

# Marriage and Emancipation in The Age of The Pill\*

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## **Abstract**

Women's economic emancipation arguably took off in the late 1960s and early 1970s. In an influential paper, Goldin and Katz [2002] pointed to the role of unmarried women's access to the oral contraceptive (the Pill). However, in many states, young women could marry, an act which emancipated her with respect to medical treatment, including the Pill. Exploiting changes in the legal rights of young adults by state, we find evidence that Pill access made early marriage more attractive and facilitated women's educational and occupational attainments. Married but childless, the means and time to pursue higher education were there.

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# 1 Introduction

Women’s economic emancipation arguably took off in earnest in the late 1960s, early 1970s. While the resulting transformation is evident at all levels of society, what prompted this watershed is a matter of debate. In an influential paper, Goldin and Katz [2002] proposed that access to the contraceptive Pill among unmarried women provided the impetus for this social revolution. Their empirical analysis focused on the so called “mature minor” doctrine which in the late 1960s and early 1970s gave young, unmarried, or otherwise unemancipated women the right to consent to medical treatment without parental consent. They showed that such “early legal access” (henceforth, ELA), delayed marriage and raised the fraction who became doctors and lawyers among women who had graduated from college.

However, it is unclear *a priori* why only unmarried women (as noted by Bailey [2006], Chiappori and Oreffice [2008]) or women with a college education would benefit from the contraceptive qualities of the Pill. In this paper we revisit the relationship between Pill access and women’s educational and occupational outcomes by widening the focus to include all women and exploring an alternative route to emancipation: marriage.

While, traditionally, marriage may have stood in the way of women’s labor market aspirations, there are several reasons why this need not have been the case in the period concerned. First, marriage emancipated a woman with respect to medical treatment, including the Pill. Second, traditionally, wives were relieved of bread winning duties, which combined with postponed childbearing may have conspired to make marriage particularly conducive to continued education. Limited student aid or inability to borrow against future earnings at the time may have added to the importance of financial

support through marriage. Third, although Pill access was extended to unmarried women, social acceptance of premarital sex was relatively low in the late 1960s/early 1970s. Fourth, and importantly for our empirical identification, the movement towards lowering the legal age to various rights extended to marriage, and by the mid-1970s, almost all states had lowered the minimum age for marriage for women to 18.

Exploiting cross-state variation in the legal rights afforded to young women, we start by investigating whether marriage was made more attractive in the age of the Pill. Our focus on young women is motivated by the observation that for young women, marriage is a relevant choice and desired fertility may be low. We explore state-varying changes in the legal age of marriage, which occurred around the same time ELA laws and abortion legalization were enacted and find that young women enabled to marry did so. We link this finding to the Pill by comparing states with and without Comstock laws, laws which acted as barriers to the sale and distribution of contraceptives, see Bailey [forthcoming]. If the benefits to marriage were related to Pill access, marriage in Comstock states should have been unaffected. This is also what we find.

We then ask if women with early Pill access through marriage used this new freedom to pursue higher education and professional careers. While women with early access through marriage did not appear better educated as measured by Associate or Bachelor's degree (or higher), we document a positive and statistically significant impact on professional occupation, as observed in the 1980 and 1990 censuses (at ages 31-45). The lowering of the minimum marriage age to 18 was associated with more women in professional occupations (excluding nurses or non-college teachers), and the fraction of women doctors and lawyers among women college graduates.

Since both law and medicine require graduate studies at selective programs, this latter finding suggests an effect on the intensive margin among college going women.

Thus, when all women, not just college educated women, are considered, marriage in the early era of the Pill emerges as a facilitator rather than an obstacle to the educational and professional attainments of American women.

The remainder of this paper is organized as follows. We start by giving a brief legal background. In Section 2 we present the data. Section 3 presents our empirical analysis and results, and Section 4 concludes.

## 1.1 Background

Epitomized by the 26th Amendment in 1972 – the lowering of the voting age to 18 – many legal rights were extended to young adults in the late 1960s and early 1970s. Whereas in 1969 only seven states had a female age of majority below 20, this number had changed to 42 by 1974 [Goldin and Katz, 2002]. Many laws were also passed granting “mature minors” the right to consent to medical treatment, including contraception. By 1974, an unmarried 18-year-old female could consent to birth control treatment in most US states (45 states and DC) [DHEW, 1974].

The legal changes in this period emancipated minors in several dimensions, including, but not limited to, voting, signing contracts, and consenting to medical treatment. However, in the vast majority of states, marriage constituted an earlier route to emancipation. Although emancipation could also be obtained by other means (e.g., by judicial decree, parental act, enlistment in military service [Pilpel and Wechsler, 1969]), marriage was the

most frequently used channel [DHEW, 1974]. Moreover, it could be entered into before the age of majority in many states. By 1960, forty states allowed an 18 year old woman to marry without parental consent. Thus, in many states, a married 18-year old woman would already have had Pill access in the early 1960s, some ten years before unmarried women gained access.

