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The effect of abortion legalization on fertility, marriage and long-term outcomes for women

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The Effect of Abortion Legalization on Fertility, Marriage and Long-term Outcomes for Women[ℵ]

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Abstract: We evaluate the short- and long-term effects for women of access to subsidized, legal abortion by exploiting the Spanish legalization of abortion in 1985. Using birth records and survey data, we find robust evidence that the legalization led to an immediate decrease in the number of births to women aged 21 and younger. This effect was driven by provinces with a higher supply of abortion services. In those regions, young women affected by the reform were also less likely to marry. Using data from the Labor Force Survey and exploiting the rollout of abortion clinics across provinces and over time, we find evidence that the affected cohorts of women, who were able to postpone fertility as a result of the legalization of abortion, achieved higher educational attainment and had higher life satisfaction 20 years after the reform. We do not find evidence of increases in the probability of being employed.

KEYWORD: Abortion, fertility, education and labor market outcomes, satisfaction

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1. Introduction

Most countries in the world allow abortion in order to save a woman's life. However, only 30% of all countries permit access to abortion on request, and 35% of them require economic or social reasons to grant access to abortion practices. Between 1996 and 2011, several countries reformed their legal regulation of abortion, some to liberalize and others to restrict access to abortion practices (see the UN World Abortion Policies report released in 2013).

Access to abortion has been subject to debate in many countries, but what do we know about the potential impact of regulating abortion practices? The literature on the impacts of abortion legalization laws has focused either on the short-term effects on fertility, or on the short and long-term effects on children born after a given reform has been introduced. In this paper, we focus on the identification of the short- and long-term effects on women, exploiting the liberalization of abortion practices that was introduced in Spain in 1985. We first estimate the effects of abortion legalization on fertility and marriage behavior in the short term, then we study impacts on long-term outcomes, including completed fertility, educational attainment, and labor market outcomes of the cohorts of women exposed to the reform.

A previous literature has focused on the impact of abortion laws on fertility behavior. Most of the papers taking this approach in the literature use US restrictions to abortion access at the state level as a natural experiment to analyze the short-term effects of abortion legalization on fertility behavior. These papers typically use changes across US states on Medicaid abortion funding restrictions (Levine et al. 1996, Klerman 1999), on parental consent laws (Haas-Wilson 1996) or on the geographical distance to the abortion provider, either alone (Joyce et al. 2013, Cunningham et al 2017) or combined the other two changes (Kane and Staiger 1996). Most of those papers conclude that access to abortion reduces fertility. The effects are generally concentrated among teens and poorer women (see Bailey and Lindo, 2017, for a summary of this evidence). Of particular interest for our identification strategy are Joyce et al. (2013) and Cunningham et al (2017). Joyce et al. (2013) use the two supply shocks following early legalization of abortion in New York and then national legalization to identify the effect of distance to a legal abortion provider on both abortion and birth rates. They find that abortion rates fell 12.2 percent for every hundred miles a woman lived from the state. The abortion rates of nonwhites were more sensitive to distance than those of whites. They also find a positive and robust association between distance to the nearest abortion provider and teen birth rates. Cunningham et al (2017) evaluate the effect of abortion-clinic closures on abortion using a recent Texas reform. They find a substantial, non-linear, effect of distance on abortion rates. However, the final effect on birth rates is unclear.

Similar reductions in fertility rates are found for a policy change in Romania in 1989, which lifted a ban that restricted access to abortions (Pop-Eleches 2010). A recent paper by Clarke and Mühlrad (2016) estimates the impact of a free abortion program introduced in Mexico City in 2007 on fertility and maternal mortality. They report that access to legal and safe abortion resulted in decreased fertility as well as lower rates of maternal mortality. Antón et al. (2016) exploit a unique administrative register of births in Uruguay that distinguish between planned and unplanned pregnancies to estimate the effect of an abortion reform in Uruguay on the quantity and quality of births in the short run. They find a 8% decline in the number of births of unplanned pregnancies and an increase in the average quality of births in terms of more intensive prenatal control care and a lower probability of having a single mother.

A second strand of the literature has used major changes in abortion legislation laws to analyze the impact of abortion on the characteristics of the cohort of affected children, such as education, employment, poverty or crime rates. Ananat et al. (2009), Gruber at al. (1999) and Donohue and Levitt (2001) use the Roe vs. Wade case that legalized abortion in the United States territory in 1973, while Pop-Eleches (2006) uses an abortion ban introduced in Romania in 1966. For the US, the papers find evidence of selection effects: children born after the reform are less likely to be part of a household receiving welfare, a single-parent household, or a poor household (Ananat et al. 2009, Gruber et al. 1999). Donahue and Levitt (2001) also find that crime rates significantly decrease for the cohorts of affected children.

Currie et al. (1996) exploit the introduction of restrictions on Medicaid funding for abortion and the differential implementation of this restriction across US states on infant health outcomes. They find only weak support for the hypothesis that funding restrictions reduce average birth weight and are unable to detect any effect on the probability of low birth weight. They also find some evidence that abortion restrictions may be endogenous so that the estimated effects may reflect omitted characteristics of the states.

Pop-Eleches (2006) shows that the introduction of an abortion ban in Romania led to an increase in the educational and labor market achievements of children born just after the policy change. This result can be explained by an increase in the proportion of urban, more educated women having children (who were more likely to have abortions before the introduction of the reform). He also reports that, conditional on family background, children born after the abortion ban performed worse in terms of schooling.

David (2006) compares mothers whose request for termination of an unwanted pregnancy was denied twice with others who did not request an abortion (matched control group) in Czechoslovakia. He follows the children of unwanted and wanted pregnancies at later ages in life, and compares the psychosocial and mental wellbeing of the two groups of individuals. He finds that the group of unwanted children became psychiatric patients more often.

Thus, the literature on the effects of abortion laws consistently reports sizeable reductions in fertility rates (mainly in the short-term) for the affected women, as well as important composition effects for the cohorts of children born after the reforms (as compared to the cohorts born before). However, little is known about the long-term impacts for women who were exposed to stricter vs. more lenient abortion laws. Women facing different abortion policies may see their long-run educational and employment prospects affected. Related to our work, an extensive literature for US has evaluated the effect of the introduction of the contraceptive pill showing that having more control over fertility decisions allowed women to delay their marriage and first births, and increased women's human capital accumulation, labor force participation, wages and occupational diversity (see for example Goldin and Katz, 2002; Bailey, 2006, 2010 and 2012). Myers (2017) find evidence suggesting that these effects are explained by the abortion liberalization rather than the introduction of the pill.

In Spain, abortion was legalized in 1985 (under specific circumstances). In order to identify the effects of interest, we exploit the fact that the actual provision of abortion services (in public and private health centers) was staggered over time across Spanish geography, so that during the initial years after the reform, some women would have had easier access to abortion services, depending on their municipality of residence.

Our identification strategy thus relies on comparing cohorts of women of different ages at the time of the reform, and living in areas where abortion clinics started operating at different points in time. Younger women living in an area with a nearby abortion clinic that started operating shortly after the reform are considered more "exposed" to the legalization of abortion, as compared to women who were older (and thus were only affected during part of their fertile life) and/or living very far from an abortion clinic in the years after the reform.[1]

Of course, it may be that the timing of the actual provision of abortions services at the local level was driven by underlying demand factors. We deal with this concern in two ways. First, we test for parallel trends in fertility before the introduction of the reform. Second, we control explicitly for demand factors, such as religiosity, interacted with the reform, so that we are left with variation driven by idiosyncratic variation in the supply of abortion services at the local level.

We first use Spanish birth-certificate data to study short-term reproductive outcomes. We find robust evidence that the reform led to an immediate drop in the number of births to younger women. We find that the effects are larger in areas in which an abortion clinic is available and/or the distance to a clinic is smaller (as in Cunningham et al, 2017). We then follow the same empirical strategy and use marriage registry data to evaluate whether the legalization had an immediate effect on marriages. Our results show that the number of marriages also dropped for young women in areas with a stronger supply of abortion clinics.

Since women who were very young when abortion was legalized were able to postpone fertility, we then evaluate whether this translated into completed fertility, educational attainment, and labor market outcomes 20 years later. Using data from birth registries as well as census data we find that the affected cohorts have lower completed (accumulated) fertility at younger ages that disappears as they get older. Furthermore,

[1] It is important to note that our results would not be much affected by the Spanish liberalization of the pill in 1978. First because there is anecdotal evidence that the use of the pill was quite extended since 1965, when gynecologists were authorized to prescribe oral contraception for "menstrual irregularities". Therefore, all the cohorts of women included in our analysis would have been exposed to the pill when they were young. In addition, the correlation between the use of the pill in 1984 and the supply of clinics across Spanish regions was relatively low (0.37).

using data from the Spanish Labor Force Survey and ECHP we find evidence that the affected cohorts achieved higher educational attainment and had higher levels of life satisfaction 20 years after the legal reform. Finally, we do not find increases in the probability of being employed for affected cohorts.

The paper is organized as follows. In the next section we briefly describe the 1985 legalization of abortion in Spain. In section 3 we evaluate the short-term effects on fertility and marriage. Section 4 presents the results on long-term outcomes, and section 5 concludes.

2. The legalization of abortion in Spain

Abortion was banned in Spain until 1985. In October 1982, the Socialist Party won the national election with a large majority, and in January 1983 the Health Minister announced that abortion would be legalized. A draft of the law was approved in the national Parliament in October. However, in December 1983 the law was challenged by a number of conservative legislators, and sent to court with the argument that it was unconstitutional. In April 1985, the High Court upheld the charges. However, the government announced that they would make some minor changes to the writing of the law in order to make it constitutional. In late May 1985, the new draft was approved in parliament. The law was finally passed in July, and became effective in August 1985.

