,970	2,240	2,185	641	3,316	3,496	7,036
Women with pregnancy before k=24	3,172	3,598	3,632	1,044	4,571	6,469	11,446
Minimum birth year	1937	1943	1950	1957			
Mean birth year	1950	1955	1960	1963			
Maximum birth year	1959	1964	1967	1967			
Minimum age at interview	24	24	27	34			
Mean age at interview	32.5	33	35	39			
Maximum age at interview	44	45	45	44			
Mean age in 1970	21	15	10	7			

Note: Samples reflect women aged 24 and older interviewed in cycles 3 through 6 of the National Survey of Family Growth, excluding Hispanic women (see section 3.2).

Table 2: Sample Characteristics

Variable	N	Mean	Std. Dev.	min	max	Means by sub-sample Black	White
Age	18,652	33.46	5.91	24.0	45.0	33.01	33.59
Birth Year	18,652	1953	6	1937	1967	1954	1953
Fertility							
Birth before age 20	18,652	0.26	0.44			0.47	0.24
Birth before age 24	18,652	0.49	0.50			0.89	0.80
If pregnant before age							
Birth before age 20	7,036	0.82	0.38			0.67	0.47
Birth before age 24	11,446	0.87	0.34			0.91	0.86
Race/ethnicity							
Native	18,652	0.03	0.16				
Asian/PI	18,652	0.04	0.19				
Black	18,652	0.13	0.34				
White	18,652	0.80	0.40				
Background							
Mother completed HS	18,652	0.67	0.47			0.45	0.72
Mother completed College	18,652	0.11	0.31			0.06	0.11
Age at menarche	18,642	13	2	6	28	13	13
Education							
Years of education	18,629	13.53	2.30	9	18	12.8	13.6
Completed HS	18,101	0.88	0.33			0.78	0.90
Any college	18,101	0.51	0.50			0.39	0.52
Completed college	18,101	0.25	0.43			0.14	0.26
Work and income							
Working last week	18,652	0.71	0.45			0.68	0.72
Managerial position	18,652	0.10	0.30			0.05	0.11
Professional occupation	18,652	0.17	0.37			0.10	0.18
Individual earnings*	13,905	33.99	23.61	5.31	156.53	31.64	34.39
Family income*	16,985	68.88	32.60	5.31	164.77	49.45	72.05
Below poverty line	18,559	0.10	0.30			0.30	0.06
Receives food stamps	18,496	0.08	0.27			0.26	0.05

Note: Data are from cycles 3 through 6 of the National Survey of Family Growth. Sampling weights applied.

Table 3: Reports of Abortion & Miscarriage by pregnancy intention

A. ABORTIONS	All pregnancies		Teen pregnancies	
	Percent	Number	Percent	Number
Intended & Married	0.4%	22	0.1%	1
Intended & Unmarried	2.4%	35	2.6%	20
Unintended	16.6%	939	15.3%	504
Unwanted	29.0%	919	24.8%	509
Total	12.1%	1915	14.7%	1034

B. MISCARRIAGES	All pregnancies		Teen pregnancies	
	Percent	Number	Percent	Number
Intended & Married	6.3%	346	4.5%	41
Intended & Unmarried	6.0%	86	3.9%	30
Unintended	5.2%	291	4.4%	144
Unwanted	5.6%	179	5.0%	103
Total	5.7%	902	4.5%	318

Note: Data are from cycles 3 through 6 of the National Survey of Family Growth. Sampling weights applied.

Table 4: Impacts of abortion access on early births: by age threshold

	$k=18$ (1)	$k=19$ (2)	$k=20$ (3)	$k=21$ (4)	$k=22$ (5)	$k=23$ (6)	$k=24$ (7)
$Confid^{AB}$	0.008	-0.025	-0.122***	-0.169***	-0.143**	-0.149**	-0.081
	(0.020)	(0.028)	(0.037)	(0.057)	(0.065)	(0.067)	(0.077)
PI^{AB}	0.008	-0.021	-0.061*	-0.146***	-0.123**	-0.129**	-0.108
	(0.016)	(0.024)	(0.033)	(0.049)	(0.060)	(0.061)	(0.074)
$Restricted^{AB}$	-0.058*	-0.085	0.148	-0.079	-0.193	-0.227	-0.193
	(0.034)	(0.154)	(0.214)	(0.256)	(0.206)	(0.171)	(0.123)
$Confid^{Pill}$	0.011	0.012	-0.006	0.000	0.011	-0.001	0.105
	(0.022)	(0.038)	(0.061)	(0.077)	(0.082)	(0.076)	(0.075)
PI^{Pill}	0.008	-0.033	-0.067	-0.044	-0.036	-0.026	-0.008
	(0.018)	(0.027)	(0.040)	(0.050)	(0.051)	(0.052)	(0.053)
N	18,613	18,613	18,613	18,613	18,613	18,613	18,613
F-statistic of joint test	0.963	2.199	4.323	3.168	1.590	1.821	1.850
p-val	0.450	0.069	0.002	0.015	0.181	0.126	0.121

Note: Results from estimation of equation 1, where the value of k is shown in the column header. Note that equation includes indicators of contraceptive access, state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