Whenever married women are granted more extensive rights than unmarried women, we would expect this wedge to raise the incentives to marry. Although the majority of states allowed 18-year old women to marry in the early 1960's, a simple comparison between states with different age laws could capture attitudes that motivated these laws in the first place. Therefore, our empirical analysis will include state fixed effects and thus rely on changes in the legal age of marriage. As pointed out by Blank et al. [2009], over the short period from 1971 to 1975, the same legislative movement that changed the voting age and other rights lowered the minimum marriage age for women to 18 in all but 3 states. Most importantly, as pointed out by Goldin and Katz [2002], these changes were not motivated by demands for marriage rights *per se*, but were part of the overall trend to extend the rights of young adults.

## 2 Data

Our main data sets are the 1980 and 1990 censuses, 5% IPUMS sample.

**Age and Cohort Restrictions** We consider marriage at ages 18-20. While these ages may seem young by today's standards, more than half of women born in 1939 had married by age 20. Additionally, these are the ages for which the bulk of changes in the minimum age of marriage (without parental consent) took place during the time period of

concern.

Pill access went from nil to universal between 1957 and 1975.<sup>1</sup> The first cohort to gain pill access at the ages considered is the 1937 cohort, who reached age 20 in 1957. The last cohort to reach young adulthood in the era of restricted Pill access is the 1957 cohort, who turned 18 in 1975. In view of these dates, we choose to focus on birth cohorts 1935-1959. These age and cohort restrictions imply that we are studying marriage, education and occupation decisions in the 1950s, 60s and 70s.

**Marriage** The 1980 census contains information on the age at first marriage, which allows us to construct retrospective marriage rates for cohort-age-state cells.

**Education** The censuses contain information on the highest education attained at the time of the census. The older the cohort, the better the education variable captures the ‘final’ education level for the cohort. On the downside, mortality attrition becomes more of a concern with higher age. The compromise we strike is to focus on women 31-45 years old at the time of the census. That is, for the 1935-1944 cohorts, we use the 1980 census, and for the 1945-1959 cohorts the 1990 census.<sup>2</sup>

We focus on two outcomes: some college (or more), and college graduate (or more). “Some college” includes one to three years of college (no degree, occupational or professional associate degree), and “college graduate” includes a Bachelor’s degree or higher.

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<sup>1</sup>The Pill was FDA approved in 1957 for the regulation of menses, and in 1960 for contraceptive purposes.

<sup>2</sup>For the 1990 census 5% IPUMS sample, we employ the provided weights (as frequencies) in the computation of state-cohort cell averages.

**Occupation** We use the census classification of occupations and (following Goldin and Katz [2002]) consider two professional occupation outcomes:

**Professional occupation** Professional occupations excluding nurses or other non-diagnosing health professional and non-college teachers.

**Doctors and lawyers** Physicians, dentists, veterinarians, judges and lawyers.

As in the computation of education cell averages, we employ the 1980 and 1990 censuses and focus on women 31-45 years old.

We use four sets of laws. Laws governing the minimum marriage age, laws governing early legal access (ELA), laws restricting the sales of contraceptives, and abortion laws.

The censuses include information on state of residence and state of birth. We follow the literature and assign laws based on state of birth.

**Minimum Marriage Age** We focus on the age at which a woman could get married without parental consent, using data from Blank et al. [2009]. Seventeen states changed the minimum age of marriage, and for fifteen of these, there was a change for the ages 18-20.<sup>3</sup> The modal change was from 21 to 18 years and the changes affecting 18 to 20-year olds took place between 1964 and 1977. It is worth noting that some changes in marriage laws raised the minimum age requirement,

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<sup>3</sup>South Carolina changed its marriage age from 14 to 18 in 1956, and Mississippi changed its marriage age from 18 to 15 in 1958. In both states, 18-20 year olds were eligible to marry throughout our study period.

as was the case in Alaska, Georgia, Iowa, Montana and Wyoming (see Appendix Table A-1).

**ELA** We follow the literature and consider the age at which an otherwise unemancipated minor could consent to medical treatment without parental consent – Early Legal Access – and code ELA according to Bailey and Guldi [2008]. Since we adhere to the recent literature, we omit the discussion of these laws in the interest of space. We consider ELA at age 18 and age 20. Fifteen states granted 18-year olds ELA before 1970, and by 1974, all states but Nebraska had followed suit. Seventeen states granted 20-year olds ELA before 1970, and all states had given this right by 1974 (see Figures A-1 and A-2 in the Appendix).

**Comstock** We code Comstock laws according to whether the state had a sales ban without a physician exception. Thus defined, the 17 Comstock states are: Arizona, California, Colorado, Connecticut, Delaware, Illinois, Indiana, Iowa, Kansas, Massachusetts, Mississippi, Missouri, Nebraska, Nevada, New Jersey, Ohio, and Wyoming [Bailey, forthcoming].