The organic law 9/1985 amended the article 417bis of the Spanish Criminal Code, and since then induced abortions are allowed under certain circumstances. Specifically, since August, 1985 abortions were allowed when: 1) there is serious risk to the physical or mental health of the pregnant woman, 2) the woman became pregnant as a result of rape, provided that the abortion is performed within the first twelve weeks of gestation and the rape has been reported; or 3) there is risk of malformations or defects, physical or mental, in the fetus, provided that the interruption is done within the twenty two first weeks of gestation. In the first and third cases, a medical report was required to certify compliance with the conditions laid down by law. In the three cases, abortion was not punishable if undertaken by a doctor, or under their supervision, in a medical establishment approved for abortions, whether public or private, with the express consent of the woman.

In practice, about 98% of all abortions reported between 1986 and 2010 were filed under “risk to the health of the mother”. Many of those cases argued risks to the mother’s mental health, as confirmed by a psychologist, and this was easy to argue for unwanted pregnancies.

Figure 1 shows the annual number of registered abortions, as reported by the Spanish Ministry of Health. By 1992, one out of every 10 pregnancies was terminated legally (45,000 annual registered abortions, for under 400,000 live births). By 2011, it was 1 out of every 5 pregnancies.

In 2010 a new law was passed which decriminalized the practice of abortion during the first 14 weeks of the pregnancy without any need for a special circumstance (as in the 1985 law). In 2013 there was an attempt to abolish the 2010 law by re-introducing the requirement for women to argue the grounds for their decision to abort. This decision would only be legal in cases of rape or serious health risk to the mother. However, this draft law was never approved by the parliament and in 2014 the government announced that it abandoned the draft law due to lack of consensus.

3. Short-term effects

3.1. Fertility and marriage

Empirical strategy

We first study the effects on the reproductive outcomes of women. The abortion law was implemented in August 1985. Abortions taking place in and after August 1985 would have led to fewer births a few months later.[2] To make sure that we are able to capture all abortions occurring after the law (even those at unusually late stages of the pregnancy) in our empirical approach, we analyze the time series of births over time, and we look for a break around December 1985, controlling for seasonality.

To this end, we use micro-data on all births taking place monthly in Spain,

[2] When exactly? The abortion data (which start only in 1992) show that, in every year since 1992, more than 95% of all registered abortions take place before week 17 of the pregnancy. In turn, the birth-certificate data for 1986 show that about 95% of all births take place after week 35 of the pregnancy. The first registered legal abortions took place on August 9, 1985. An abortion that took place on August 9, 1985 at weeks 7-16 of pregnancy would have led to a birth on weeks 36-42 of the pregnancy, i.e. 20 to 35 weeks after August. Thus, the birth would have taken place between December 27, 1985, and April 11, 1986. This means that our first “post” month in the birth data should probably be December 1985. Of course, the most common scenario for an August 9, 1985 abortion would be: an abortion that took place on weeks 7-8 and would have led to a birth on weeks 39-40, which would show up as a birth between March 14 and 28 of 1986.

provided by the Spanish National Statistical Institute, and estimate the following equation:

$$Births_t = \beta_0 + \beta_1 Post_t + \beta_2 Month_t + \beta_3 Month_t^2 + \epsilon_t \qquad (1)$$

where Births is the number of births (or the natural log) in month t, and *Post* is a binary indicator taking the value one in all months starting in December 1985 and zero otherwise. *Month* is the month of birth. It is normalized to 0 for December 1985 and thus takes values -1 for November 1985, 1 for January 1986, etc. We also include a quadratic trend in month, and a set of calendar month dummies. In our main specification we include 36 months pre- and post- the implementation of the 1985 abortion law, so that our sample contains 72 months starting in December 1982 and finishing in December 1988. We also try with alternative windows, including either 24 or 30 months pre- and post-reform.

The drop in early fertility may have led to a reduction in the number of early marriages, for the cohorts of women who were less likely to give birth at a young age. We test this hypothesis using marriage-certificate data, and compare the total number of marriages before and after the reform. We estimate the equation (1) using the monthly number of marriages as a dependent variable. Note that in this case, the post-reform period starts immediately after the law was implemented, in August 1985.

We first estimate the overall impact of the reform in the time series, and then we exploit the regional variation in the intensity of exposure to the reform. We argue that the impact of abortion legalization was unequal across the Spanish territory mainly due to the different availability of abortion clinics. From 1988 on, all clinics that practiced at least one (legal) abortion had to report it to the Ministry of Health, Social Services and Equality who, in turn, publishes annually the list of clinics. Using these annual reports, we construct a panel of abortion clinics across municipalities and over time, which allows us to construct an indicator of the number of clinics per 100,000 inhabitants for each of the 52 provinces in Spain over time. Figure 2 shows the regional variation in the supply of abortion clinics across Spanish provinces in 1989.[3] There are large geographical differences: in 10 provinces, there were about 0.30-0.60 clinics per

[3] The Ministry of Health, Social Services and Equality started to collect this information in 1988. However, the information in that year is incomplete (for example, there is no information for Catalonia). Therefore, we use the first year of complete information, which is 1989.

100,000 inhabitants, while 24 out of 50 provinces had no clinics reporting abortions in 1989.

We also use three alternative measures of access to abortion services: an indicator of the province having at least one clinic practicing abortions in 1989, the absolute number of clinics, and the distance to the nearest province with at least one clinic.

We then estimate a specification that interacts our post-reform variable with the measure of supply of abortion services:

$$Y_{pt} = \partial_0 + \partial_1 Post_t + \partial_2 Post_t * Supply_{pt} + \partial_3 Supply_{pt} + P_p + T_t + \epsilon_{pt} \quad (2)$$

where Y is either births or marriages, *Supply* is the measure of access to abortion services, *P* and *T* denote province and year fixed-effects, and ϵ_{pt} is a time varying error term.

Short-term fertility results

First, we evaluate the short-term impact of the liberalization of abortion on fertility at the national level. We start by illustrating this effect graphically. Figure 3 shows the evolution of the total annual number of first births in Spain for three age groups (younger than 18, between 18 and 25, and older than 25), between 1982 and 1988. While the number of births has a decreasing trend over this period, especially for the two younger groups, a large drop in the number of first births is observed immediately after the reform among women younger 18, suggesting that the reform mainly affected teen fertility. A similar pattern is observed for all births (Figure 4).

Then we look at the short-term effect on fertility by estimating equation (1) using birth-certificate data at the monthly level. We use three alternative proxies of fertility: the number of births, the number of births in logs, and the rate of births per 1,000 women. Table 1 displays the coefficient $ß_1$, which captures the effect of the 1985 change in the abortion law on these alternative measures. We find (first row) that the legalization of abortion led to an immediate decrease in the monthly number of births, of about 2 log-points or 0.07 monthly births per 1,000 women.[4]

We then split births by quartiles of age of the mother (second panel of Table 1), and find a significant reduction in the number of births for all ages, except 27- to 30-year-

[4] Before the legalization, the average number of births per month was 39,400, while the monthly birth rate per 1,000 women was 4.9.

old women. Our results show that births decreased by almost 3 log-points for mothers aged 23 or younger, while the reduction was 3.4 log-points for mothers in the age bracket 24-26, and 2.5 log-points for women 31 and older. Appendix Table A1 shows that the results in Table 1 are robust to alternative windows (such as 24 or 30 months around the reform), especially the drop in births among youngest women. Appendix Table A2 shows the results for each single age. The impact of the policy is larger and more significant for women younger than 21 (see Figure 5 for a summary of the effects by age). Thus, the legalization of abortion reduced fertility, especially among women below age 21 at the time of the reform, that is, those who were born after 1964.

We next introduce regional heterogeneity. Figure 6 shows an index (1985:100) of the annual number of births, splitting the population into two groups: provinces without abortion clinics in 1989, and provinces with at least one clinic that practiced abortions in 1989. Panel 1 displays the results for all ages. While fertility shows the same decreasing trend in both groups of provinces before the reform, the decrease is more pronounced in provinces with a higher supply of abortions after the reform. This pattern is also observed when we look at women younger than 21 (Panel 2).

We then estimate equation (2) at the province-month level interacting the post dummy with an indicator for the potential supply of abortions. In our main specification, we use the number of clinics per 100,000 inhabitants in the province. Results are displayed in Table 2. The odds columns show the results when including province fixed-effects and the post-reform indicator. We again capture a significant decrease in the number of births at the province level after the reform. The even columns in Table 2 show the results adding the interaction between the post dummy and the number of clinics per 100,000 inhabitants. Regions with a higher supply of abortion clinics experienced a more pronounced drop in short-term fertility. When we split the births by age of the mother (second panel of Table 2), we find that the results are mainly driven by younger mothers.

In Table 3 we present some evidence by socio-economic group. Spanish birth records do not provide information on the education level of the mother in the 1980's, but we do have information about their occupation. We classify occupations into high- and low-skilled occupations. High-skilled occupations are professionals and technicians; managers and directors; and administrative or similar jobs. Given that a high proportion of women were not participating in the labor market in the period under analysis, we combine information of both the mother and the father, and divide the sample into three groups: both parents in high-skilled occupations; only one in high-skilled occupations, and both in low-skilled occupations. The results suggest that the legalization of abortion affected the short-term fertility of the most disadvantaged group of women.

Appendix Table A3 shows that our main results remain when we use alternative measures for the intensity of treatment exposure. In Panel A we divide the sample into two groups according to whether there was at least one clinic that practiced abortions in the province in 1989. Regions with at least one clinic experienced a drop in the monthly number of births of 2 log-points, while there is no significant effect of abortion legalization on short term fertility in provinces without clinics. In Panel B, we interact the post-reform indicator variable with the distance to the nearest province with at least one clinic that practiced abortions in 1989. We find that the larger the distance, the lower the drop in fertility immediately after the reform. Finally, in Panel C we use the absolute number of clinics and find again that the drop is higher in provinces with a larger number of clinics practicing abortions, although the estimates are less precise in this case. Our preferred specification is the one interacting the post reform variable with the number of clinics per 100,000 inhabitants, as it exploits a larger amount of variation across provinces while taking into account the size of the province.