Table 5: Impacts of abortion access on early births: by race

	Aggregate				Black				White			
	$k=20$		$k=24$		$k=20$		$k=24$		$k=20$		$k=24$	
	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
$Confid^{AB}$	-0.122***	-0.154***	-0.081	0.050	-0.176	-0.510***	-0.227	-0.255**	-0.116***	-0.101	0.099	0.081
	(0.037)	(0.056)	(0.077)	(0.103)	(0.127)	(0.141)	(0.146)	(0.109)	(0.038)	(0.094)	(0.085)	(0.129)
PI^{AB}	-0.061*	-0.051	-0.108	-0.011	0.003	-0.318**	-0.006	-0.188	-0.083**	-0.044	-0.033	-0.008
	(0.033)	(0.076)	(0.074)	(0.115)	(0.131)	(0.139)	(0.171)	(0.124)	(0.041)	(0.177)	(0.088)	(0.145)
$Restricted^{AB}$	0.148	0.321**	-0.193	-0.066	0.585	0.149	0.436*	0.106	0.109	0.356*	-0.263**	-0.075
	(0.214)	(0.129)	(0.123)	(0.107)	(0.352)	(0.270)	(0.235)	(0.121)	(0.242)	(0.194)	(0.123)	(0.131)
$Confid^{Pill}$	-0.006	-0.047	0.105	-0.122	-0.000	-0.110	0.101	-0.064	-0.002	-0.099	0.150**	-0.160
	(0.061)	(0.081)	(0.075)	(0.105)	(0.159)	(0.102)	(0.188)	(0.076)	(0.064)	(0.102)	(0.072)	(0.122)
PI^{Pill}	-0.067	-0.165**	-0.008	-0.115	-0.058	-0.105	0.003	0.015	-0.053	-0.202**	0.031	-0.109
	(0.040)	(0.063)	(0.053)	(0.092)	(0.091)	(0.084)	(0.139)	(0.063)	(0.042)	(0.079)	(0.051)	(0.113)
N	18,613	7,025	18,613	11,428	6,077	3,312	6,077	4,566	11,770	3,490	11,770	6,458
F-stat joint test	4.323	8.277	1.850	0.581	1.333	3.424	2.088	1.548	4.779	5.737	2.605	0.631
Mean	0.172	0.685	0.376	0.697	0.414	0.779	0.646	0.731	0.176	0.600	0.434	0.695

Note: Results from estimation of equation 1, where the sample employed is shown in the column header (all women vs. women with a pregnancy before age k), the value of k is shown in the super-column header, and the race group is shown in the super-super-column header. Note that equation includes indicators of contraceptive access, state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

Table 6: Estimates of β_{AC}, β_{AL}, and δ: Aggregate Sample

		Aggregate Sample			
		$k = 20$		$k = 24$	
		All	Preg	All	Preg
Years of Education	β_{AC}	0.133	0.131	0.659	0.785
	β_{AL}	0.109	0.308	0.549	0.804**
	δ	0.038	0.296	0.214	-1.990
Entered College	β_{AC}	0.082	0.051	0.224	0.220*
	β_{AL}	0.060	0.022	0.151	0.191*
	δ	-0.469	-0.186	-0.025	-0.802
Completed College	β_{AC}	0.012	0.040	0.116	0.182***
	β_{AL}	0.009	0.091*	0.089	0.185***
	δ	-0.114	-0.029	0.116	-0.462
Worked last week	β_{AC}	0.090	0.268***	0.033	0.202
	β_{AL}	0.087	0.273***	0.060	0.268*
	δ	-0.659*	-0.884**	-0.351	-1.007*
Manager	β_{AC}	0.056	0.163**	0.002	0.052
	β_{AL}	0.048*	0.151**	0.011	0.009
	δ	-0.078	-0.103	0.119	-0.150
Professional	β_{AC}	-0.024	0.010	0.147***	0.352***
	β_{AL}	-0.005	0.063	0.120*	0.374***
	δ	0.203	0.128	0.157	0.025
Individual Earnings	β_{AC}	0.880	15.488***	2.693	3.377
	β_{AL}	1.699	11.061***	3.628	-1.638
	δ	5.304	-4.020	2.324	7.269
Family Income	β_{AC}	0.700	5.935	9.317	7.785
	β_{AL}	2.496	10.153*	10.684	7.885
	δ	-12.361	-30.444**	-12.773	-3.244
Below Poverty Line	β_{AC}	-0.053**	-0.114	-0.104**	-0.135
	β_{AL}	-0.031	-0.079	-0.053	-0.028
	δ	0.216	0.110	-0.131	-0.336
Recieves Foodstamps	β_{AC}	-0.023	-0.163	-0.011	-0.048
	β_{AL}	0.002	-0.107	0.027	0.012
	δ	0.010	0.047	-0.036	-0.111

Note: Estimates of $\beta_{AC}$and β_{AL} from equation 5.1 (impacts of confidential and legal-with-parental-involvement access types, respectively) and δ from equation 3 (impact of an early birth). The sample employed is shown in the column header (all women vs. women with a pregnancy before age k) and the value of k is shown in the super-column header. Note that both equations include indicators of contraceptive access, state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

Table 7: Estimates of β_{AC}, β_{AL}, and δ: Black Women

		Black Women			
		$k = 20$		$k = 24$	
		All	Preg	All	Preg
Years of Education	β_{AC}	0.974***	0.631	1.964***	2.696***
	β_{AL}	0.974*	1.138**	1.893**	3.271***
	δ	-3.041*	-1.481	-2.390*	-6.307
Entered College	β_{AC}	0.234***	0.232*	0.398**	0.553***
	β_{AL}	0.282***	0.368***	0.467**	0.836***
	δ	-0.375	-0.387*	-0.471	-1.453
Completed College	β_{AC}	0.251***	0.145	0.441***	0.508***
	β_{AL}	0.126*	0.113	0.197**	0.384***
	δ	-0.751**	-0.290	-0.727***	-1.035
Worked last week	β_{AC}	0.001	0.273	0.018	0.172
	β_{AL}	0.158	0.398**	0.279	0.411**
	δ	-0.313	0.295	-0.113	-0.984
Manager	β_{AC}	0.255***	0.133*	0.294***	0.276***
	β_{AL}	0.201**	0.144**	0.207***	0.176**
	δ	-0.227	-0.350*	-0.320*	-0.867***
Professional	β_{AC}	0.164	0.108	0.257***	0.324***
	β_{AL}	0.203***	0.193***	0.321***	0.465***
	δ	-0.162	-0.098	0.045	-1.094*
Individual Earnings	β_{AC}	18.421*	22.900**	19.136*	23.141*
	β_{AL}	20.032**	24.963***	23.947**	28.258**
	δ	-27.750	-41.794**	5.269	-26.913
Family Income	β_{AC}	26.545***	26.473***	45.255***	48.154***
	β_{AL}	25.733***	35.521***	41.704***	51.986***
	δ	-58.663**	-61.104**	-19.792	-93.857
Below Poverty Line	β_{AC}	-0.179*	-0.331***	-0.283*	-0.356**
	β_{AL}	-0.237**	-0.430***	-0.364***	-0.420***
	δ	0.505**	0.590**	0.541	1.302*
Recieves Foodstamps	β_{AC}	-0.163***	-0.339***	-0.277**	-0.515***
	β_{AL}	-0.109	-0.261***	-0.168	-0.386**
	δ	0.789**	0.831***	0.463	1.332**

