

# Summary sheet

## 'The Power of the Pill: Oral Contraceptives and Women's Career and Marriage Decisions'

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### Abstract

The fraction of U.S. college graduate women entering professional programs increased substantially just after 1970, and the age at first marriage among all U.S. college graduate women began to soar around the same year. We explore the relationship between these two changes and the diffusion of the birth control pill ("the pill") among young, unmarried college graduate women. Although the pill was approved in 1960 by the Food and Drug Administration and spread rapidly among married women, it did not diffuse among young, single women until the late 1960s after state law changes reduced the age of majority and extended "mature minor" decisions. We present both descriptive time series and formal econometric evidence that exploit cross-state and cross-cohort variation in pill availability to young, unmarried women, establishing the "power of the pill" in lowering the costs of long-duration professional education for women and raising the age at first marriage.

## 1 Introduction

### 1.1 Research Question

Whether **the birth control pill and the legal environment** that enabled young, unmarried women to obtain "the pill" altered women's **career plans and their age at first marriage**.

### 1.2 Motivation, Background and Institution

#### 1.2.1 Motivation

- The fraction of U.S. college graduate women entering professional programs increased substantially just after 1970. (Fig. 4)
- The age at first marriage among all U.S. college graduate women began to soar around the same year. (Fig. 5)

#### 1.2.2 Institution

- In 1960, the use of "the pill", as an oral contraceptive for women, was approved by FDA.

- But late dissemination of the pill among *young, single* women: Until the late 1960s, single women who were below the age of majority and did not have parental consent were often denied access to the pill and other forms of contraception.
- Changes:
  1. The "age of majority" had been lowered to 18 y.o. in most states between 1969 and 1974.
  2. Beginning in the late 1960s, "mature minors" in many states were enabled to obtain contraceptive services without parental consent.

As a result, a woman of 18 could legally obtain the pill in 9 states in 1969, in 30 states in 1971, and in all states but two in 1974.

- The main reason was the war in Vietnam, not motivated by demands for teenage contraception.

### 1.2.3 "First stage" (Fig. 1, 2, Tab. 3)

- Pill use by unmarried, college-educated women between 18 and 21 years old accelerated with cohorts born around 1948. For those younger than 18 years, pill use increased greatly with cohorts born around 1952.
- Peak usage among married women occurred about a half decade before rapid diffusion began for single women.
- One reason for the difference concerns state laws regarding the age of majority and mature minor statutes.

## 1.3 Framework

- Direct: The pill enabled young men and women to put off marriage while not having to put off sex. It makes marriage delay and thus career investment deeper.
- Indirect: The pill thickened the marriage market for those who delay marriage and leads to better matches for career women and some others. The decrease in the cost of marriage delay altered the rankings of women as potential marriage partners and favored those with good career prospects.

## 2 Evidence

### 2.1 Descriptive time-series evidence

Career Fig. 4

- A sharp rise in women's presence in law, medicine, and other professions starting around 1970.

**Marriage related** Fig. 5, 6

- The fraction of women who married about a year after college graduation declined precipitously after 1972.
- Sexual activity among the group under 20 years increased with cohorts born after 1947, and even for the younger group (under 18 years) the increase began with cohorts born around 1952.
- Fewer children desired by non-Catholic female college students from 1963 to 1973.

## 2.2 Formal econometric analyses

### 2.2.1 Age at first marriage

**Data** 1980 US population census

**Identification** DID (cross-state variation in the timing of the enactment of laws giving minors access to birth control services without parental consent)

$$M_{isy} = \alpha_s + \delta + y + X_{isy}\beta + P_{sy}\gamma + A_{sy}\pi + \epsilon_{isy}$$

$i$ : individual,  $s$ : state of birth,  $y$ : year of birth,  $M_{isy}$ : dummy = 1 if individual  $i$  is married before 23,  $P_{sy}$ : dummy = 1 if  $i$ 's state of birth had a nonrestrictive birth control law for minors at the time  $i$  was 18.

**Results** Table 4

- The adoption of a nonrestrictive birth control law for minors was associated with a modest (but statistically significant) *two-percentage-point decline* in the probability that *a college graduate woman was married before age 23*. Improved pill access for minors in a state generated a change of 24-37 percent of the 8.7-percentage-point total decline.

### 2.2.2 Long-run career and marital status

**Data** 1970, 1980, and 1990 US population censuses. 20 age groups (30-49).

**Identification** Aggregate Cohort Analysis (between-cohort changes)

$$Y_{at} = \alpha_a + \delta_t + X_{at}\beta + P_{at}\gamma + A_{at}\pi + \epsilon_{at}$$

$a$ : age,  $t$ : census year,  $Y_{at}$ : the share of age group  $a$  experiencing a particular career or marital status outcome in year  $t$ ,  $P_{at}$ : access to or usage of birth control for cohort members as young women.

**Results** Table 5

- Career: The growth in pill usage accounts for a *1.7-percentage-point increase* in the share of women *working in professional occupations* across these cohorts out of an overall increase of five percentage points for these age groups from 1970 to 1990.

- Career: Improved pill access from the pre-1940 to the mid 1950s birth cohorts explain an increase in the share of college women as *lawyers and doctors* of 1.2 to 1.6 percentage points as compared with an overall increase of 1.7 percentage points from 1970 to 1990.
- Marital status: access to birth control is associated with an *increase in the share never married*, has a trivial impact on the share currently married but a substantial *negative effect on the share currently divorced*.

### 3 Other Discussions

#### 3.1 Alternative explanations

Abortion reform, changes in the "sex-ratio", resurgence of feminism in America, sex discrimination legislation, draft deferments for graduate and some professional students.

#### 3.2 Extensions

- Marriage and fertility rates decreased at other times in U.S. demographic history but did not lead to vast increases in the fraction of women in professional occupations.
- Japanese women experienced a substantial decline in fertility and an increase in the age at first marriage from the early 1970s. Yet women's economic status in Japan has seen little change, and, until 1999, oral contraceptives were not legally available.