**Abortion** Five states granted abortion rights in 1970 (Alaska, California, Hawaii, New York, Washington) and the remainder granted abortion rights following *Roe v. Wade* [Levine et al., 1996]. We consider abortion access to be in place in 1970 for the five repeal states, and in 1974 for the remainder of the states.<sup>4</sup>

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<sup>4</sup>Alternatively, abortion access could be considered to be in place in 1970 for California, and 1971 for Alaska, Hawaii, New York and Washington, and *Roe v. Wade* may have been considered effective in 1973. Bailey [2009] presents yet another classification where Vermont and New Jersey are considered repeal states in 1972. Our results are not sensitive

Considering the limited variation in the timing of the legalization of abortion, we include this variable mainly as a control. Our results are not sensitive to its inclusion.

### 3 Analysis and Results

We first study the impact of early legal rights on marriage around the age of eligibility and then turn to the subsequent educational and professional outcomes.

Since we consider the effects of state-level laws that governed the rights of young women, we perform our analysis at the cohort-state level. Throughout, we include state fixed effects, implying that the effect of any given right is identified from the states that changed their laws. We cluster standard errors at the state level.

#### 3.1 Marriage

We start by considering the effects of minimum marriage age laws on the probability of being married around the age of the eligibility. We focus on the ages 18, 19 and 20 and consider cohorts 1935-1959 in all specifications (that is, we will be studying events in the period 1953 to 1979).

We estimate:

$$\begin{aligned} \text{married by } a_{cs} = & \alpha_c + \alpha_s + \gamma_1 \text{I}(\text{MinMarAge } a)_{cs} \\ & + \gamma_2 \text{I}(\text{MinMarAge } a)_{cs} \times \text{I}(\text{Comstock})_s + X_{cs} + \epsilon_{cs}. \end{aligned} \quad (1)$$

The parameter of interest is  $\gamma$ , the impact of the law allowing an  $a$ -year-  


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to these alternative codings.

old and older to marry on the fraction married by age  $a$ .<sup>5</sup>  $\alpha_c$  and  $\alpha_s$  are state and cohort dummies. All regressions also include the fraction Black and other non-White at the state-cohort level,  $X_{cs}$ .

To allow for the possibility that the incentives to marry were muted in states with Comstock laws, we also interact the indicator variable for having attained the minimum marriage age with a dummy for whether the state was a Comstock state.<sup>6</sup>

Our results are presented in Table 1. The first three columns report the results of marriage age eligibility on the fraction married. We find that marriage laws were binding at young ages, ages 18 and 19, but not at age 20 (columns 1-3). This suggests that for young women not wishing to start child bearing, the Pill made marriage more attractive. To investigate this possibility further, we look at the Comstock states, states where contraceptives were prohibited. If marriage was made more attractive by Pill access, incentives to marry would be lower in Comstock states. This is also what we find, Table 1, columns 4-6.

Whether the Comstock laws were actually binding is a matter of debate, but our findings are consistent with the view that these laws primarily affected married women's contraceptive access [Bailey, forthcoming]. Our findings are also consistent with the possibility that these laws themselves may not have been enforced but reflected state differences in social norms

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<sup>5</sup>A reason for focussing on the percent married by, say 18, of a law that allowed an 18-year old woman to marry, instead of the probability that an 18-year old woman married is the finding by Blank et al. [2009] that marriage age laws were not absolute barriers to marriage. A law allowing, say, an 18-year old to marry could also have made it easier for a 17-year old to marry. Typically, minimum marriage age with parental consent was a couple of years lower, and parents may have been more willing to consent to a marriage if the intending spouses were close to the age when they could marry anyway.

<sup>6</sup>While the Comstock laws were gradually lifted following *Griswold v. Connecticut*, as late as 1971, 16 states and the District of Columbia restricted or regulated the sales of contraceptives [DHEW, 1974, page 59].

[Goldin and Katz, 2002, page 734]

A second question that arises is whether ELA reduced the incentives to marry young. That is, in states where unmarried women could get the Pill, would they be less likely to marry? We estimate a variant of equation 1 and investigate the effect of all three rights – marriage, ELA and abortion – on the marriage rates at age 18 and 20:

$$\begin{aligned} \text{married by } a_{cs} = & \alpha_c + \alpha_s + \gamma I(\text{MinMarAge } a)_{cs} + \beta I(\text{ELA } a)_{cs} \\ & + \delta I(\text{Abortion } a)_{cs} + X_{cs} + \epsilon_{cs}. \quad (2) \end{aligned}$$

Table 2 first reports results when each right is entered on its own and then when all three rights are entered together. The first column present results for minimum marriage age of 18 and 20 (and thus repeats results from Table 1). In the second column, the right to ELA is entered alone and it is far from significant. The third column considers abortion rights and again we find little effect. The fourth column reports results from having all three rights entered together, and we see that only the right to marriage at age 18 is significant.