Note: Estimates of $\beta_{AC}$and β_{AL} from equation 5.1 and δ from equation 3, estimated for black women. The sample employed is shown in the column header (all women vs. women with a pregnancy before age k) and the value of k is shown in the super-column header. Note that both equations include indicators of contraceptive access, state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

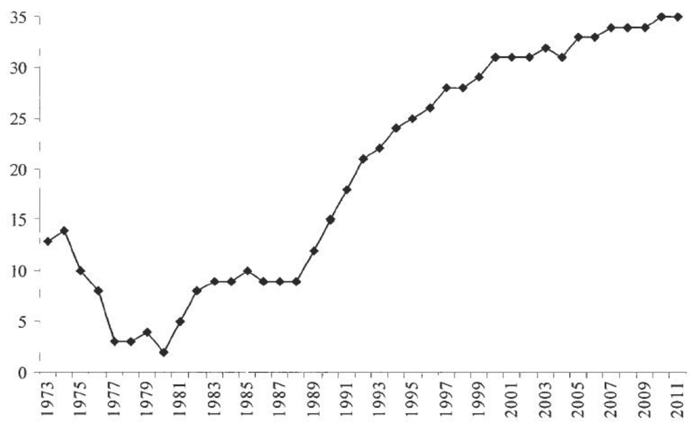
Table 8: Estimates of β_{AC}, β_{AL}, and δ: White Women

		White Women			
		$k=20$		$k=24$	
		All	Preg	All	Preg
Years of Education	β_{AC}	0.035	0.364	0.234	0.599
	β_{AL}	0.128	0.472	0.434	0.813
	δ	0.733	0.255	-0.741	-2.263
Entered College	β_{AC}	0.048	-0.000	0.164	0.156
	β_{AL}	0.028	-0.054	0.099	0.145
	δ	-0.346	-0.207	0.092	-0.624
Completed College	β_{AC}	-0.046	0.040	-0.046	0.121
	β_{AL}	0.002	0.118	0.045	0.192**
	δ	0.114	-0.021	-0.143	-0.393
Worked last week	β_{AC}	0.056	0.242*	-0.024	0.135
	β_{AL}	0.049	0.185*	0.007	0.186
	δ	-0.544	-0.871*	-0.143	-0.792
Manager	β_{AC}	0.040	0.214**	-0.015	0.040
	β_{AL}	0.028	0.182	-0.021	-0.007
	δ	0.015	-0.000	0.062	-0.337
Professional	β_{AC}	-0.014	-0.012	0.137**	0.388***
	β_{AL}	0.014	0.024	0.140	0.405***
	δ	0.189	0.075	0.143	0.024
Individual Earnings	β_{AC}	-2.653	14.184**	-2.375	-1.469
	β_{AL}	-1.360	8.542*	-0.407	-7.016
	δ	24.648	6.629	3.236	-3.484
Family Income	β_{AC}	-4.351	-3.115	1.659	-2.102
	β_{AL}	-0.520	0.624	6.587	-0.564
	δ	8.352	-18.751	-11.653	5.122
Below Poverty Line	β_{AC}	-0.037	0.024	-0.094*	-0.041
	β_{AL}	-0.023	0.049	-0.056	0.033
	δ	-0.085	-0.230	-0.268	-0.293
Recieves Foodstamps	β_{AC}	-0.019	-0.081	0.001	0.063
	β_{AL}	-0.001	-0.025	0.022	0.108
	δ	-0.330*	-0.472*	-0.047	-0.282

Note: Estimates of $\beta_{AC}$and β_{AL} from equation 5.1 and δ from equation 3, estimated for white women. The sample employed is shown in the column header (all women vs. women with a pregnancy before age k) and the value of k is shown in the super-column header. Note that both equations include indicators of contraceptive access, state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

Appendix

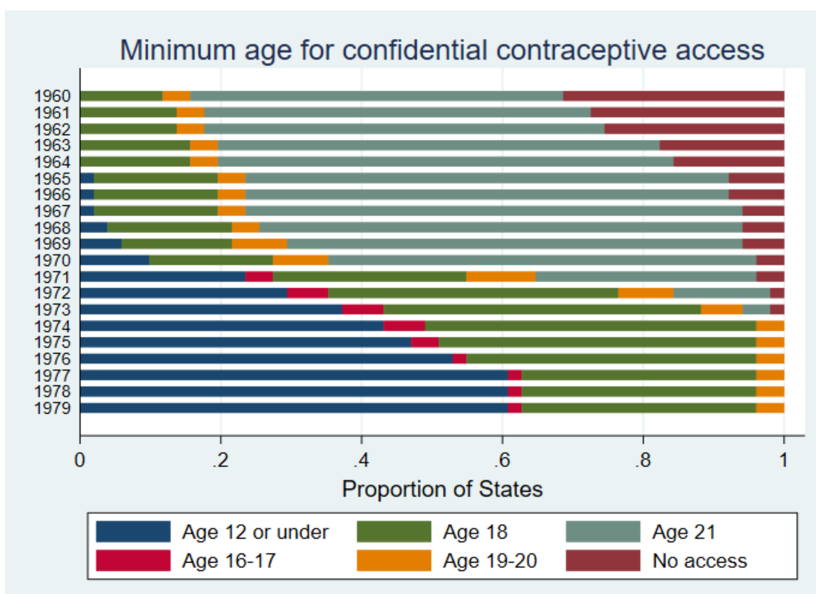
Figure A1



Number of states with minors' abortion restrictions, 1973-2011.