In summary, we find that the drop in the number of births as a result of the abortion reform was stronger in provinces with a higher treatment intensity (as measured by the density of abortion clinics), as well as for young women and those in low-skilled occupation families.

We interpret the number of abortion clinics per 100,000 inhabitants as a measure of the supply of abortion services. However, the supply of clinics could be related to other factors, and specifically to demand factors, such that higher underlying demand for abortion services could be driving clinic availability, and thus our fertility results (i.e., the supply of clinics) would be endogenous. In order to test for this possibility, we gathered information on some of the most relevant demand factors. In order to take into account cultural and religious factors (since the Catholic church bans abortion), we collected information on religiosity by region from the 1985 Fertility Survey.[5] As a direct measure of underlying demand, we calculate the fraction of teenage births before abortion legalization in each province.

Appendix figures A1-A3 show the regional distribution of the percentage of births to women aged 18 or younger in 1984, the percentage of births to unmarried women aged 21 or younger in 1984, and the percentage of adults who declare being practicing Catholics in 1984, by province. Visually, there is not much apparent overlap across these different indicators. We then re-run our fertility specifications (as in (2)), additionally controlling for the birth rates to young women in 1984 (and its interaction with the post indicator) and the percentage of practicing Catholics in 1985 (and its interaction with the post indicator). Table A4 shows that our baseline results remain strongly statistically significant even after controlling for these demand-driven (potentially competing) explanatory factors.[6] We thus conclude that our results are driven by the supply of abortion services.

Short-term marriage results

The drop in early fertility may have led to a reduction in the number of early marriages, for the cohorts of women who were less likely to give birth at a young age. We test this hypothesis using marriage-certificate data, and compare the total number of marriages before and after the reform. Figure 7 shows an index (1985=100) of the annual number of marriages of women between 17 and 22 years-old by age, 5 years before and after the reform. Similar to the decreasing trend in fertility, the number of marriages decreased over time, but visual inspection does not suggest any change in this trend after the abortion legalization. If anything, there may have been a decrease in the number of marriages among 17-year-olds.

[5] The 1985 Fertility Survey (FS) is a survey carried out by the Spanish National Statistical Institute to women between 15 and 49 years old. The total sample consisted of 8782 observations. Among many other things, the survey asked women about their place of residence and their religiosity. Regarding the last one, the answers are grouped into non-believer; non-practicing Catholic; practicing Catholic; another religion; do not know/ do not answer. Based on this information, we calculate the fraction of women aged between 15 and 49 practicing catholic by province in 1985. Practicing catholic are those who actually practice the religion, for example, going to Mass every Sunday. Answers from the 1985 FS are missing for 7 provinces (Avila, Guadalajara, Huelva, Lleida, Segovia, Soria and Teruel) due to lack of enough sample size to be representative of the population of interest. To estimate the religiosity of these missing provinces we follow the multiple imputation methodology suggested by Rubin (1987) and regress the fraction of practicing Catholic at province-level on a group of other indicators for the same or around years (fraction of left-wing voters in 1980, birth rates of young women in 1984).

[6] Our baseline results remain also statistically significant when controlling for the province-level proportion of women who reported that they have taken and/or were currently taking the pill (1985 Fertility Survey).

We then estimate equation (1) over the number of marriages (or the natural log or the number of marriages per 1,000 women) in month t. The results are displayed in Table 4. Essentially all of the coefficients are positive and statistically insignificant. We find no evidence of a significant decline in the number of marriages following abortion legalization. Table A5 shows the results separately by age of the mother. We find a decline in marriages among women aged 20 and younger, but none of the coefficients are statistically significant.

In Table 5 we present the results of estimating equation (2) for marriage, i.e. exploiting the regional heterogeneity in the supply of abortions. We find evidence of a significant drop in the number of marriages among women of 21 and younger in provinces with a larger supply of abortions, which coincides with the strong drop in fertility for this younger age group of women.

Summarizing our results so far, the legalization of abortion led to a fall in fertility among women of all ages in provinces with more clinics providing abortion services, while we find a significant drop in marriages only among younger women.

3.2. Labor market and education

If women who were very young when abortion was legalized were able to postpone fertility or avoid teen births, this could have had short-term effects on women's schooling and/or labor supply decisions.

In order to investigate this question, we focus on women born between 1958 and 1971 (inclusive), who were between 14 and 27 at the time of the reform. Following the results of the previous sections, that show a stronger reduction in fertility for women aged 21 or younger at the time of the reform (see Appendix Table A2), we define as "treated" those women who were born in 1965 or later, so that they were 21 or younger at the time of the reform, and we look at their education and employment outcomes right after the implementation of the reform (years 1986-1990).

We estimate the following specification:

$$Y_c = \beta_0 + \beta_1 Treated_c + \beta_2(YOB_c - C) + \beta_3(YOB_c - C) * Treated_c + \beta_4 Treated_c * Clinics + \beta_5 Clinics + \epsilon_t \qquad (3)$$

C is the pivotal cohort of 1965, and we include a linear pre-reform and post-reform trend. The variable *Treated* takes value 1 for all treated cohorts (1965 to 1971), and this variable is interacted with the supply factor (abortion clinics per 100,000 inhabitants). We also include province and year fixed effects. Note that age at the time of the interview is indirectly controlled for, since it equals the year of the survey minus the year of birth, which are both included in the regression.

We thus explore the short-term effects of the abortion legalization on education and labor market outcomes for the most affected women. As outcome variables, we use three dummies variables indicating being in the labor force, working, and being in full-time education.

We use data from the Spanish Labor Force Survey (EPA) for the years 1986-1990. The EPA is a rotating quarterly survey carried out by the Spanish National Statistical Institute. Sample size is about 64,000 households per quarter, including approximately 150,000 adult individuals. The EPA provides fairly detailed information on labor force status, education, and family background variables. The reference period for most questions is the week before the interview. We use the second interview of each year in order to minimize the probability of having repeated observations of the same individual.

The relevant women are aged between 28-32 (the oldest cohort, 1958) and 16-19 (the youngest cohort, 1971) at the time of the interview. The cohort of 1971 is not available in the 1986 survey, as they are only 15 and the survey is administered to people 16 and older.

Table 6 reports the results of these regressions (first panel). Women who were younger (aged 21 or less) when abortion was legalized in regions with more supply of abortion services were more likely to be in full-time education, and less likely to be working, compared to the control group. The second panel uses cohort as a continuous variable instead of the "*Treated*" dummy, and the results are confirmed.

4. Long-term effects

4.1. Completed fertility

In this section, we evaluate whether the short-term effect on fertility persisted, leading to the affected women having fewer children throughout their lifetime. That is, we study whether those young women that were able to avoid unwanted births early in life after the abortion liberalization simply postponed those births to later in life, versus their completed fertility falling. To do this, we estimate equation (3) over the accumulated average number of children born per woman, for cohorts of women by province at different ages: 18 years old, 21 years old, 34 years old and 44 years old.

To calculate the accumulated average number of children born per woman by cohort, we pool the total number of births (from birth certificates) from 1975 to 2015, and calculate the cumulative births at each mother's age by cohort and province. We focus on the cohorts born between 1958 and 1971. Women who were born in 1965-71 were between 14 and 20 years old in 1985 and between 44 and 50 years old in 2015. Women who were born in 1958-64 were 17 or younger in 1975, between 21 and 27 years old in 1985, and between 51 and 57 in 2015. The cumulative number of births by cohort and province is then divided by the size of the cohort, to get the average number of children born per woman in a cohort and province, by each age.

Ideally, we would like to have information about the size of each cohort by province of residence and year. Unfortunately, this information is not available, so we approximate the size of each cohort of women by province looking at the number of women living in each province in 1981, by age. This information comes from the (pre-reform) 1981 Population and Housing Census. One limitation of this approach is that the 1981 Census does not provide information about the year of birth of each woman, only their age. So to calculate the size of each cohort we assign each woman to a cohort according to their age at the time were the Census was carried out. Another and more important limitation is that we are not considering migration across provinces after 1981.[7] To evaluate to what extent this fact is biasing our results we carried out the same analysis approximating the size of each cohort by province with the (post-reform) 1991 Population and Housing Census.

Table 7 reports the results when we use the 1981 Census to approximate the size of each cohort. Columns 1 to 4 show the results from estimating equation 4 for the average number of children born per woman, by cohort and province, by 18, 21, 34, and 44 years of age, respectively. The specification in Panel A groups the cohorts more affected by the abortion legalization (those born between 1965-1971), and compares the

[7] According to the 2011 Population and Housing Census, between 21 and 27 percent of women born between 1958 and 1971 were living in a province different from where they were born. These figures are similar 10 years before, suggesting that they tend to migrate at earlier ages.

average number of births for women in these cohorts with the closer but less affected cohort group (women born between 1958 and 1964). We compare the fertility behavior of these two cohort groups of women in different provinces according to the number of clinics that practiced abortions in 1989 per 100,000 inhabitants. Consistent with our previous results (short-term fertility effects), we find that the most affected cohorts tend to have fewer children at earlier ages, and that the effect is larger the greater the supply of abortions in each province. Specifically, our findings suggest that even after controlling for a linear trend, women born between 1965 and 1971 tend to have 0.005 less births on average at 18 years old than women born between 1964 and 1958 (a drop of 8 percent). That difference increases to 0.046 when we interact the cohort indicator variable with our indicator of supply of abortions, meaning that an increase in one standard deviation (0.15) in the number of clinics per 100,000 inhabitants leads to a drop of 11 percent in the average number of births at 18 years old.[8] Note that even when the estimated coefficient of the interaction between the cohort indicator variable and the supply of abortions increases as the age of the mother increases, given that the accumulated number of births per women at older ages is greater, the relative drop in fertility decreases. At 21 years old, an increase of one standard deviation in the number of clinics per 100,000 inhabitants leads to a drop of 7 percent in the number of births among the most affected cohorts. The same figure decreases to 2 percent at 34 years old and becomes only 1 percent and not statistically significant at 44 years old.[9]

In Panel B we split the affected cohort in three groups (1969-71, 1967-68 and 1966-65). First, comparing across cohorts shows that the younger the women at the time of the reform, the greater the drop in fertility, especially at early ages. We find no effect on completed fertility (by age 44) for the oldest affected cohorts, with the coefficient on the interaction very close to zero. We do find a significant drop (at 90%) in the completed fertility for the cohort born between 1967 and 1968 (who were about 18-19 years old in 1985).