One possible reason for our finding is that marriage provided other benefits than Pill access (e.g., financial support) and perhaps these were enhanced in the era of the Pill and better fertility control.

### 3.2 Education and Occupation

We now turn to the question whether (reproductive) rights in young adulthood impacted women’s human capital and labor market outcomes. To that end, we study educational attainment and occupation as reported in the 1980 and 1990 censuses. Since these censuses do not provide age of

school completion, we cannot look at age specific rates of educational or occupational attainment. We estimate the same equation as equation 2 but replace the marriage outcome by the fraction of women of cohort  $c$ , state  $s$ , who had attained the educational or occupational status of interest: some college or more, college graduate, professional occupation (excluding nurses and non-college teachers), and doctor or lawyer. Our right hand side variables of interest are the state marriage age, ELA, and abortion laws in place at age 18 (or 20).

Table 3 presents the results for education, where panel A shows the result for the fraction with some college or more, and panel B the fraction college graduates or more. The first column shows the result for minimum marriage age of 18, column 2 those for ELA at 18, and column 3 those for abortion rights. In column 4, all rights are entered together. None of these rights, alone or together have statistically significant impact. Columns 5-8 present results for rights at age 20, and again there little evidence that these rights have impacted the fraction of women with more than high school education, with the possible exception of legal abortion at age 20 (columns 7 and 8, panel a). However, when considering the fraction women with a Bachelor's degree or more, the effect vanishes (columns 7 and 8, panel B).

In Table 4 we present the results for occupational outcomes. The result for the fraction of women in professional occupations (excluding nurses and non-college teachers), and the fraction of women college graduates who are doctors or lawyers are in panels A and B, respectively. In column 1, we see that a minimum marriage age of 18 is estimated to have a positive and statistically significant effect on the fraction of women in a professional occupation (panel A), and the effect size is substantial. Marriage age eligibility at 18 raises the probability by 0.74 percentage points, or a 5.4% increase.

For doctors and lawyers, we restrict the sample to female college graduates. Our reasons are twofold. First, although the estimated effect of marriage rights on the fraction of women who had graduated from college was positive, it failed to be significant at conventional levels. Remains the possibility that there were effects on the intensive margin, that is, changes in career trajectories among the graduates. Second, since an undergraduate degree is required to study law or medicine, this seems like a defensible limitation. Making this restriction, we find that early marriage age raises the probability by 0.3-0.4 percentage points, or a 17-21% increase (panel B). It is also interesting that for this category we find effects of minimum marriage age of 18 and 20, consistent with the fact graduate school decisions are made later. Again, we find no effect of ELA.

### 3.3 Robustness

*Timing.* The role of a specific legal rights for a cohort's marriage, education and career outcomes may also depend on what other rights were available to young women of that cohort. To investigate this possibility, we modify equation 2 to include all three laws and their four interactions terms, the triple and the three two-way interactions, that is, we estimate:

$$\begin{aligned}
 y_{cs} = & \alpha_c + \alpha_s + M(a)_{cs} + E(a)_{cs} + A(a)_{cs} \\
 & + M(a)_{cs} \times E(a)_{cs} + M(a)_{cs} \times A(a)_{cs} + E(a)_{cs} \times A(a)_{cs} \\
 & + M(a)_{cs} \times E(a)_{cs} \times A(a)_{cs} + X_{cs} + \epsilon_{cs}, \quad a = 18, 20. \quad (3)
 \end{aligned}$$

where M, E, and A abbreviate marriage, ELA and abortion rights. In the case of marriage as the dependent variable,  $y_{cs}$  is also indexed by age (sup-

pressed for notational ease), in line with the previous analysis.

The interpretation of the coefficient on the un-interacted law is the effect of that right when the cohort did not have any of the other two rights at age 18 (or 20). While the picture regarding minimum marriage age and educational outcomes remains largely intact, we note that for cohorts which could neither marry nor obtain an abortion at age 18, ELA at age 18 is positive and statistically significant for the percent women doctors or lawyers among college graduates (Table 5, column 9).

*Population Weighting.* We have performed our analysis on state-cohort cell means. A justification for doing this is that the source of variation in laws are at the state-cohort level, and therefore the state-cohort cell is the relevant unit of analysis. An alternative approach would be to weigh the observations by populations size (implicitly the case when performing the analysis at the individual level). Although we favor using the unweighted state-cohort mean, for completeness, we also performed our analysis using population weights. For marriage, our results remain qualitatively, but are weaker. By contrast, the education results are strengthened, and the marriage right at age 18 has a positive and statistically significant impact on the fraction of women with a Bachelor's degree or more. For occupational outcomes, the effect of the marriage right at age 18 remains statistically significant for professional occupation, but vanishes for women doctors and lawyers. Throughout, ELA (age 18 or 20) does not have a statistically significant effect.