Note: Reproduced from Borelli (2011).

Figure A2



Note: Based on state level, not individual level data. Each bar shows the proportion of states that fell into each age category for the minimum age at which a woman could confidentially access a contraception in each year.

Table A1: Differences in legal coding from Myers (2017*b*)

State	Years	Minimum age for confidential access: Myers	Minimum age for confidential access: Jones	Note
Abortion				
Arizona	1976-79	18	0	A 1974 parental consent law was "presumably unenforceable with regard to abortion after the *Danforth* ruling in 1976" (Myers 2015)
Nebraska	1975	0	19	Parental involvement law was enforced until November 1975.
Nebraska	1977-78	16	17	A parental consent law applied to those under age 17, July 1977 to December 1978.
New York	1970-79	17	0	NY had a judicial mature minor doctrine prior to legalization in 1970. There has never been any legal change regarding minors' access and today, minors of all ages can consent. "At least some commentators asserted that minors have been able to consent to abortion since the early 1970s" (Merz)
North Carolina	1977-79	18	0	The existing medical consent law was amended to exclude abortion in 1977 but was unenforceable under *Danforth* and news articles indicate it was not enforced. A new law was passed in 1995 without overturning the original, indicating it was not being enforced.
Virginia	1976-79	18	0	Existing parental consent provision was invalidated by Danforth. A 1976 letter from the Assistant Attorney General stated that “at present, Virginia does not require any consent from minors for an abortion.” Parental consent was repealed in 1979.
Contraception				
California	1963	21	999	The Comstock law was never overturned but articles suggest it was enforced in 1960 and not enforced by 1964. I code 1964 as the year of first access.
Delaware	1972-73	12	18	A 1972 law gave access to minors aged 12 and older. The law did not go into effect until 1974.
Iowa	1973-79	18	0	Laws only govern what the state family planning programs can do, not private providers. State programs allowed minors access from 1973 and were encouraging it by 1975. No information indicates private providers acted otherwise.
Mississippi	1965-69	0	999	MS did not repeal Comstock law until 1970. Some ambiguity remains as Griswold in 1965 may have made it ineffective.
Mississippi	1972-79	21	0	A 1972 law allowed for minors' access when referred by a family planning clinic (among other referrals).
Missouri	1965-66	21	999	Comstock law was not repealed until 1967.
Missouri	1974-76	21	18	AG claimed in 1973 that minors had access but documents from 1974-75 sugggest otherwise. AOM was lowered to 18 in 1974.
Missouri	1977-79	18	0	Statute allowed minor access in 1977.
Washington	1968-69	21	0	Laws only govern what the state family planning programs can do, not private providers. State allowed minors access from 1968. No information indicates private providers acted otherwise.
Washington	1970-79	18	0	See above.

Table A2: Impacts of abortion access on education and career: aggregate sample

	Years of Education				Entered College				Completed College			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	0.133	0.131	0.659	0.785	0.082	0.051	0.224	0.220*	0.012	0.040	0.116	0.182***
	(0.245)	(0.239)	(0.566)	(0.567)	(0.063)	(0.084)	(0.144)	(0.124)	(0.038)	(0.064)	(0.092)	(0.063)
PI^{AB}	0.109	0.308	0.549	0.804**	0.060	0.022	0.151	0.191*	0.009	0.091*	0.089	0.185***
	(0.258)	(0.194)	(0.544)	(0.389)	(0.075)	(0.072)	(0.137)	(0.106)	(0.028)	(0.051)	(0.067)	(0.063)
$Restricted^{AB}$	-0.453	-1.348	0.253	0.348	-0.028	-0.009	0.002	0.039	-0.066	-0.050	-0.031	0.001
	(0.659)	(1.116)	(0.588)	(0.606)	(0.117)	(0.213)	(0.118)	(0.124)	(0.102)	(0.094)	(0.106)	(0.089)
$Confid^{Pill}$	0.057	0.164	0.124	0.629	0.046	0.081	0.091	0.172*	0.029	0.039	0.044	0.091
	(0.360)	(0.339)	(0.507)	(0.396)	(0.074)	(0.071)	(0.103)	(0.094)	(0.055)	(0.051)	(0.085)	(0.069)
PI^{Pill}	-0.069	-0.165	-0.193	0.186	0.046	0.063	0.061	0.114*	0.017	0.013	0.008	0.066**
	(0.223)	(0.286)	(0.313)	(0.263)	(0.038)	(0.055)	(0.054)	(0.066)	(0.038)	(0.038)	(0.057)	(0.030)
R2	0.197	0.136	0.197	0.147	0.162	0.121	0.162	0.132	0.148	0.084	0.148	0.100
N obs	18,552	7,001	18,552	11,391	18,062	6,843	18,062	11,122	18,062	6,843	18,062	11,122
F-statistic	0.208	1.523	0.381	2.279	0.932	0.530	1.020	2.512	0.264	1.088	0.598	3.196
p-val	0.958	0.200	0.860	0.061	0.468	0.753	0.416	0.042	0.930	0.379	0.701	0.014
Mean Dep Var			13.180	12.430	0.470	0.261	0.470	0.342	0.223	0.059	0.223	0.104