In Panel C we estimate an alternative specification, which controls for the woman's year of birth (variable *cohort*) continuously, as well as its interaction with the

[8] This was calculated as the estimated coefficient (0.046) times one standard deviation in the number of clinics per 100,000 inhabitants (0.15) divided by the average number of births at 18 years old to the less affected cohort (0.063).

[9] The accumulated average number of births per women at 21, 34 and 44 years old to the less affected cohort (64-58) is 0.25, 1.4 and 1.6 respectively.

number of clinics per 100,000 inhabitants. Again, we find a significant effect of the legalization of abortion on fertility by age 34, but the coefficient turns insignificant at 44, suggesting a small effect on completed fertility.

Finally, we find the same results when using the 1991 Census instead the 1981 Census to estimate the size of each cohort by province: a drop in early fertility but no significant effects on completed fertility measured at 44 years old. In summary, our findings suggest that the effect of the abortion legalization on early fertility did not translate into a decline in completed fertility.

4.2. Labor market outcomes

The positive short-term effects of the abortion reform, in terms of increasing full-time education for affected young women, may or may not be persistent over time. This is an interesting question as the short-term effects may vanish in the long-term. Alternatively, if the increase in educational involvement of affected women is maintained, there could be beneficial labor market effects in the long-term. We test this hypothesis using data from the Spanish LFS for the years 2000 to 2007. As before, we use the second interview of each year, and select women born between 1958 and 1971 (inclusive), so that they were 14-27 at the time of the reform. As the labor force data is for the years 2000 to 2007, these cohorts of women are between 42-49 (the oldest cohort) and 29-36 (the youngest one) at the time of the interviews. Again, we define as treated women who were born in 1965 or later, so that they were 21 or younger at the time of the reform, and we look at their outcomes at the ages of 35-42 in 2000-2007. Furthermore, we deliberately exclude the years of the great recession from the sample (2008 onwards). We use the same specification than in the previous section, but focus now on the long-term effects of the reform on educational achievement, labor market outcomes and marriage.

We focus on the highest educational degree obtained, and create four dummy variables for: high school dropouts (not having completed high school), high school graduates, vocational education degree, and college degree.

Table 8 shows the main results. The coefficients on the interaction of interest in Panel 1 suggest that treated women from regions with more abortion clinics in 1989 are significantly less likely to have dropped out from high school, and thus more likely to have a high school or a vocational degree. Thus, the evidence suggests that legalizing abortion had long-term effects on educational attainment for young women.

In terms of labor market outcomes (Panel 2), we use indicators for being in the labor force (active), and employed. We also look at the probability of being married and divorced 22 years after the implementation of the reform. We can see that affected women in regions with more abortion clinics are not significantly more likely to participate in the labor market or work, although the coefficient is, indeed, pointing to the expected positive direction.[10] Similarly, the coefficient for marriage is also negative but insignificant, and the effect on divorce is negative and significant.

Thus, we conclude that in the long-term the reform increased the educational attainment of younger women with better access to abortion services (as they were living in provinces with a higher availability of abortion clinics), although this improvement in educational levels did not translate into better labor market outcomes in the long-run, at least in terms of employment.

4.3 Life satisfaction

The last question we address is whether our previous findings, namely, the fact that after the abortion liberalization more women were able to avoid unwanted births at an early age and increase their educational attainment, translated into higher levels of well-being among the affected cohorts. To test this, we use the Spanish sample of the 2000 European Union Household Panel (EUHP), which included some questions about subjective well-being.

Specifically, the survey asks about the degree of satisfaction with regards to work, economic situation, housing conditions, and time devoted to leisure. Answers range from 1 to 6, where 1 means "very dissatisfied" and 6 "fully satisfied". We estimate equation (3) using as a dependent variable the degree of satisfaction in each dimension as well as a synthetic index, which is the first component of a Principal Component Analysis based on the degree of satisfaction in the four dimensions. In 2000 the

[10] We have run the same model with different years included in the sample; in particular, we have used a dataset with years from 2009 to 2017 and also another dataset with years from 2014 to 2017. With both datasets the results are exactly the same than the ones reported here; we find significant increases in high school graduation and vocational education but no impacts on labour market outcomes. Therefore, we conclude that these results are very stable and robust to different inclusion/exclusion of calendar years in the sample.

youngest cohort in our sample (women born in 1971) is 29 years old, while the oldest (1958 cohort) is 42 years old, meaning that we are evaluating their degree of satisfaction in their 30's. One important limitation of these data is that regional information is only available at a more aggregated level, so we can exploit the variation across only 17 regions. We restrict our sample to native women who live in the same region where they were born, or who migrated to that region before 1985. The sample size is around 3,935 observations.

Table 9 displays the results. We find that the younger cohorts of women (those more affected by the abortion liberalization) living in regions with more clinics seem to be more satisfied with their housing conditions and with the time devoted to leisure. However, we find no significant effect on long-run satisfaction with work and economic conditions. Our synthetic index (column 5) also suggests that women affected by the reform have a greater subjective well-being.

5. Conclusions

We started by documenting that the reform that legalized abortion in Spain in 1985 led to an immediate drop in the number of births, especially to very young women. Women who were under 21 at the time of the legalization of abortion were less likely to have a child while very young, compared with women born in earlier cohorts.

We then evaluate whether the legalization of abortion had an immediate effect on marriages. We compare the monthly records of marriages before and after the policy change. We report a decrease in the number of marriages for the same age group of women after the reform, although the effect is not statistically significant.

We explore the existence of any differences on the impact of the reform across Spanish regions. We believe the impact should be stronger in reforms with a higher supply of abortion services at the time of the reform. We find that the drop in the number of births and marriages was significantly stronger for young women in regions with a higher supply of abortion clinics in the early years after the reform. We use these regional differences to explore the long-term effects of the abortion legalization.

Taking into account that women who were very young when abortion was legalized were able to postpone fertility, and the regional differences on the impact of the reform, we then evaluate whether these initial effects translated into lower completed fertility, higher educational attainment, better labor market outcomes and higher life satisfaction in the long-term. We test these hypotheses using data from birth registries, the Spanish Labour Force Survey and the ECHP. First of all, we find that the fertility decline accumulated at younger ages disappears as the affected cohorts get older, so as the abortion law seems not to have an effect in the decline of completed fertility. As regards educational and labor outcomes, we find evidence that affected cohorts were more likely to graduate from high school and having a vocational degree, 20 years after the abortion legalization reform. Alternatively we do not find evidence of increases in the probability of finding a job. And finally, they are more likely to have higher life satisfaction.

References

Ananat, E.O., Gruber, J., Levine, P.B., Staiger, D. 2009. “Abortion and Selection”. *The Review of Economics and Statistics*, 91 (1): 124.136.

Antón, JI; Ferrer, Z; Triunfo, P. 2016. "The impact of Abortion Legalisation on Birth Outcomes in Uruguay". Forthcoming in *Health Economics*.

Bailey, M. J. and Lindo, J.M. 2017. "Access and Use of Contraception and Its Effects on Women's Outcomes" in the U.S. in L. Argys, S. Averett, S. Hoffman (eds.), Forthcoming, Oxford Handbook of Women and the Economy.

Bailey, M. J. (2010). "Momma's Got the Pill": How Anthony Comstock and Griswold v. Connecticut Shaped US Childbearing”. *American Economic Review*, 100(1):98-129.

Bailey, M. J. (2006). “More power to the pill: the impact of contraceptive freedom on women's life cycle labor supply”. *The Quarterly Journal of Economics* 121 (1):289-320.

Clark, D., Mühlrad, H. 2016. “The impact of abortion legalization on fertility and maternal mortality: New evidence from Mexico”. *Mimeo.*

Cunningham, S., Lindo, J.M., Myers, C. and Schlosser, A. 2017. "How Far Is Too Far? New Evidence on Abortion Clinic Closures, Access, and Abortions", NBER WP 23366.

Currie, J., Nixon, L., Cole, N. 1996. “Restrictions on Medicaid funding of abortion: Effects on birth weight and pregnancy resolutions”. *Journal of Human Resources*, 31: 159-188.

David, H.P. 2006. “Born unwanted, 35 years later: The Prague study”. *Reproductive Health Matters*, 14 (27): 181-190.

Donohue, J., Levitt, S.D. 2001. “The impact of legalized abortion on crime”. *The Quarterly Journal of Economics*, 116 (2).

Goldin, C. and Katz, L. F. (2002). The Power of the Pill: Oral Contraceptives and Women's Career and Marriage Decisions. *Journal of Political Economy*, 110(4):730-770.

Gruber, J., Levine, P., Staiger, D. 1999. “Abortion legalization and child living circumstances: Who is the “marginal child”?. *The Quarterly Journal of Economics*, 114 (1): 263-291.

Haas-Wilson, D. 1996. “The impact of state abortion restrictions on minors’ demand for abortions”. *Journal of Human Resources*, 140-158.

Kane, T.J., Staiger, D. 1996. “Teen motherhood and abortion access”. *The Quarterly Journal of Economics*, 111 (2): 467-506.

Klerman, J.A. 1999. “US abortion policy and fertility”. *The American Economic Review*, 89 (2); 261-264.

Levine, P.B., Trainor, A.B., Zimmerman, D.J. 1996. “The effect of Medicaid abortion funding restrictions on abortions, pregnancies and births”. *Journal of Health Economics*, 15 (5): 555-578.

Myers, C. 2017. "The Power of Abortion Policy: Re-examining the effects of young women's access to reproductive control" Forthcoming at the *Journal of Political Economy*.