*State time trends.* Ideally, we would like to be able to include state specific time trends, however, these are very collinear with marriage laws in a regression that includes state and cohort fixed effects (i.e., the variance-covariance matrix is highly singular), and therefore we cannot pursue this

direction.

*Alternative ELA coding.* We have used the ELA classification by Bailey and Guldi [2008] which defines Pill access by the female age of majority, in the case of different ages for the genders. However, as a robustness check, we also code ELA according Bailey [2006, table 1]. Generally, our results are similar using this alternative coding of ELA (not reported). We prefer the coding by Bailey and Guldi [2008] because access is defined both at ages 18 and 20, whereas the coding in Bailey [2006] is only defined at age 20.

## 4 Discussion

The introduction of the Pill, approved by the FDA in 1960, allowed women unprecedented control over their fertility. Initially, access to the Pill was largely limited to married women, and in an influential paper, Goldin and Katz [2002] argued that Pill access for unmarried women in the late 1960s altered young women’s career plans by allowing for delayed marriage and further educational and professional investments. However, it is unclear *a priori* why marriage would stand in the way of women’s educational and career aspirations, especially in the era of the Pill. In fact, Pill access may have made marriage more attractive. In this paper we have explored these hypotheses empirically.

First, exploiting changes in marriage laws that took place through the 1960s and early 1970s across states in the US, we find that a lowering of the minimum age of marriage (typically from 21 to 18) raised the marriage rates at ages 18 and 19. Importantly, these effects were absent in states with restricted contraceptive access due to the so called Comstock laws, lending further support to the hypothesis that Pill access made marriage at young

ages more attractive.

Second, we find that women with early access through marriage were more likely to have some years of college and to be in professional occupations (excluding teachers and nurses) as observed in the 1980 and 1990 censuses (at ages 31-45), and the effects are substantial. A minimum marriage age of 18 raised the probability of being observed in a professional occupation by 5%. For doctors or lawyers, we find that marriage rights at both age 18 and 20 had a large (17-21%) and statistically significant impact on the fraction of college graduates who became doctors and lawyers. Since both professions require graduate studies at selective programs, this latter finding suggests an effect on the intensive margin among college going women.

Our findings are robust to the inclusion of ELA and abortion rights as controls. Moreover, ELA laws fail to have an impact on the educational and professional outcomes of women, echoing the mixed findings of Ananat and Hungerman [2007, 2008].

A confluence of factors may have contributed to making marriage an enabler of female (economic) emancipation in the late 1960s/early 1970s. This period saw a growing disenchantment with the traditional home making role prescribed women – a realization that may have pushed more women to pursue higher education. Pill access meant that child bearing did not need to follow on the heels of marriage. And marriage, unlike ELA, may have provided key financial support at a time of limited student aid and ability to borrow against future earnings.

Our finding of Pill access raising marriage rates is likely limited to the study period. To the extent that female controlled contraceptives promoted female promiscuity (e.g., sex without the promise of marriage), (male) will-

ingness to marry might decline, as suggested by Akerlof et al. [1996], a possibly important factor in the pronounced decline and postponement of marriage seen in the decades since the Pill's diffusion among unmarried women.

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Table 1: Marriage and Rights (Minimum Marriage Age, Comstock Laws)

	Dependent Variable: Percent Married by Age $a$						
	$a=$ (mean)	18 (27.35)	19 (39.80)	20 (50.99)	18	19	20
		(1)	(2)	(3)	(4)	(5)	(6)
MinMarAge $a$		1.370** (0.634)	1.436* (0.777)	0.931 (1.027)	1.537** (0.737)	1.893** (0.869)	1.789 (1.103)
MinMarAge $a$ × Comstock					-0.970 (0.989)	-2.212** (0.984)	-3.468*** (1.113)
$R^2$		0.919	0.933	0.927	0.919	0.933	0.928

NOTE. - Data are from the 1980 IPUMS, 5% sample. Sample restricted to 1935-1959 cohorts. 1,275 (25×51) cohort-state observations. All regressions include state fixed effect and cohort dummies (not reported). All regressions include the fraction Blacks and Other Non-Whites following Goldin and Katz [2002]. Standard errors are clustered at the state level. MinMarAge  $a$  is an indicator variable which is one if the cohort in each state was allowed to marry at age  $a$ . Comstock is an indicator variable which is one if the state had a sales ban and no physician exception. The 17 Comstock states are: Arizona, California, Colorado, Connecticut, Delaware, Illinois, Indiana, Iowa, Kansas, Massachusetts, Mississippi, Missouri, Nebraska, Nevada, New Jersey, Ohio, and Wyoming. Source: Bailey [forthcoming]. \*- indicates significance at the 10 percent level. \*\*- indicates significance at the 5 percent level. \*\*\*- indicates significance at the 1 percent level.