	Worked last week				Manager postion				Professional			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	0.090	0.268***	0.033	0.202	0.056	0.163**	0.002	0.052	-0.024	0.010	0.147***	0.352***
	(0.063)	(0.098)	(0.115)	(0.224)	(0.036)	(0.066)	(0.070)	(0.107)	(0.048)	(0.093)	(0.047)	(0.077)
PI^{AB}	0.087*	0.273***	0.060	0.268*	0.048*	0.151**	0.011	0.009	-0.005	0.063	0.120*	0.374***
	(0.048)	(0.082)	(0.086)	(0.140)	(0.028)	(0.068)	(0.049)	(0.100)	(0.032)	(0.047)	(0.060)	(0.087)
$Restricted^{AB}$	-0.035	0.231	-0.032	-0.053	0.054	-0.051	0.041	0.028	-0.094	-0.139	-0.041	0.079
	(0.094)	(0.236)	(0.082)	(0.166)	(0.118)	(0.111)	(0.082)	(0.102)	(0.059)	(0.105)	(0.081)	(0.091)
$Confid^{Pill}$	0.020	0.160	0.025	0.110	0.048	0.031	0.057	0.095	0.030	0.028	0.039	0.090**
	(0.068)	(0.136)	(0.098)	(0.149)	(0.045)	(0.076)	(0.057)	(0.079)	(0.045)	(0.047)	(0.066)	(0.042)
PI^{Pill}	0.083*	0.187**	0.106	0.146	0.019	-0.010	0.009	0.018	-0.002	-0.048	-0.012	-0.034
	(0.049)	(0.091)	(0.070)	(0.103)	(0.029)	(0.039)	(0.038)	(0.049)	(0.032)	(0.033)	(0.047)	(0.035)
R2	0.030	0.076	0.029	0.053	0.030	0.077	0.030	0.053	0.065	0.063	0.066	0.056
N obs	18,613	7,025	18,613	11,428	18,613	7,025	18,613	11,428	18,613	7,025	18,613	11,428
F-statistic	4.308	4.655	1.857	1.453	1.191	2.333	0.308	0.339	0.710	2.403	3.900	8.387
p-val	0.003	0.001	0.119	0.222	0.328	0.056	0.906	0.887	0.619	0.050	0.005	0.000
Mean Dep Var	0.653	0.596	0.653	0.618	0.060	0.039	0.060	0.045	0.129	0.052	0.129	0.079

Note: Results from estimation of equation 5.1, where the sample employed is shown in the column header (all women vs. women with a pregnancy before age k), the value of k is shown in the super-column header, and the dependent variable is shown in the super-super-column header. Note that equation includes state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

Table A3: Impacts of abortion access on education and career: black women

	Years of Education				Entered College				Completed College			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	0.974***	0.631	1.964***	2.696***	0.234***	0.232*	0.398**	0.553***	0.251***	0.145	0.441***	0.508***
	(0.310)	(0.468)	(0.677)	(0.865)	(0.075)	(0.118)	(0.169)	(0.190)	(0.056)	(0.093)	(0.079)	(0.102)
PI^{AB}	0.974*	1.138**	1.893**	3.271***	0.282***	0.368***	0.467**	0.836***	0.126*	0.113	0.197**	0.384***
	(0.502)	(0.515)	(0.882)	(0.790)	(0.094)	(0.105)	(0.182)	(0.159)	(0.065)	(0.072)	(0.095)	(0.073)
$Restricted^{AB}$	-2.250	-1.697	-0.653	0.519	-0.204	-0.154	-0.164	0.069	-0.264***	-0.080	-0.148*	0.047
	(1.505)	(1.682)	(0.765)	(0.831)	(0.207)	(0.264)	(0.134)	(0.135)	(0.092)	(0.081)	(0.088)	(0.093)
$Confid^{Pill}$	0.831	0.461	1.049	0.836	0.122	0.111	0.237	0.196	0.159**	0.009	0.165*	0.007
	(0.562)	(0.515)	(0.706)	(0.719)	(0.149)	(0.149)	(0.181)	(0.151)	(0.066)	(0.059)	(0.085)	(0.089)
PI^{Pill}	0.750**	0.343	0.919**	0.557	0.129	0.095	0.192*	0.106	0.173***	0.050	0.212**	0.084
	(0.343)	(0.252)	(0.436)	(0.442)	(0.104)	(0.070)	(0.109)	(0.100)	(0.056)	(0.040)	(0.085)	(0.081)
R2	0.160	0.167	0.159	0.157	0.147	0.171	0.148	0.158	0.136	0.080	0.135	0.115
N obs	6,049	3,296	6,049	4,546	5,898	3,233	5,898	4,446	5,898	3,233	5,898	4,446
F-statistic	6.214	3.320	5.689	13.293	5.583	7.090	3.374	8.266	11.291	1.501	9.417	10.041
p-val	0.000	0.013	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.210	0.000	0.000
Mean Dep Var			12.564	12.181	0.371	0.255	0.371	0.303	0.131	0.053	0.131	0.078

	Worked last week				Manager postion				Professional			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	0.001	0.273	0.018	0.172	0.255***	0.133*	0.294***	0.276***	0.164	0.108	0.257***	0.324***
	(0.139)	(0.184)	(0.217)	(0.244)	(0.093)	(0.069)	(0.086)	(0.078)	(0.103)	(0.095)	(0.078)	(0.064)
PI^{AB}	0.158	0.398**	0.279	0.411**	0.201**	0.144**	0.207***	0.176**	0.203***	0.193***	0.321***	0.465***
	(0.133)	(0.172)	(0.177)	(0.167)	(0.080)	(0.054)	(0.061)	(0.067)	(0.071)	(0.061)	(0.085)	(0.129)
$Restricted^{AB}$	0.043	0.025	-0.189	-0.256	-0.011	-0.050	-0.023	-0.090	-0.015	-0.036	0.079	0.098
	(0.293)	(0.453)	(0.228)	(0.338)	(0.074)	(0.087)	(0.063)	(0.080)	(0.140)	(0.120)	(0.101)	(0.151)
$Confid^{Pill}$	-0.057	0.012	-0.054	0.024	0.005	-0.029	0.042	0.035	0.222***	0.099	0.370***	0.366***
	(0.119)	(0.219)	(0.159)	(0.243)	(0.040)	(0.035)	(0.053)	(0.044)	(0.069)	(0.064)	(0.079)	(0.088)
PI^{Pill}	-0.032	-0.057	-0.047	-0.006	0.035	0.034	0.056	0.037	0.120*	0.041	0.155**	0.146**
	(0.085)	(0.121)	(0.118)	(0.120)	(0.025)	(0.023)	(0.035)	(0.036)	(0.068)	(0.042)	(0.068)	(0.070)
R2	0.051	0.089	0.051	0.070	0.058	0.074	0.053	0.061	0.069	0.058	0.070	0.077
N obs	6,077	3,312	6,077	4,566	6,077	3,312	6,077	4,566	6,077	3,312	6,077	4,566
F-statistic	0.516	1.384	1.024	3.046	2.270	4.334	3.276	3.729	4.371	3.222	11.596	10.086
p-val	0.763	0.250	0.415	0.019	0.064	0.003	0.013	0.007	0.003	0.015	0.000	0.000
Mean Dep Var	0.628	0.560	0.628	0.595	0.036	0.026	0.036	0.028	0.089	0.048	0.089	0.062