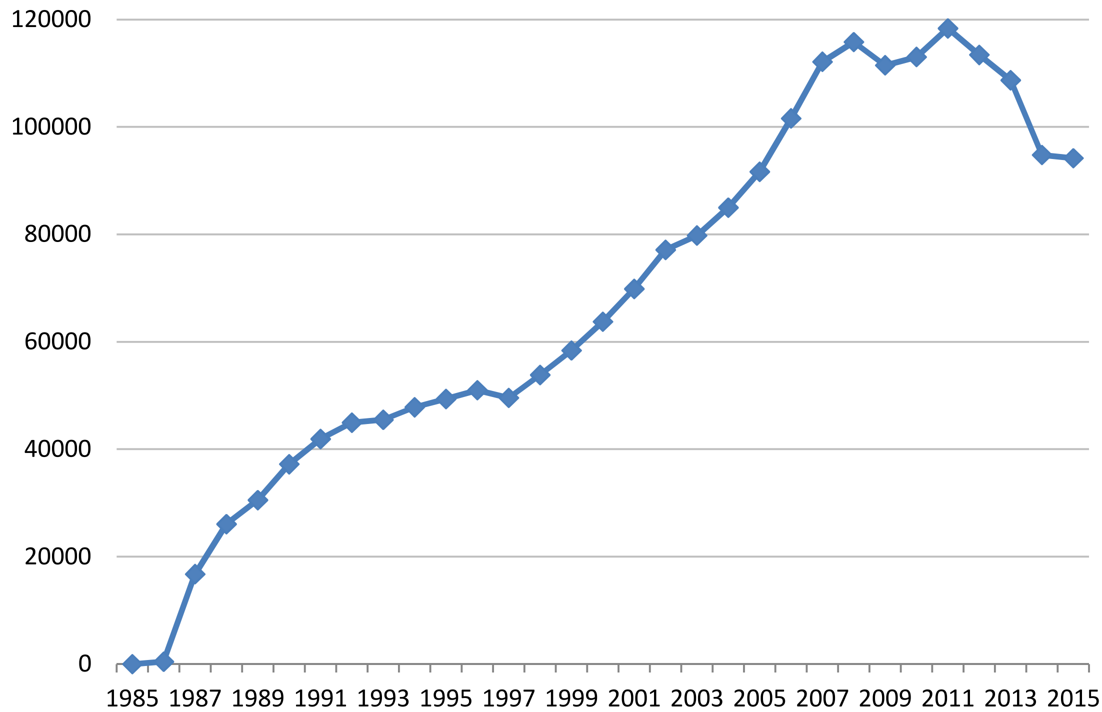
Pop-Eleches, C. 2006. “The Impact of an abortion ban on socioeconomic outcomes of children: evidence from Romania”. *Journal of Political Economy*, 114 (4); 744-773.

Pop-Eleches, C. 2010. “The supply of birth control. Methods, education and fertility. Evidence from Romania”. *The Journal of Human Resources*, 45 (4): 971-997.

Rubin, D. C. 1976. “Inference and missing data”. *Biometrika* 63: 581–592.

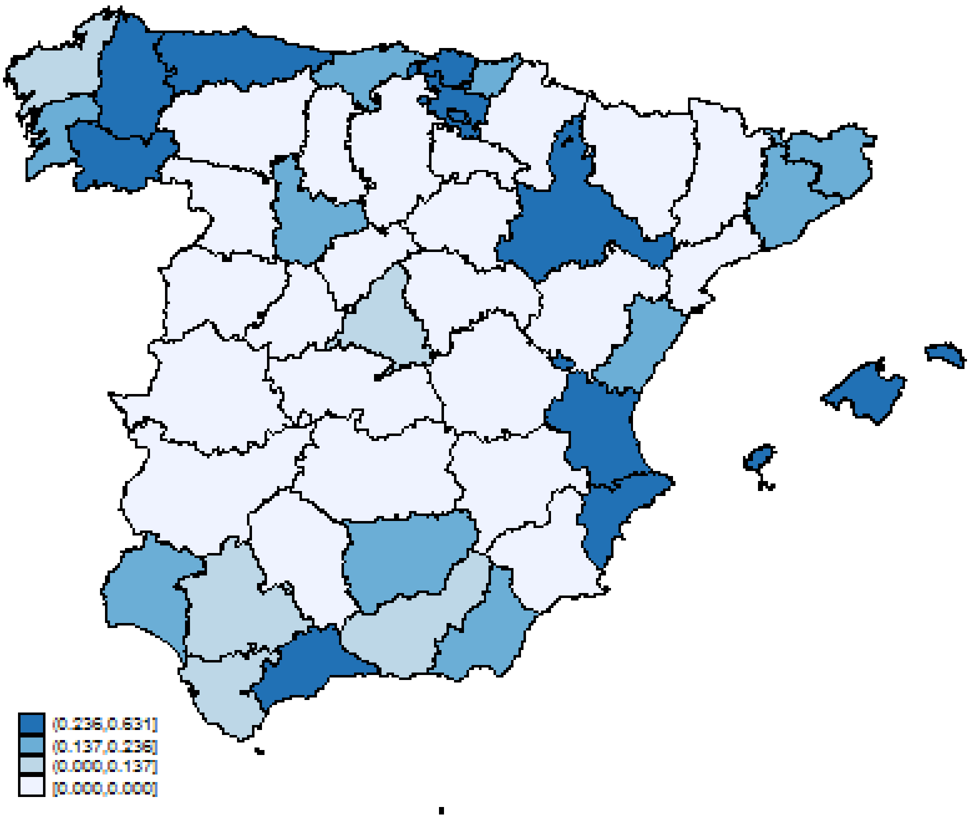
Tables and Figures

Figure 1. Annual number of registered abortions, Spain 1985-2015



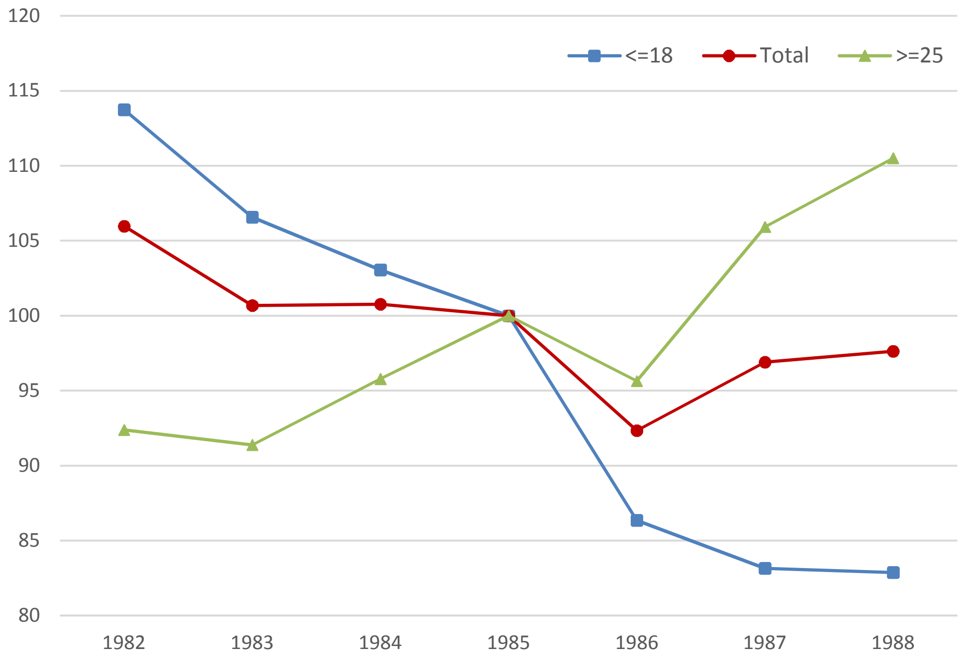
Source: Spanish National Statistical Institute from 1988 onwards.

Figure 2. Number of clinics that practiced abortions in 1989 per 100,000 inhabitants, by province



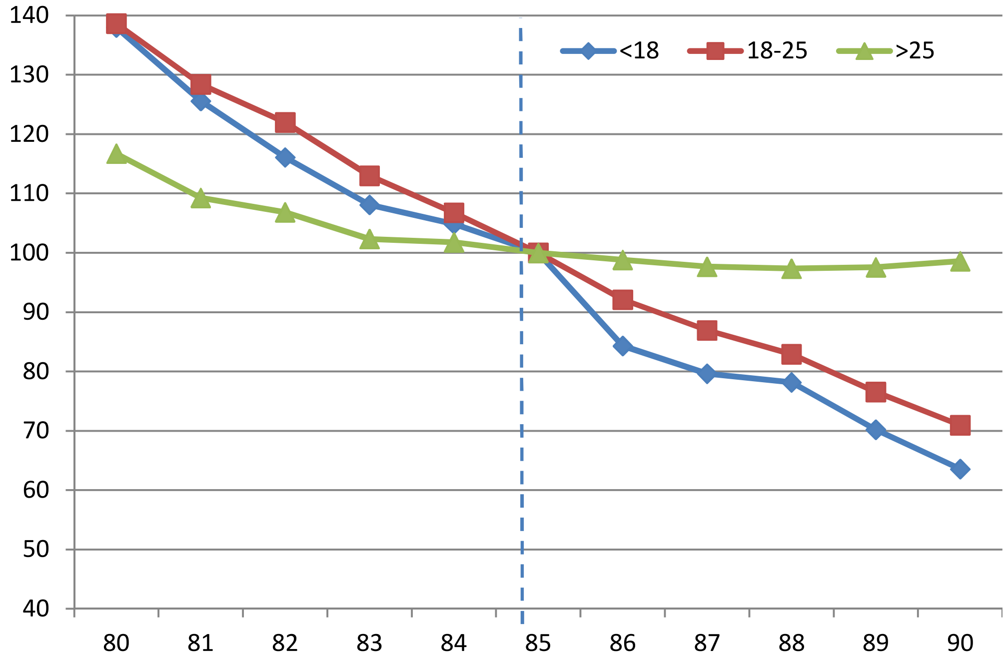
Notes: Authors' calculations based on data from the 1989 report of voluntary pregnancy interruptions from the Spanish Ministry of Health, Social Services and Equality and province-level population from the Spanish National Statistical Institute.

