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Career and Marriage in the Age of the Pill

By CLAUDIA GOLDIN AND LAWRENCE F. KATZ*

Genuine change in the economic and social status of U.S. women did not emanate simply from their increased labor-force participation, but rather, from their increase in professions and as “career women.” Those changes first began in the late 1960’s and early 1970’s. We examine here one factor of momentous importance in this break with the past. *The Economist* (31 December 1999) recently named it the greatest science and technology advance in the twentieth century. It is the oral contraceptive, known worldwide by its moniker “the pill.”

In 1960, 18.4 percent of professionals were women, as were 4.7 percent of “high-powered professionals.”¹ By 1998, 36.4 percent of professionals and 25.1 percent of the high-powered subset were women. We explore in this article a series of connections that link the birth-control pill to the increase of women in professional occupations.

Our evidence for the impact of the pill relies largely on the timing of various changes. Changes in laws giving minors certain adult rights and lowering the age of majority enabled young and unmarried women to obtain the pill. Young women’s control over their fertility directly reduced the costs to them of engaging in long-term career investments. The pill also served to increase the age at first marriage and thus indirectly reduced a potential penalty of delaying marriage to pursue professional education and training. All of these changes began in the late 1960’s and early 1970’s.

The late 1960’s and early 1970’s were years

of tumultuous social and political change. How can we separate the impacts of affirmative action, the resurgence of feminism, changes in social norms, and abortion reform from the impact of the pill? The simple answer is that the timing of several of these changes is far less convincing than is that of the pill in affecting career investment. But that is not the complete answer. The economic impact of the pill did not occur in isolation. Legal change made it possible for young women to obtain contraceptives. These changes, paradoxically, did not stem primarily from concerns regarding access to contraception. They were, instead, part of the larger political movement of the 1960’s. The pill, moreover, unleashed social change by enabling an increase in the age at first marriage. There is also no doubt that the rebirth of feminism, long in the making, served to complement and reinforce the pill’s impact.

Our argument for the importance of the pill in affecting women’s career decisions relies on the correspondence among breaks in various time series and in the logic of the relationships among the pill, career, and marriage. We will begin with the time series on career and marriage, which can be viewed as the dependent variables. The evidence on the diffusion of the pill (the independent variable) is taken up next. The logic of our argument relating pill use, career, and marriage follows, and finally we present our defense for why we believe the pill packed considerable power in altering the social and economic status of American women.

I. Career and Marriage

The break with the past in women’s career investment can be seen most clearly in the time series for female relative to male first-year professional students. Figure 1 provides the ratio of female to male first-year students in medical, law, and dental schools, and in masters in business administration (MBA) programs. The ratios for all programs show a sharp break around 1970. Whereas throughout the 1960’s the ratio

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¹ Professionals are all those in professional specialty occupations (based on the 1990 Census classification) excluding teachers below the college level and health-assessment occupations such as nurses. “High-powered professionals” includes lawyers, judges, physicians, dentists, architects, engineers, scientists, and college and university teachers.

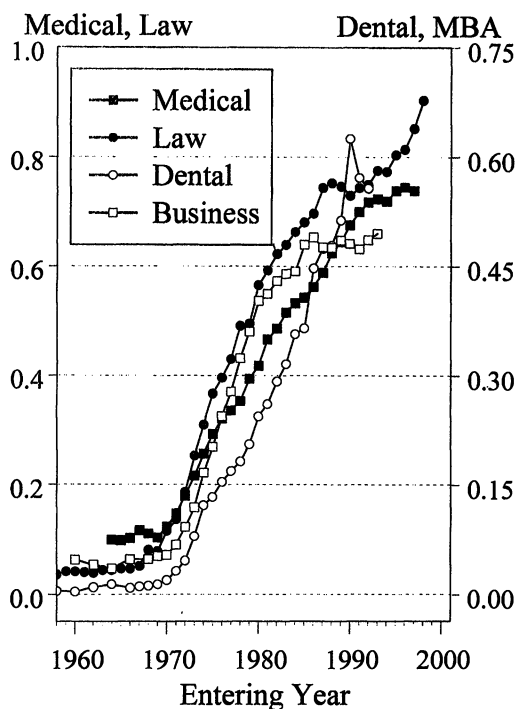


FIGURE 1. RATIO OF FEMALE TO MALE FIRST-YEAR MEDICAL, LAW, DENTAL, AND MBA STUDENTS

Note: See Goldin and Katz (2000) for details and sources.

of women to men was around 0.1 in medicine, 0.04 in law, 0.01 in dentistry, and 0.03 in business administration, by 1980 it was 0.42 in medicine, 0.57 in law, 0.24 in dentistry, and 0.39 in business. (In the 1970's, law and MBA programs were the largest among the four, each having between 35 percent and 45 percent of the total, whereas medicine had about 15 percent and dentistry just 5 percent.)