Note: Results from estimation of equation 5.1 for black women, where the sample employed is shown in the column header (all women vs. women with a pregnancy before age k), the value of k is shown in the super-column header, and the dependent variable is shown in the super-super-column header. Note that equation includes state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

Table A4: Impacts of abortion access on education and work: white women

	Years of Education				Entered College				Completed College			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	0.035	0.364	0.234	0.599	0.048	-0.000	0.164	0.156	-0.046	0.040	-0.046	0.121
	(0.201)	(0.308)	(0.747)	(0.678)	(0.053)	(0.082)	(0.182)	(0.172)	(0.041)	(0.082)	(0.090)	(0.088)
PI^{AB}	0.128	0.472	0.434	0.813	0.028	-0.054	0.099	0.145	0.002	0.118	0.045	0.192**
	(0.235)	(0.332)	(0.752)	(0.564)	(0.064)	(0.066)	(0.166)	(0.148)	(0.041)	(0.075)	(0.085)	(0.088)
$Restricted^{AB}$	-0.151	-1.603	0.595	0.398	0.030	-0.052	0.072	0.040	-0.032	-0.034	0.020	0.019
	(0.627)	(1.179)	(0.580)	(0.632)	(0.143)	(0.228)	(0.134)	(0.147)	(0.123)	(0.144)	(0.115)	(0.110)
$Confid^{Pill}$	-0.070	0.357	-0.037	0.598	0.023	0.119	0.057	0.140	-0.005	0.051	-0.003	0.069
	(0.345)	(0.429)	(0.477)	(0.396)	(0.069)	(0.083)	(0.097)	(0.101)	(0.053)	(0.060)	(0.077)	(0.072)
PI^{Pill}	-0.150	-0.165	-0.248	0.130	0.033	0.083	0.053	0.103	-0.005	0.009	-0.012	0.044
	(0.191)	(0.352)	(0.265)	(0.307)	(0.034)	(0.069)	(0.052)	(0.083)	(0.031)	(0.047)	(0.045)	(0.040)
R2	0.190	0.144	0.190	0.147	0.161	0.134	0.161	0.137	0.139	0.105	0.139	0.088
N obs	11,742	3,485	11,742	6,444	11,421	3,391	11,421	6,282	11,421	3,391	11,421	6,282
F-statistic	0.183	2.682	0.439	1.611	0.426	0.891	0.487	0.920	0.352	0.818	0.293	1.450
p-val	0.968	0.032	0.819	0.175	0.828	0.494	0.784	0.476	0.878	0.543	0.915	0.223
Mean Dep Var			13.465	12.597	0.515	0.265	0.515	0.367	0.264	0.065	0.264	0.120

	Worked last week				Manager postion				Professional			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	0.056	0.242*	-0.024	0.135	0.040	0.214**	-0.015	0.040	-0.014	-0.012	0.137**	0.388***
	(0.065)	(0.128)	(0.125)	(0.226)	(0.028)	(0.099)	(0.076)	(0.113)	(0.051)	(0.095)	(0.068)	(0.104)
PI^{AB}	0.049	0.185*	0.007	0.186	0.028	0.182	-0.021	-0.007	0.014	0.024	0.140	0.405***
	(0.045)	(0.105)	(0.093)	(0.142)	(0.037)	(0.110)	(0.068)	(0.119)	(0.034)	(0.052)	(0.091)	(0.113)
$Restricted^{AB}$	0.001	0.370	-0.007	0.009	0.059	-0.043	0.090	0.088	-0.141*	-0.188	-0.024	0.121
	(0.103)	(0.264)	(0.121)	(0.178)	(0.149)	(0.149)	(0.101)	(0.131)	(0.076)	(0.179)	(0.106)	(0.120)
$Confid^{Pill}$	0.017	0.090	0.022	0.128	0.053	0.064	0.074	0.127	-0.001	0.027	0.004	0.076
	(0.061)	(0.124)	(0.099)	(0.158)	(0.050)	(0.091)	(0.059)	(0.088)	(0.051)	(0.058)	(0.075)	(0.052)
PI^{Pill}	0.076	0.153	0.096	0.138	0.016	-0.020	0.007	0.011	-0.018	-0.052	-0.024	-0.052
	(0.047)	(0.096)	(0.075)	(0.121)	(0.030)	(0.050)	(0.038)	(0.058)	(0.034)	(0.042)	(0.050)	(0.047)
R2	0.036	0.091	0.035	0.062	0.030	0.086	0.030	0.058	0.061	0.088	0.061	0.065
N obs	11,770	3,490	11,770	6,458	11,770	3,490	11,770	6,458	11,770	3,490	11,770	6,458
F-statistic	2.021	1.736	0.725	0.689	0.902	1.755	0.634	0.750	0.996	1.693	2.019	5.096
p-val	0.092	0.144	0.608	0.634	0.488	0.140	0.674	0.590	0.430	0.154	0.092	0.001
Mean Dep Var	0.668	0.630	0.668	0.638	0.072	0.051	0.072	0.058	0.149	0.056	0.149	0.092