Figure 3. Annual number of first births by age of the mother (1985: 100).



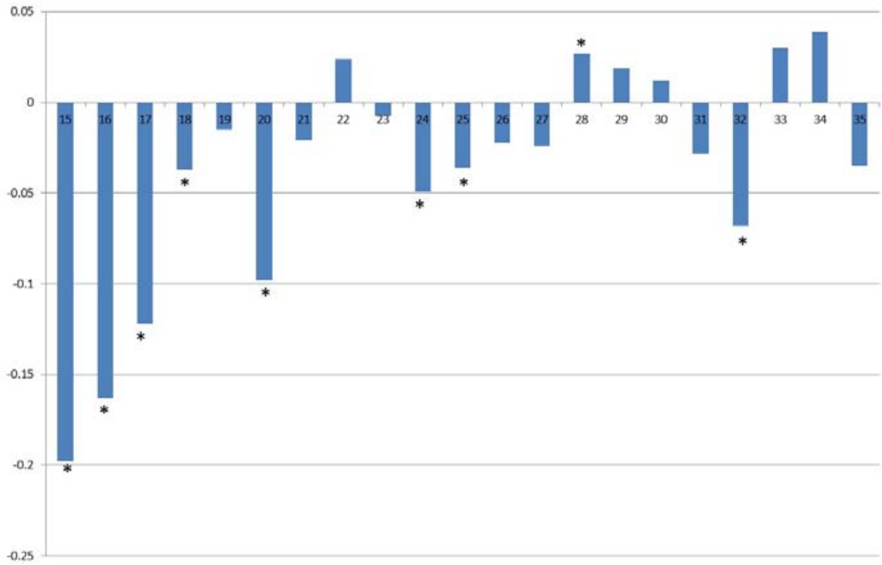
Source: Birth-certificate data, Spanish National Statistical Institute.

Figure 4. Annual number of births by age of the mother (1985: 100).



Source: Birth-certificate data, Spanish National Statistical Institute.

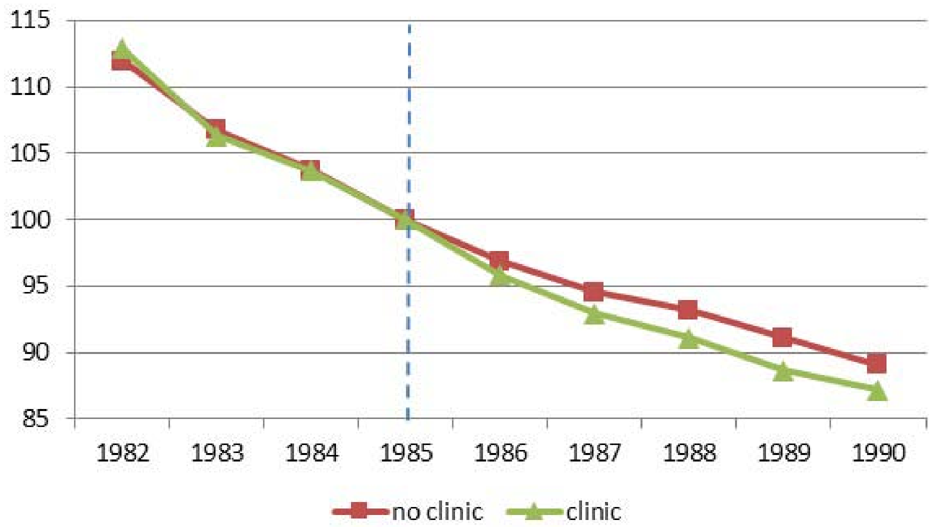
Figure 5. Effect on births in log-points by age of the mother



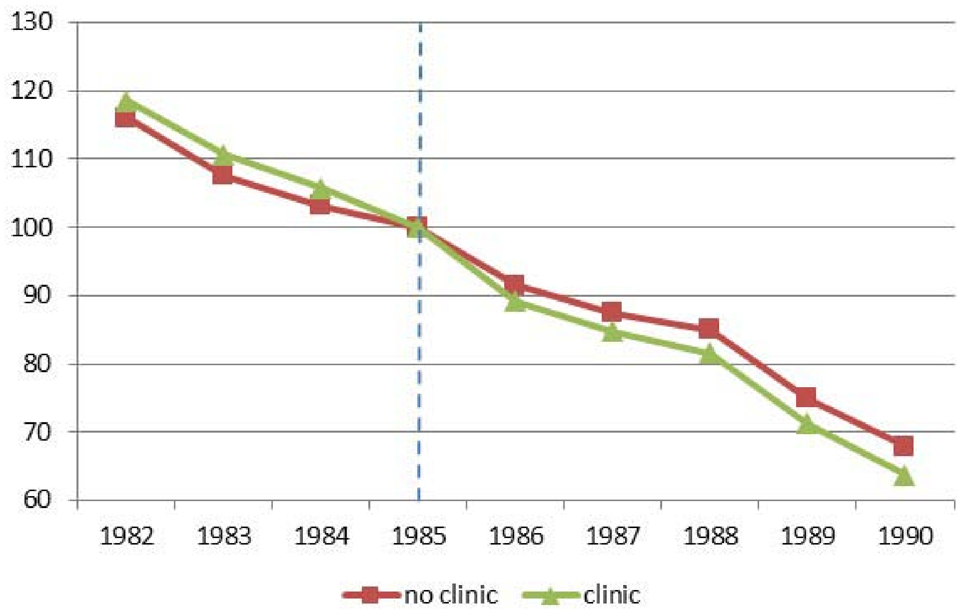
Note: Results from estimating equation 1 over the monthly number of births in logs. We plot the coefficient of the post-reform indicator variable (see Appendix Table A.2 for details).
* denote statistically significant effects.

Figure 6. The effect of the supply of clinics in the number of births.

1. By provinces, all ages (with vs without clinics in 1989)

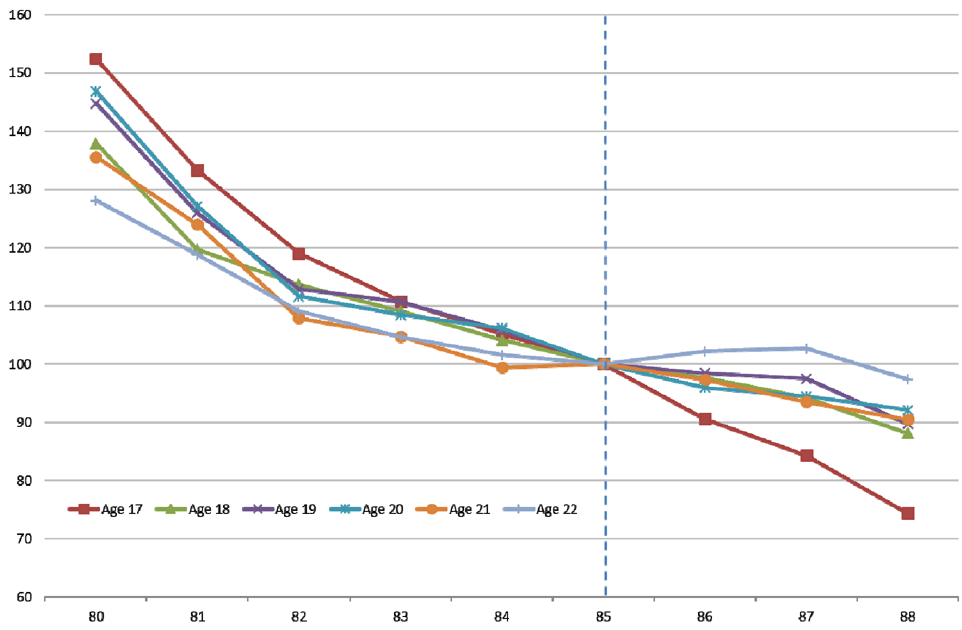


2. By provinces, younger 21 (with vs without clinics in 1989)



Source: Birth-certificate data, Spanish National Statistical Institute and data of clinics that practiced abortions in 1989 from the Spanish Ministry of Health, Social Services and Equality.

Figure 7. Annual number of marriages by age, Spain 1980-90 (1985:100)



Source: Marriage-certificate data, Spanish National Statistical Institute.