Table 2: Marriage and Rights (Marriage, ELA, Abortion)

	Dependent Variable: Percent Married by			
	(1)	(2)	(3)	(4)
Age 18 (mean=27.35)				
MinMarAge 18	1.370** (0.634)			1.424** (0.657)
ELA 18		-0.293 (0.389)		-0.401 (0.402)
Abortion 18			0.033 (0.868)	-0.130 (0.753)
$R^2$	0.921	0.920	0.920	0.921
Age 20 (mean=50.99)				
MinMarAge 20	0.931 (1.027)			0.945 (1.033)
ELA 20		0.054 (0.360)		-0.041 (0.355)
Abortion 20			0.410 (1.680)	0.450 (1.668)
$R^2$	0.932	0.931	0.931	0.932

NOTE. - Data are from the 1980 IPUMS, 5% sample. Sample restricted to 1935-1959 cohorts. 1,275 (25×51) cohort-state observations. All regressions include state fixed effect and cohort dummies (not reported). All regressions include the fraction Blacks and Other Non-Whites following Goldin and Katz [2002]. Standard errors are clustered at the state level. MinMarAge  $a$ , ELA  $a$  and Abortion  $a$  are respectively indicators for the rights to marry, to contraception and to abortion at age  $a$ . \*- indicates significance at the 10 percent level. \*\*- indicates significance at the 5 percent level. \*\*\*- indicates significance at the 1 percent level.

Table 3: Educational Outcomes and Rights (Marriage, ELA, Abortion)

		Rights by Age $a$ :							
		$a=18$				$a=20$			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Dependent Variable: Percent Some College+ <sup>a</sup> (mean=46.5)									
MinMarAge $a$		0.729 (0.560)			0.685 (0.582)	0.735 (0.694)			0.626 (0.694)
ELA $a$			0.680 (0.628)		0.622 (0.630)		0.563 (0.618)		0.509 (0.620)
Abortion $a$				-0.791 (0.732)	-0.849 (0.695)			-0.814* (0.429)	-0.802* (0.400)
$R^2$		0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.968
B. Dependent Variable: Percent College Graduate+ <sup>b</sup> (mean=19.5)									
MinMarAge $a$		0.457 (0.557)			0.455 (0.564)	0.793 (0.795)			0.736 (0.788)
ELA $a$			0.271 (0.383)		0.231 (0.375)		0.349 (0.406)		0.280 (0.396)
Abortion $a$				-0.661 (1.233)	-0.706 (1.211)			-0.331 (0.886)	-0.303 (0.882)
$R^2$		0.884	0.884	0.884	0.884	0.884	0.884	0.884	0.885

NOTE. - Sample restricted to 1935-1959 cohorts. We use the 1980 census for the 1935-1944 cohorts, and the 1990 census for the 1945-1959 cohorts. That is, education is observed at ages 31-45. 1,275 (25x51) cohort-state observations. All regressions include state fixed effect and cohort dummies (not reported). All regressions include the fraction Blacks and Other Non-Whites following Goldin and Katz [2002]. Standard errors are clustered at the state level. MinMarAge  $a$ , ELA  $a$  and Abortion  $a$  are respectively indicators for the rights to marry, to contraception and to abortion at age  $a$ . <sup>a</sup>. One to three years of college (no degree, occupational or professional associate degree). <sup>b</sup>. Bachelor's degree or higher. \* - indicates significance at the 10 percent level. \*\* - indicates significance at the 5 percent level. \*\*\* - indicates significance at the 1 percent level.

Table 4: Occupational Outcomes and Rights (Marriage Age, ELA, Abortion)

		Rights by Age $a$ :							
		$a=18$				$a=20$			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Dependent Variable: Percent in Professional Occupations Excluding Nurses and Non-College Teachers (mean=13.8)									
MinMarAge $a$	0.740*				0.747*	0.318			0.351
	(0.383)				(0.375)	(0.551)			(0.559)
ELA $a$		-0.221			-0.272		-0.055		-0.096
		(0.269)			(0.263)		(0.302)		(0.304)
Abortion $a$			0.768		0.667			0.712**	0.735**
			(0.602)		(0.543)			(0.278)	(0.283)
$R^2$	0.848	0.847	0.848	0.849	0.847	0.847	0.847	0.848	0.848
B. Dependent Variable: Percent Doctors or Lawyers among College Graduates (mean=2.02)									
MinMarAge $a$	0.426*				0.379*	0.344*			0.366*
	(0.215)				(0.208)	(0.204)			(0.197)
ELA $a$		-0.038			-0.055		-0.006		-0.047
		(0.215)			(0.192)		(0.172)		(0.173)
Abortion $a$			1.426*		1.378*			0.643	0.665
			(0.712)		(0.688)			(0.759)	(0.762)
$R^2$	0.375	0.373	0.380	0.382	0.374	0.373	0.373	0.375	0.376

NOTE. - Sample restricted to 1935-1959 cohorts. We use the 1980 census for the 1935-1944 cohorts, and the 1990 census for the 1945-1959 cohorts. That is, occupation is observed at ages 31-45. 1,275 (25x51) cohort-state observations. All regressions include state fixed effect and cohort dummies (not reported). All regressions include the fraction Blacks and Other Non-Whites following Goldin and Katz [2002]. Standard errors are clustered at the state level. MinMarAge  $a$ , ELA  $a$  and Abortion  $a$  are respectively indicators for the rights to marry, to contraception and to abortion at age  $a$ . \*, \*\*-, indicates significance at the 10 percent level. \*\*-, indicates significance at the 5 percent level. \*\*\*-, indicates significance at the 1 percent level.