The age at first marriage for college graduate women soared from 1972 to 1979, when the fraction marrying before age 22 plummeted from 0.38 for the cohort born in 1950 to 0.21 for the cohort born in 1957. Similarly, the fraction marrying before age 26 declined from 0.70 for the cohort born in 1950 to 0.54 for that born in 1957. In sharp contrast, there was virtually no change in the age at first marriage of college graduate women born from 1940 to 1950. Thus, starting with the cohorts of college-graduate women born in 1950 there began a strong secular trend toward greater mar-

riage delay. Similar, although less pronounced, changes occurred for women with no college.

Fertility expectations also plunged from the mid-1960's to the early 1970's. Among non-Catholic female college students in 1963, 80 percent desired three or more children, and 44 percent wanted at least four. By 1973, just 29 percent wanted three or more, and almost 10 percent wanted no children. None of these cohorts had as many children as they "desired," but their desires reflected what they perceived the trade-offs were between family and career.

What can account for these sudden changes in marriage, fertility, birth expectations, and career? Abrupt shifts in fertility and marriage were not new to American women, but such change had not previously been associated with major change in women's careers. The timing of these changes corresponds remarkably well with greater access to the pill by young single women. The pill, because of its reliability, ease of use, and female control, enabled young women to plan their reproductive lives almost flawlessly and to delay marriage to pursue career training. The pill had been available to married women since 1960, but for legal reasons and in accordance with prevailing social norms, it was often denied to women below the age of majority and those who were unmarried.

II. The Age of the Pill

The Food and Drug Administration (FDA) approved the pill for contraceptive use in 1960, and its diffusion was so rapid that, by 1965, 40 percent of young married women, using some form of contraception, were "on the pill." But if the pill was released in 1960 and was immediately taken up by married women, why do we claim that it was instrumental to the change in women's professional training that began around 1970? The reason is that young unmarried women were not enabled to obtain the pill until the late 1960's and early 1970's, when almost all states lowered the age of majority and granted to youth the rights of adults through "mature minor" decisions. These law changes, moreover, did not largely emanate from a desire to extend family-planning services. Rather, they were often motivated by factors similar to those that led to the speedy ratification of the 26th

Amendment (1971), which lowered the voting age to 18. Due in part to the national debate over the Vietnam War, a consensus was formed that young people matured earlier than in past generations and deserved increased rights.

The pill altered women's career decisions, beginning with the cohorts of young unmarried women in the mid- to late-1960's who were enabled to obtain the pill. We emphasize young and unmarried women because their changed perceptions of marriage and fertility enabled them to plan lives that were different from those of previous cohorts and to do so early in their personal development. Women in professional education programs, moreover, were and still are disproportionately unmarried.

Because there are no surveys of pill usage that also contain information on the age at first marriage for the birth cohorts of interest here, we use a data set (the National Survey of Family Growth, Cycle III, 1982 [Inter-university Consortium for Political and Social Research, 1985]) giving the earliest age at which family-planning services were obtained by unmarried college graduate women (see Fig. 2). We have also compiled data (not presented here) on young women's take-up rate for the pill. These series taken together show that the diffusion of the pill among young unmarried women occurred more than five years later than it did among married women.

The timing of the change for unmarried women coincided with legal shifts concerning the rights of minors and the age of majority. Only three states in 1969 had a clear and unambiguous law enabling females younger than age 17 to obtain contraceptives; such laws existed in 12 states in 1971, and in 27 states in 1974. The age of majority for women was younger than 20 years old in just seven states in 1969; it was younger than age 20 in 18 states in 1971, and in 43 states in 1974. University family-planning clinics that provided students with contraceptives without regard to age and marital status were first opened in 1969. The determined unmarried and young woman probably could have obtained the pill before these legal changes in any state. But we have demonstrated, in a cross-sectional analysis for 1971, that pill use among young women was considerably higher in states having more lenient laws regarding the rights of minors.

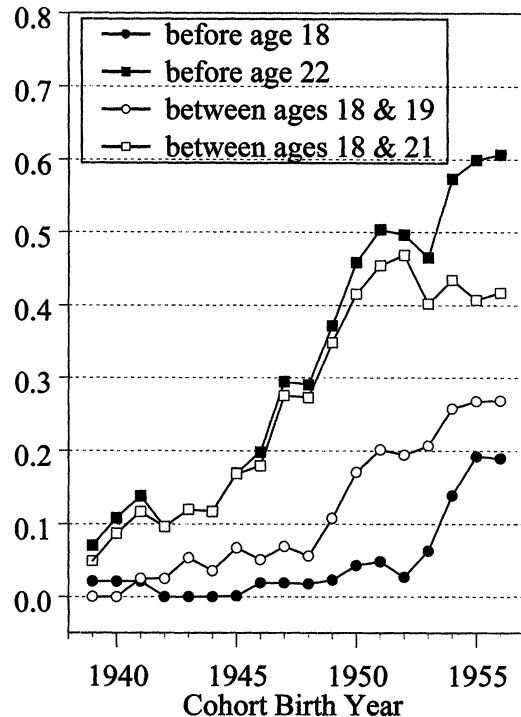


FIGURE 2. FRACTION OF COLLEGE-GRADUATE WOMEN FIRST RECEIVING FAMILY-PLANNING SERVICES, BY VARIOUS AGES, AMONG THOSE NOT MARRIED BY AGE 22

Source: National Survey of Family Growth, Cycle III, 1982 (Inter-university Consortium for Political and Social Research, 1985).