Note: Results from estimation of equation 5.1 for white women, where the sample employed is shown in the column header (all women vs. women with a pregnancy before age *k*), the value of *k* is shown in the super-column header, and the dependent variable is shown in the super-super-column header. Note that equation includes state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

Table A5: Impacts of abortion access on income: aggregate sample

	Individual Earnings				Family Income			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	0.880	15.488***	2.693	3.377	0.700	5.935	9.317	7.785
	(2.860)	(3.822)	(6.803)	(5.286)	(5.589)	(5.283)	(7.691)	(12.835)
PI^{AB}	1.699	11.061***	3.628	-1.638	2.496	10.153*	10.684	7.885
	(2.321)	(3.967)	(4.951)	(3.990)	(4.670)	(5.469)	(7.385)	(10.611)
$Restricted^{AB}$	5.333	5.359	3.972	2.298	-5.811	-23.597	3.992	0.413
	(4.625)	(9.993)	(4.495)	(4.813)	(7.992)	(15.217)	(7.152)	(12.307)
$Confid^{Pill}$	2.202	6.632	3.260	2.558	-0.674	-3.130	1.178	-2.550
	(3.930)	(4.614)	(4.281)	(5.045)	(3.238)	(5.409)	(4.212)	(6.323)
PI^{Pill}	0.387	0.751	-0.105	0.177	0.665	2.132	0.139	1.092
	(2.359)	(3.925)	(2.652)	(3.977)	(2.279)	(3.143)	(3.352)	(4.505)
R2	0.104	0.129	0.104	0.094	0.169	0.174	0.169	0.176
N obs	13,871	5,161	13,871	8,571	16,949	6,330	16,949	10,367
F-statistic	0.474	4.633	0.529	0.596	0.340	3.143	0.716	0.374
p-val	0.794	0.002	0.753	0.703	0.886	0.015	0.615	0.864
Mean Dep Var	42.607	34.473	42.607	36.243	66.613	54.375	66.613	59.823

	Below Poverty Line				Receives Foodstamps			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	-0.053**	-0.114	-0.104**	-0.135	-0.023	-0.163	-0.011	-0.048
	(0.025)	(0.079)	(0.044)	(0.084)	(0.037)	(0.117)	(0.052)	(0.103)
PI^{AB}	-0.031	-0.079	-0.053	-0.028	0.002	-0.107	0.027	0.012
	(0.024)	(0.080)	(0.038)	(0.079)	(0.031)	(0.119)	(0.038)	(0.094)
$Restricted^{AB}$	0.056	0.226	0.032	0.106	0.004	0.048	-0.025	-0.019
	(0.071)	(0.165)	(0.068)	(0.089)	(0.086)	(0.188)	(0.051)	(0.092)
$Confid^{Pill}$	-0.020	0.042	-0.029	-0.041	0.016	0.105	0.009	-0.016
	(0.031)	(0.069)	(0.041)	(0.060)	(0.024)	(0.076)	(0.031)	(0.065)
PI^{Pill}	-0.010	0.047	-0.001	0.009	0.016	0.083	0.022	0.010
	(0.019)	(0.050)	(0.026)	(0.042)	(0.014)	(0.065)	(0.022)	(0.045)
R2	0.109	0.149	0.110	0.130	0.106	0.154	0.106	0.137
N obs	18,521	7,006	18,521	11,398	18,457	6,965	18,457	11,331
F-statistic	2.018	0.968	2.563	1.552	0.595	0.590	0.911	0.356
p-val	0.092	0.447	0.039	0.191	0.704	0.707	0.481	0.876
Mean Dep Var	0.145	0.247	0.145	0.198	0.143	0.258	0.143	0.203

Note: Results from estimation of equation 5.1, where the sample employed is shown in the column header (all women vs. women with a pregnancy before age k), the value of k is shown in the super-column header, and the dependent variable is shown in the super-super-column header. Note that equation includes state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

Table A6: Impacts of abortion access on income: black women

	Individual Earnings				Family Income			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	18.421*	22.900**	19.136*	23.141*	26.545***	26.473***	45.255***	48.154***
	(9.994)	(8.686)	(10.862)	(12.741)	(5.447)	(6.426)	(11.253)	(7.060)
PI^{AB}	20.032**	24.963***	23.947**	28.258**	25.733***	35.521***	41.704***	51.986***
	(9.728)	(8.339)	(10.375)	(12.588)	(6.983)	(9.258)	(11.561)	(10.847)
$Restricted^{AB}$	-19.529	-3.858	9.577	17.001	-32.471	-58.387**	-1.015	-2.573
	(13.403)	(11.303)	(9.997)	(12.194)	(22.265)	(25.514)	(13.072)	(17.555)
$Confid^{Pill}$	2.433	8.253	3.260	3.491	2.164	8.269	4.531	6.828
	(6.310)	(8.562)	(8.644)	(9.321)	(10.129)	(10.280)	(12.007)	(10.628)
PI^{Pill}	2.192	6.721	1.725	0.237	10.094	13.029*	14.473*	17.087**
	(4.044)	(6.834)	(6.545)	(8.167)	(7.200)	(6.956)	(8.212)	(7.175)
R2	0.169	0.217	0.163	0.178	0.131	0.152	0.129	0.157
N obs	4,559	2,417	4,559	3,409	5,290	2,892	5,290	3,990
F-statistic	1.596	2.164	1.744	1.923	7.748	6.174	6.328	27.829
p-val	0.183	0.078	0.146	0.112	0.000	0.000	0.000	0.000
Mean Dep Var	37.713	32.931	37.713	34.512	48.935	42.487	48.935	45.198