Table 5: Marital/Education/Occupation Outcomes and Rights (Marriage, ELA, Abortion)

	Dependent Variable: Percent									
	Married by Age		Some College+ <sup>a</sup>		College Grad+ <sup>b</sup>		Professional Occ. <sup>c</sup>		Doctor or Lawyer <sup>d</sup>	
	18 (1)	20 (2)	18 (3)	20 (4)	18 (5)	20 (6)	18 (7)	20 (8)	18 (9)	20 (10)
Rights by Age $a$ :										
MinMarAge $a$	1.657** (0.759)	0.996 (1.087)	0.544 (0.669)	0.486 (0.764)	0.691 (0.725)	0.695 (0.864)	0.814 (0.486)	0.355 (0.601)	0.427* (0.223)	0.404** (0.198)
ELA $a$	0.921 (0.874)	0.592 (0.499)	-0.711 (0.878)	-1.156 (1.176)	0.030 (0.996)	0.179 (1.046)	-0.063 (0.584)	-0.207 (0.561)	0.310* (0.174)	0.199 (0.384)
Abortion $a$	-0.577 (0.877)	(dropped)	-0.458 (0.945)	(dropped)	0.431 (1.626)	(dropped)	0.205 (0.954)	(dropped)	2.148** (1.006)	(dropped)
MinMarAge $a \times$ ELA $a$	-1.461 (0.882)	-0.694 (0.618)	1.478 (0.941)	1.749 (1.163)	0.186 (1.060)	0.152 (1.033)	-0.309 (0.621)	0.090 (0.606)	-0.364 (0.220)	-0.294 (0.385)
MinMarAge $a \times$ Abortion $a$	0.654 (0.697)	-0.166 (0.684)	-0.337 (0.799)	-1.659** (0.721)	-1.358 (1.245)	0.692 (1.196)	-0.062 (0.971)	-0.027 (0.277)	-0.675 (2.036)	-0.167 (0.322)
ELA $a \times$ Abortion $a$	-1.000 (1.210)	-0.708 (2.144)	1.855* (1.038)	0.334 (1.142)	1.699 (1.541)	-1.088 (1.238)	0.672 (0.696)	1.004 (0.606)	-1.310 (1.219)	0.646 (0.921)
MinMarAge $a \times$ ELA $a \times$ Abortion $a$	0.708 (1.343)	1.570* (0.787)	-2.024* (1.163)	0.741 (1.311)	-1.338 (1.889)	-0.250 (1.485)	0.273 (1.244)	0.013 (0.535)	1.153 (2.036)	0.482 (0.534)
$R^2$	0.930	0.930	0.969	0.969	0.885	0.885	0.849	0.848	0.383	0.377

NOTE. - Sample restricted to 1935-1959 cohorts. Marriage rates are generated using the 1980 IPUMS, 5% sample. Education and occupation rates use the 1980 census for the 1935-1944 cohorts, and the 1990 census for the 1945-1959 cohorts. That is, education and occupation are observed at ages 31-45. 1,275 (25×51) cohort-state observations. Results are from estimating equation 3. For the case of rights at age 20, MinMarAge 20×ELA 20×Abortion 20 is collinear with MinMarAge 20×Abortion 20 + ELA 20×Abortion 20 - Abortion 20. All regressions include state fixed effect and cohort dummies (not reported). All regressions include the fraction Blacks and Other Non-Whites following Goldin and Katz [2002]. Standard errors are clustered at the state level. MinMarAge  $a$ , ELA  $a$  and Abortion  $a$  are respectively indicators for the rights to marry, to contraception and to abortion at age  $a$ . <sup>a</sup> - One to three years of college (no degree, occupational or professional associate degree). <sup>b</sup> - Bachelor's degree or higher. <sup>c</sup> - Excluding Nurses and Non-College Teachers. <sup>d</sup> - Among women with Bachelor's degree or more. \* - indicates significance at the 10 percent level. \*\* - indicates significance at the 5 percent level. \*\*\* - indicates significance at the 1 percent level.