Table 1. Short-term fertility effects, overall and by age group

	Births		*Births in logs*		*Births per 1000 women*	
	(1)	(2)	(3)	(4)	(5)	(6)
All	-706.257*	-706.257*	-0.019*	-0.019**	-0.074	-0.074*
	(382.231)	(360.428)	(0.010)	(0.010)	(0.049)	(0.044)
By quartiles of mother's age:						
Q1: 23 and younger	-247.111**	-247.111***	-0.029***	-0.029***	-0.091**	-0.091***
	(106.270)	(88.707)	(0.010)	(0.009)	(0.038)	(0.031)
Q2: 24-26 y.o.	-288.972***	-288.972***	-0.034***	-0.034***	-0.205*	-0.205*
	(100.930)	(101.526)	(0.012)	(0.012)	(0.114)	(0.112)
Q3: 27-30 y.o.	72.847	72.847	0.007	0.007	-0.012	-0.012
	(111.004)	(106.870)	(0.011)	(0.011)	(0.102)	(0.095)
Q4: 31 and older	-243.021*	-243.021**	-0.025*	-0.025**	-0.052	-0.052
	(128.438)	(118.158)	(0.013)	(0.012)	(0.040)	(0.036)
N (number of months)	72	72	72	72	72	72
Linear trend in months	Y	Y	Y	Y	Y	Y
Quadratic trend in months		Y		Y		Y
Calendar month dummies	Y	Y	Y	Y	Y	Y

Notes: Results from estimating equation (1) using monthly births records. The table displays the coefficient of the variable *Post,* which takes the value 1 from December 1985 onwards and 0 otherwise. We include 36 months pre- and post- December 1985, so that our sample contains 72 months starting in December 1982 and finishing in December 1988. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table 2. Short-term fertility effects by region according to clinics availability, overall and by age group

	Births		*Births in logs*		*Births per 1000 women*	
	(1)	(2)	(3)	(4)	(5)	(6)
Post	-13.8869**	14.0432*	-0.0112**	0.0013	-0.0299	0.0282
	(6.8030)	(8.3071)	(0.0055)	(0.0086)	(0.0232)	(0.0357)
Post x Clinics per 100,000 inhab		-212.5935***		-0.0947**		-0.4416**
		(51.9902)		(0.0399)		(0.1680)
By mother's age						
21 and younger						
Post	-5.8132***	1.5473	-0.0599***	-0.0444**	-0.0802***	-0.0258
	(1.2019)	(1.6514)	(0.0156)	(0.0183)	(0.0160)	(0.0237)
Post x Clinics per 100,000 inhab		-56.0255***		-0.1182		-0.4141***
		(14.7034)		(0.0788)		(0.1300)
Older 21						
Post	-8.0738	12.4959*	-0.0042	0.0075	0.0093	0.0062
	(5.9379)	(7.3439)	(0.0059)	(0.0089)	(0.0366)	(0.0533)
Post x Clinics per 100,000 inhab		-156.5680***		-0.0885**		0.0233
		(39.4983)		(0.0404)		(0.2224)
N (months x provinces)	3600	3600	3600	3600	3600	3600
Linear trend in months	Y	Y	Y	Y	Y	Y
Quadratic trend in months	Y	Y	Y	Y	Y	Y
Calendar month dummies	Y	Y	Y	Y	Y	Y
Province fixed-effects	Y	Y	Y	Y	Y	Y

Notes: Results from estimating equation (2) using births records by month and province. The variable *Post* takes the value 1 from Dec 1985 onwards and 0 otherwise. The variable Clinics per 100,000 inhabitants is based on the number of clinics that reported having practiced at least one abortion in 1989, by province (source: 1989 report of voluntary pregnancy interruptions, Ministry of Health, Social Services and Equality). Standard errors clustered at province level (50 clusters). *** p<0.01, ** p<0.05, * p<0.1.

Table 3. Short-term fertility effects by region and mother/father occupation

	Births (1)	*Births in logs* (2)	*Births per 1000 women* (3)
Both in high-skilled occupations			
Post	-3.0139**	-0.0487	-0.0057
	(1.3862)	(0.0416)	(0.0066)
Post x Clinics per 100.000 inhab	11.6381*	0.2040	0.0292
	(6.5221)	(0.1356)	(0.0214)
Only one in high-skilled occupations			
Post	-2.8347	0.0243	0.0140
	(3.7905)	(0.0245)	(0.0125)
Post x Clinics per 100.000 inhab	-13.6038	-0.0677	-0.0481
	(10.2997)	(0.1129)	(0.0541)
Both in low-skilled occupations			
Post	19.8918**	0.0014	0.0199
	(7.9235)	(0.0107)	(0.0361)
Post x Clinics per 100.000 inhab	-210.6278***	-0.1177**	-0.4228**
	(57.7480)	(0.0451)	(0.1813)
N (months x provinces)	3600	3600	3600
Linear trend in months	Y	Y	Y
Quadratic trend in months	Y	Y	Y
Calendar month dummies	Y	Y	Y
Province fixed-effects	Y	Y	Y

Notes: Results from estimating equation (2) using births records by month and province. The variable *Post* takes the value 1 from Dec 1985 onwards and 0 otherwise. The variable Clinics per 100,000 inhabitants is based on the number of clinics that reported having practiced at least one abortion in 1989, by province (source: 1989 report of voluntary pregnancy interruptions, Ministry of Health, Social Services and Equality). High-skilled occupations are Professionals and Technicians; Managers and Directors; Administrative and similar staff. Standard errors clustered at province level (50 clusters). *** p<0.01, ** p<0.05, * p<0.1

Table 4: Short term effect on the number of marriages, overall and by age group

Dependent variable:	*Marriages*		*Marriages in logs*		*Marriages per 1000 women*	
	(1)	(2)	(3)	(4)	(5)	(6)
All	107.458	107.458	0.007	0.007	0.008	0.008
	[724.609]	[711.899]	[0.039]	[0.038]	[0.046]	[0.045]
By group of mother's ages:						
Q1: 23 and younger	50.097	50.097	0.001	0.001	0.014	0.014
	[389.770]	[385.236]	[0.040]	[0.039]	[0.122]	[0.121]
Q2: 24-26 y.o.	65.486	65.486	0.023	0.023	0.111	0.111
	[216.439]	[216.736]	[0.039]	[0.040]	[0.239]	[0.236]
Q3: 27-30 y.o.	32.049	32.049	0.011	0.011	-0.000	-0.000
	[249.371]	[246.525]	[0.040]	[0.040]	[0.218]	[0.217]
Q4: 31 and older	23.458	23.458	0.012	0.012	0.003	0.003
	[209.172]	[201.223]	[0.036]	[0.035]	[0.019]	[0.018]
N (number of months)	72	72	72	72	72	72
Linear trend in months	Y	Y	Y	Y	Y	Y
Quadratic trend in months		Y		Y		Y
Calendar month dummies	Y	Y	Y	Y	Y	Y

Notes: Results from estimating equation (1) using monthly marriage records. The table displays the coefficient of the variable *Post*, which takes the value 1 from August 1985 onwards and 0 otherwise. We include 36 months pre- and post- August 1985, so that our sample contains 72 months starting in August 1982 and finishing in August 1988. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 5: Short term effect on the number of marriages by region according to clinics availability, overall and by age group

	Marriages		*Marriages in logs*		*Marriages per 1000 women*	
Post	2.6224	4.8043	-0.0022	0.0167	0.0241	0.0621*
	(4.1615)	(9.3417)	(0.0106)	(0.0234)	(0.0164)	(0.0355)
Post x Clinics per 100.000 inhab		-16.6083		-0.1444		-0.2891
		(54.2228)		(0.1841)		(0.2315)
By mother's age						
21 and younger						
Post	-1.2353	7.1950**	-0.0189	0.0031	-0.0199	0.0316
	(1.2000)	(3.2437)	(0.0163)	(0.0296)	(0.0214)	(0.0383)
Post x Clinics per 100.000 inhab		-64.1683***		-0.1670		-0.3923*
		(22.3905)		(0.2028)		(0.2193)
Older 21						
Post	3.8576	-2.3907	0.0074	0.0201	0.0521**	0.0693*
	(3.4086)	(8.3701)	(0.0115)	(0.0250)	(0.0196)	(0.0402)
Post x Clinics per 100.000 inhab		47.5601		-0.0967		-0.1306
		(48.2927)		(0.1898)		(0.2651)
N (months x provinces)	3600	3600	3600	3600	3600	3600
Linear trend in months	Y	Y	Y	Y	Y	Y
Quadratic trend in months	Y	Y	Y	Y	Y	Y
Calendar month dummies	Y	Y	Y	Y	Y	Y
Province fixed-effects	Y	Y	Y	Y	Y	Y

Notes: Results from estimating equation (2) using births records by month and province. The variable *Post* takes the value 1 from August 1985 onwards and 0 otherwise. The variable Clinics per 100,000 inhabitants is based on the number of clinics that reported having practiced at least one abortion in 1989, by province (source: 1989 report of voluntary pregnancy interruptions, Ministry of Health, Social Services and Equality). Standard errors clustered at province level (50 clusters). *** p<0.01, ** p<0.05, * p<0.1.

Table 6. Short-term effect on the probability of studying or working of affected women. Clinics per 100.000 inhabitants in 1989.

	Active	Working	Studying
PANEL 1			
Treated cohorts	0.0022	-0.0007	0.0252
	(0.0244)	(0.0102)	(0.0211)
Clinics per 100000 inhab.	-3.7757	-4.4284*	1.7853
	(2.5121)	(2.3038)	(1.3478)
*Treated*Clinics per 100000 inhab.*	-0.0871***	-0.0926***	0.0588**
	(0.0235)	(0.0179)	(0.0210)
Trend	0.0121***	-0.0057***	0.0298***
	(0.0033)	(0.0019)	(0.0036)
Post*trend	-0.0721***	-0.0319***	0.0400***
	(0.0056)	(0.0023)	(0.0046)
Constant	1.9875**	1.9574**	-0.3439
	(0.8862)	(0.8207)	(0.4744)
FE year & Province	X	X	X
Observations	103,491	103,491	103,491
R-squared	0.0735	0.0701	0.2247
PANEL 2			
Cohort	-0.0195***	-0.0202***	0.0502***
	(0.0059)	(0.0027)	(0.0034)
Clinics per 100000 inhab.	-2.6867	-3.7648	1.1040
	(2.4799)	(2.2732)	(1.4125)
*Cohort*Clinics 100000 per inhab.*	-0.0118***	-0.0090**	0.0082**
	(0.0037)	(0.0034)	(0.0028)
Constant	3.0082**	3.1752***	-3.4644***
	(1.1691)	(0.9618)	(0.5391)
FE year & Province	X	X	X
Observations	103,491	103,491	103,491
R-Squared	0.0533	0.0655	0.2170

Note: Results from estimating equation (3) using LFS data (second quarter) from 1986 to 1990. The variable Clinics per 100,000 inhabitants is based on the number of clinics that reported having practiced at least one abortion in 1989, by province (source: 1989 report of voluntary pregnancy interruptions, Ministry of Health, Social Services and Equality). Treated cohorts are those born between 1965 and 1971 so that they are aged 21 or younger at the time of the reform. Standard errors clustered by cohort.