Thus far, we have established that the rapid increase in the education of women for professional careers began in about 1970 (i.e., for cohorts born around 1948), that the diffusion of the pill among young unmarried women increased greatly starting with the 1946–1948 birth cohorts, and that the increase in pill use was correlated with legal changes across states. We have also shown that the age at first marriage began to soar with cohorts born in 1950, and we have elsewhere related the diffusion of the pill (as proxied by the state-law changes) to cross-state differences in the increase in the age at first marriage. But how do these facts fit together? How did the pill affect career decisions?

III. Direct and Indirect Effects of the Pill

The diffusion of the pill among young single women may have altered their career decisions

through two routes, which we term the *direct* and the *indirect* effects (see Goldin and Katz [2000] for a more explicit and complete model).

The pill greatly increased the reliability of contraception and its ease of use. In the absence of reliable contraception, a young woman embarking on a lengthy professional education would have to pay the penalty of abstinence or cope with considerable uncertainty regarding pregnancy. The pill, therefore, enabled a larger group of women to invest in expensive, long-duration training and not pay as high a price. This direct effect of the pill lowers the price to women of long-duration education.

The pill affected all women, not just career women, and it affected men as well. The pill, moreover, affected women who were never "on the pill." With the advent of the pill, some men and women could decide to delay marriage yet not pay as large a penalty as previously. Marriage delay, in turn, could affect the career decisions of young women through the marriage market. Women who invest in a lengthy education often delay marriage until completing their initial career preparation. If in the interim others marry, the pool of eligible bachelors will be reduced, and career women may have to settle for a lesser match at the end of the career-training period. If, instead, the pill enables others to delay marriage long enough, the career women will pay a smaller penalty. Thus the pill, by encouraging the delay of marriage for youth, may have enabled more women to opt for careers by indirectly lowering the cost of a lengthy career-investment period. This effect results from the creation of a "thicker marriage market" for women with career potential. Even women not taking the pill can benefit from the pill if they want to delay marriage to invest in long-duration training.

IV. The Power of the Pill

Our empirical argument for the role of the pill in the increase of women in professions relies primarily on the timing of various changes. Legal changes in the late 1960's and early 1970's enabled the diffusion of the pill among young single women, and their pill use began to increase with cohorts born around 1948. Beginning in 1972, and continuing to 1979, the fraction of college women marrying a year or

two after graduation plummeted. The pill encouraged the delay of marriage through routes such as reducing the necessity of marrying to have sex and lowering the incidence of shotgun marriages. (In our longer paper we further establish, through cross-state panel-data regressions, the connection between the access of young women to the pill and the age at first marriage.)

The pill directly and immediately lowered the costs to women of engaging in long-term career investments by giving them almost complete certainty and safety regarding the pregnancy consequences of sexual activity. The delay of marriage, beginning a year or two later, endowed the pill with an indirect effect by reducing the costs in the marriage market to women who delayed marriage to invest in careers. The ratio of women relative to men in professional programs began its rapid ascent in 1970, just as the first pill cohorts graduated from college. The case for the pill in affecting women's careers through the direct and indirect routes is strong. But it is not the only possible factor.

There is also abortion, legalized nationwide in 1973 and earlier in several states. However, we have found that abortion was not as powerful as was the pill in encouraging later marriage, although its impact on careers may have complemented that of the pill (see also George A. Akerlof et al. [1996] on abortion and marriage). The case of Japan is instructive. Japan had an increased age at first marriage and a reduced birth rate but no pill, until 1999, and no wide-ranging career change. Japanese women did have legal abortion, however. Fertility reduction and later marriage ages do not require the pill. But the reliability and general safety of the pill enable women to better plan for careers at an early stage and be taken more seriously by mentors, schools, and employers (see Nancy Birdsall and Lauren A. Chester, 1987).

The late 1960's and early 1970's were times of great ferment in U.S. society. Just as the war in Vietnam was a catalyst for change in the age of majority and mature-minor decisions, it and the Civil Rights movement were catalysts for the resurgence of feminism. Young women in 1968 had hoped to follow in their mothers' footsteps, but in just a few years their aspirations had changed radically. How much of this change was due to the resurgence of feminism,

general social change, and the legacy of the Civil Rights movement (all reinforced later with policy changes such as affirmative action), and how much was due to a little pill? We have concluded that there is considerable evidence that the pill had a surprisingly large effect on career and marriage, but there are a host of interactions and feedback mechanisms that must also be considered.

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