## Appendix

Table A-1: Minimum Age Marriage Women, without Parental Consent

State	Year	Age	Change <sup>a</sup>
South Carolina	1957	18	4
Mississippi	1958	15	-3
Georgia	1965	19	1
Kentucky	1968	18	-3
Hawaii	1969	18	-2
Nebraska	1969	20	-1
Montana	1971	19	1
Iowa	1972	19	1
Virginia	1972	18	-3
Connecticut	1972	18	-3
Rhode Island	1972	18	-3
Georgia	1972	18	-1
Pennsylvania	1972	18	-3
Louisiana	1972	18	-3
Nebraska	1972	19	-1
West Virginia	1972	16	-5
Iowa	1973	18	-1
Montana	1973	18	-1
Alaska	1974	19	1
Alaska	1975	18	-1
Wyoming	1975	19	1
Florida	1977	18	-3

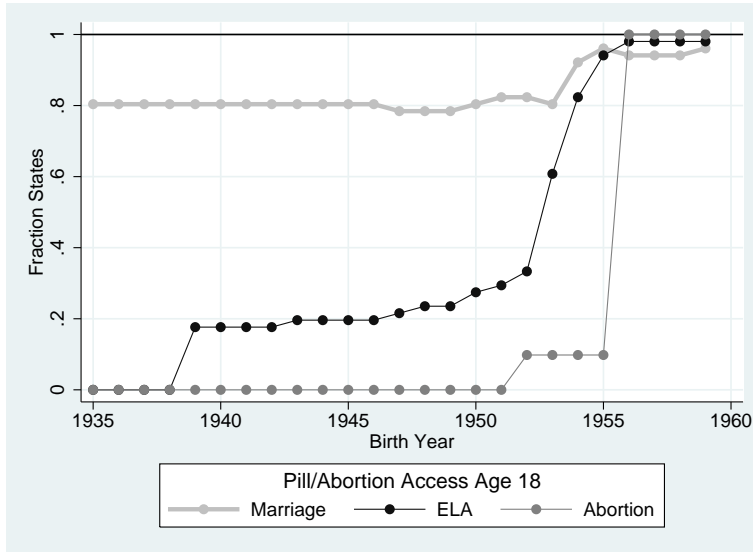
Source: Blank et al. [2009], online data set. <sup>a</sup>- Change in years. For example, South Carolina's minimum age went from 14 to 18 in 1957.

Table A-2: States and Years for Which a Right was the First and Only Right

	ELA	Abortion	Marriage
Age 18	CT(1971,1)	NE(1974,4)	States: 42
	FL(1973,1)		Avg Period: 14.95
	GA(1968,4)		Obs: 628
	KY(1965,3)		
	MT(1960,2)		
	PA(1970,2)		
	VA(1971,1)		
Age 20	CT(1971,1)	-	States: 43
	FL(1973,1)		Avg Period: 12.86
	KY(1965,3)		Obs: 553
	PA(1970,2)		
	VA(1971,1)		

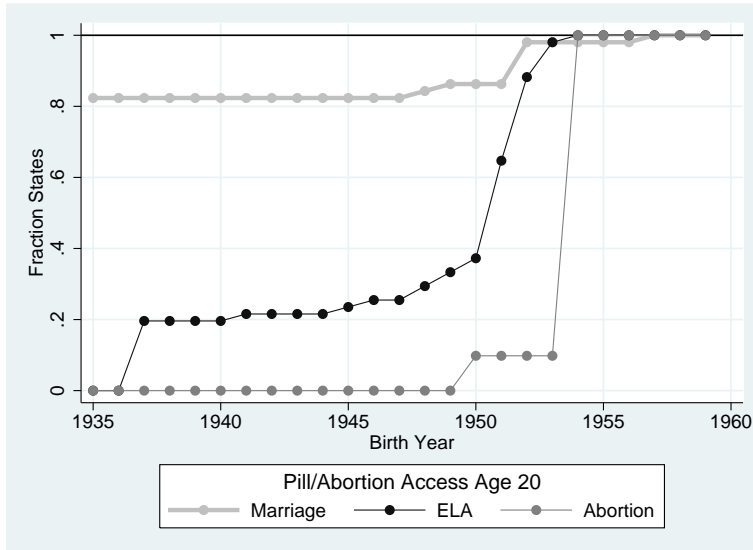
NOTE.- For ELA and abortion, this table gives the states and periods the respective right was the only right an 18 or 20 year old woman had. For instance, for only one state (Nebraska) and four years (1974-1978) was abortion the only right an 18 year old woman had (among ELA, abortion and marriage). For marriage, we do not list the individual states, but give their number as well as the average number of years for which marriage was the only right (among ELA, abortion and marriage) an 18 or 20 year old woman had in this state. For ELA18 and ELA20, the source is Bailey and Guldi [2008].

Figure A-1: Cohort Pill and Abortion Access at Age 18



Source: Blank et al. [2009], Bailey and Guldi [2008], Gruber et al. [1999].

Figure A-2: Cohort Pill and Abortion Access at Age 20



Source: Blank et al. [2009], Bailey and Guldi [2008], Gruber et al. [1999].