	Below Poverty Line				Receives Foodstamps			
	$k = 20$		$k = 24$		$k = 20$		$k = 24$	
	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	-0.179*	-0.331***	-0.283*	-0.356**	-0.163***	-0.339***	-0.277**	-0.515***
	(0.098)	(0.120)	(0.142)	(0.160)	(0.050)	(0.090)	(0.108)	(0.158)
PI^{AB}	-0.237**	-0.430***	-0.364***	-0.420***	-0.109	-0.261***	-0.168	-0.386**
	(0.090)	(0.119)	(0.113)	(0.153)	(0.070)	(0.085)	(0.143)	(0.171)
$Restricted^{AB}$	0.438*	0.658**	0.241	0.284	0.627*	0.959**	0.073	0.040
	(0.247)	(0.249)	(0.263)	(0.345)	(0.339)	(0.356)	(0.234)	(0.317)
$Confid^{Pill}$	-0.025	0.085	0.057	0.079	-0.064	0.085	-0.103	-0.057
	(0.134)	(0.159)	(0.166)	(0.188)	(0.113)	(0.148)	(0.131)	(0.170)
PI^{Pill}	-0.080	0.094	-0.046	0.007	-0.082	0.008	-0.106	-0.089
	(0.091)	(0.115)	(0.100)	(0.101)	(0.077)	(0.098)	(0.077)	(0.096)
R2	0.090	0.119	0.088	0.096	0.102	0.145	0.097	0.111
N obs	6,069	3,310	6,069	4,562	6,017	3,284	6,017	4,524
F-statistic	3.515	6.389	4.379	2.790	3.763	15.032	1.666	2.724
p-val	0.009	0.000	0.003	0.029	0.006	0.000	0.163	0.032
Mean Dep Var	0.289	0.377	0.289	0.338	0.303	0.404	0.303	0.362

Note: Results from estimation of equation 5.1 for black women, where the sample employed is shown in the column header (all women vs. women with a pregnancy before age k), the value of k is shown in the super-column header, and the dependent variable is shown in the super-super-column header. Note that equation includes state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.

Table A7: Impacts of abortion access on income: white women

	Individual Earnings				Family Income			
	$k=20$		$k=24$		$k=20$		$k=24$	
	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	-2.653	14.184**	-2.375	-1.469	-4.351	-3.115	1.659	-2.102
	(2.405)	(5.336)	(7.311)	(4.703)	(6.203)	(6.775)	(9.783)	(15.096)
PI^{AB}	-1.360	8.542*	-0.407	-7.016	-0.520	0.624	6.587	-0.564
	(1.569)	(4.712)	(5.227)	(4.741)	(5.338)	(7.509)	(8.307)	(11.397)
$Restricted^{AB}$	10.800*	9.448	2.448	-5.304	4.066	-7.223	6.090	-3.208
	(6.163)	(14.119)	(5.643)	(5.413)	(8.766)	(15.855)	(7.723)	(15.608)
$Confid^{Pill}$	1.460	5.683	3.249	3.334	-1.517	-1.969	0.556	-1.936
	(3.370)	(5.086)	(4.177)	(5.956)	(3.625)	(6.112)	(4.568)	(6.977)
PI^{Pill}	-0.383	-1.034	-0.492	0.621	-0.219	3.235	-0.275	0.039
	(1.998)	(4.519)	(2.600)	(4.792)	(2.623)	(4.015)	(3.826)	(5.208)
R2	0.103	0.143	0.102	0.104	0.126	0.120	0.126	0.125
N obs	8,784	2,584	8,784	4,881	10,967	3,236	10,967	6,012
F-statistic	1.060	2.250	0.371	1.225	0.403	0.690	0.342	0.028
p-val	0.394	0.064	0.866	0.311	0.844	0.634	0.885	1.000
Mean Dep Var	44.902	35.647	44.902	37.188	74.987	64.840	74.987	69.437

	Below Poverty Line				Receives Foodstamps			
	$k=20$		$k=24$		$k=20$		$k=24$	
	All	Preg	All	Preg	All	Preg	All	Preg
$Confid^{AB}$	-0.037	0.024	-0.094*	-0.041	-0.019	-0.081	0.001	0.063
	(0.025)	(0.076)	(0.051)	(0.084)	(0.032)	(0.116)	(0.041)	(0.091)
PI^{AB}	-0.023	0.049	-0.056	0.033	-0.001	-0.025	0.022	0.108
	(0.026)	(0.078)	(0.040)	(0.069)	(0.027)	(0.106)	(0.023)	(0.065)
$Restricted^{AB}$	-0.043	-0.018	0.023	0.104	-0.144***	-0.322***	-0.031	0.005
	(0.063)	(0.176)	(0.044)	(0.077)	(0.044)	(0.111)	(0.041)	(0.068)
$Confid^{Pill}$	-0.020	0.044	-0.036	-0.033	0.019	0.078	0.014	-0.014
	(0.027)	(0.079)	(0.041)	(0.064)	(0.024)	(0.088)	(0.035)	(0.075)
PI^{Pill}	0.009	0.059	0.026	0.051	0.038**	0.104	0.055**	0.055
	(0.021)	(0.063)	(0.030)	(0.051)	(0.015)	(0.071)	(0.022)	(0.053)
R2	0.046	0.065	0.046	0.054	0.044	0.079	0.043	0.061
N obs	11,689	3,473	11,689	6,432	11,690	3,464	11,690	6,411
F-statistic	0.928	0.551	1.960	1.603	4.409	2.643	3.603	2.751
p-val	0.471	0.737	0.101	0.177	0.002	0.034	0.007	0.029
Mean Dep Var	0.071	0.124	0.071	0.098	0.061	0.119	0.061	0.091

Note: Results from estimation of equation 5.1 for white women, where the sample employed is shown in the column header (all women vs. women with a pregnancy before age k), the value of k is shown in the super-column header, and the dependent variable is shown in the super-super-column header. Note that equation includes state and birth cohort fixed effects, and individual background controls. Standard errors reported in parentheses, clustered at the state level. *** significant at the 1%, ** 5%, and * 10% levels.