Table 7. Completed fertility

	(1)	(2)	(3)	(4)
	At 18 y.o	At 21 y.o	At 34 y.o.	At 44 y.o.
Panel A				
Treated Cohorts	-0.0049***	0.0087*	-0.0015	-0.0157
	(0.0018)	(0.0048)	(0.0127)	(0.0152)
Treated x Clinics per 100,000 inhab	-0.0463***	-0.1249***	-0.1430**	-0.1068
	(0.0120)	(0.0336)	(0.0687)	(0.0814)
Linear trend	0.0005*	-0.0152***	-0.0523***	-0.0405***
	(0.0003)	(0.0010)	(0.0033)	(0.0039)
Post x Linear trend	-0.0031***	0.0046***	0.0242***	0.0318***
	(0.0004)	(0.0008)	(0.0037)	(0.0042)
Panel B				
Cohorts 1969-71	-0.0156***	0.0327***	0.1080***	0.1264***
	(0.0028)	(0.0066)	(0.0243)	(0.0277)
Cohorts 1967-68	-0.0106***	0.0202***	0.0546***	0.0511**
	(0.0022)	(0.0054)	(0.0186)	(0.0219)
Cohorts 1965-66	-0.0067***	0.0032	-0.0121	-0.0244*
	(0.0017)	(0.0043)	(0.0124)	(0.0144)
Cohorts 1969-71 x Clinics per 100,000 inhab	-0.0561***	-0.1492***	-0.1707**	-0.1364
	(0.0148)	(0.0401)	(0.0835)	(0.1025)
Cohorts 1967-68 x Clinics per 100,000 inhab	-0.0447***	-0.1289***	-0.1972**	-0.1689*
	(0.0116)	(0.0321)	(0.0741)	(0.0858)
Cohorts 1965-66 x Clinics per 100,000 inhab	-0.0333***	-0.0843***	-0.0472	-0.0028
	(0.0094)	(0.0280)	(0.0515)	(0.0594)
Linear trend	0.0001	-0.0149***	-0.0505***	-0.0379***
	(0.0003)	(0.0010)	(0.0030)	(0.0037)
Panel C				
Cohort	-0.0013***	-0.0117***	-0.0413***	-0.0278***
	(0.0003)	(0.0009)	(0.0025)	(0.0032)
Cohort x Clinics per 100,000 inhab	-0.0062***	-0.0174***	-0.0180*	-0.0130
	(0.0015)	(0.0045)	(0.0096)	(0.0116)
Province FE	Y	Y	Y	Y
Observations	700	700	700	700

Notes: Results from estimating equation (3) over the average number of births per woman to a cohort and province at 18 years old (Column 1), 21 years old (Column 2), and so on. The average number of births per woman to a cohort and province was calculated as the total number of births by cohort and province (based on birth records between 1975 and 2015) divided by the size of the cohort by province in 1981 (based on female population by age and province in 1981, source: 1981 Population and Housing Census). Sample: 1958-1971 cohorts. Treated cohorts are those born between 1965 and 1971 so that they are aged 21 or younger at the time of the reform. Robust standard errors clustered at province level (50 clusters) in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 8. Long-term effect on educational achievement of affected women. Clinics per 100.000 inhabitants in 1989.

PANEL 1: EDUCATION ACHIEVEMENT				
	hsdrop	hsgrad	vocational	college
Treated Cohorts	0.0293***	-0.0108***	-0.0120	-0.0064
	(0.0095)	(0.0034)	(0.0094)	(0.0051)
Clinics per 10000 inhabs	-8.1021***	-2.6705*	12.6244***	-1.8517
	(1.4936)	(1.3649)	(1.0606)	(1.2382)
Treated*Clinics per 100000 inhabs	-0.0536**	0.0362***	0.0375**	-0.0201
	(0.0213)	(0.0105)	(0.0133)	(0.0117)
Trend	-0.0189***	0.0020**	0.0117***	0.0052***
	(0.0013)	(0.0008)	(0.0016)	(0.0005)
Posttrend	0.0043**	-0.0035***	-0.0083***	0.0075***
	(0.0018)	(0.0010)	(0.0017)	(0.0015)
Constant	3.2826***	1.0717**	-4.2922***	0.9379*
	(0.5402)	(0.4940)	(0.3862)	(0.4466)
FE year & Province	X	X	X	X
Observations	136,339	136,339	136,339	136,339
R-squared	0.0520	0.0088	0.0212	0.0234

PANEL 2: LM AND MARRIAGE EFFECTS				
	Active	Employed	Married	Divorced
Treated cohorts	-0.0264**	-0.0267**	0.0141	0.0052
	(0.0092)	(0.0091)	(0.0134)	(0.0033)
Clinics per 100000 inhab	6.2541***	4.7731***	-6.7515***	0.7582
	(0.9950)	(0.7559)	(1.0716)	(0.7600)
Treated*Clinics per 100000 inhabs	0.0184	0.0236	-0.0275	-0.0194*
	(0.0192)	(0.0210)	(0.0217)	(0.0102)
Trend	0.0090***	0.0064***	-0.0040***	-0.0016**
	(0.0010)	(0.0009)	(0.0009)	(0.0005)
Posttrend	0.0021	0.0020	-0.0246***	-0.0024***
	(0.0019)	(0.0017)	(0.0037)	(0.0006)
Constant	-1.5219***	-1.1017***	3.1906***	-0.2405
	(0.3570)	(0.2682)	(0.3830)	(0.2749)
FE year & Province	X	X	X	X
Observations	136,339	136,339	136,339	136,339
R-squared	0.0268	0.0403	0.0313	0.0124

Note: Results from estimating equation (3) using LFS data (second quarter) from 2000 to 2007. The variable Clinics per 100,000 inhabitants is based on the number of clinics that reported having practiced at least one abortion in 1989, by province (source: 1989 report of voluntary pregnancy interruptions, Ministry of Health, Social Services and Equality). Treated cohorts are those born between 1965 and 1971 so that they are aged 21 or younger at the time of the reform. Standard errors clustered by cohort.

Table 9. Long-term effects on life satisfaction

	Satisfaction with job (1)	Satisfaction with economic status (2)	Satisfaction with housing (3)	Satisfaction with leisure time (4)	PCA (first component) (5)
Treated Cohorts	-0.0571	-0.0319	-0.0897	-0.0536	-0.0870
	(0.0894)	(0.0902)	(0.0674)	(0.0866)	(0.0788)
Treated x Clinics per 100,000 inhab	0.2718	-0.0412	0.1380**	0.2356***	0.2167*
	(0.1580)	(0.1277)	(0.0551)	(0.0552)	(0.1085)
Linear trend	0.0085	0.0117	0.0070	0.0020	0.0120
	(0.0156)	(0.0144)	(0.0106)	(0.0208)	(0.0137)
Post x Linear trend	-0.0257	-0.0347	-0.0022	-0.0027	-0.0277
	(0.0335)	(0.0211)	(0.0166)	(0.0234)	(0.0255)
Regional FE	X	X	X	X	X
Observations	3,939	3,935	3,935	3,937	3,934
R-squared	0.0248	0.0247	0.0345	0.0180	0.0350

Notes: Results from estimating equation (3) based on the 2000 wave of the ECHP. The dependent variables “Satisfaction with…” in columns 1 to 4 range from 1 to 6, where 1 means “Unsatisfied” and 6 “Fully satisfied”. In column 5, the dependent variable is the first component of a Principal Component Analysis using the variables in columns 1 to 4. Sample: women who live in the same region where they born or migrate to that region before 1985, cohorts 1958-1971. Treated cohorts are those born between 1965 and 1971 so that they are aged 21 or younger at the time of the reform. The maximum regional desegregation of these data is at *Comunidad Autónoma* level, so standard errors are clustered at that level (17 clusters). *** p<0.01, ** p<0.05, * p<0.1

Appendix

Table A1. Effect of abortion legalization on the number of births. Alternative windows

	Births		*Births in logs*		*Births per 100,000 women*	
	(1)	(2)	(3)	(4)	(5)	(6)
A. Window: 24 months						
All	-561.917	-561.917	-0.015	-0.015	-0.060	-0.060
	(483.168)	(471.093)	(0.013)	(0.013)	(0.060)	(0.058)
By quartiles of mother's age:						
Q1: 23 and younger	-243.292**	-243.292**	-0.027**	-0.027**	-0.088**	-0.088**
	(118.834)	(112.291)	(0.012)	(0.012)	(0.042)	(0.039)
Q2: 24-26 y.o.	-95.083	-95.083	-0.010	-0.010	-0.072	-0.072
	(131.141)	(134.186)	(0.016)	(0.016)	(0.147)	(0.148)
Q3: 27-30 y.o.	-16.667	-16.667	-0.001	-0.001	-0.019	-0.019
	(132.271)	(129.909)	(0.013)	(0.013)	(0.120)	(0.117)
Q4: 31 and older	-206.875	-206.875	-0.021	-0.021	-0.048	-0.048
	(166.955)	(158.965)	(0.017)	(0.016)	(0.051)	(0.048)
B. Window: 30 months						
All	-670.944	-670.944*	-0.018*	-0.018*	-0.070	-0.070
	(405.894)	(375.779)	(0.010)	(0.010)	(0.052)	(0.046)
By quartiles of mother's age:						
Q1: 23 and younger	-266.528**	-266.528***	-0.031***	-0.031***	-0.098**	-0.098***
	(111.309)	(89.401)	(0.010)	(0.009)	(0.039)	(0.031)
Q2: 24-26 y.o.	-242.111**	-242.111**	-0.029**	-0.029**	-0.175	-0.175
	(109.180)	(111.340)	(0.013)	(0.013)	(0.126)	(0.122)
Q3: 27-30 y.o.	19.583	19.583	0.002	0.002	-0.041	-0.041
	(115.179)	(109.314)	(0.012)	(0.011)	(0.109)	(0.100)
Q4: 31 and older	-181.889	-181.889	-0.019	-0.019	-0.034	-0.034
	(129.726)	(118.560)	(0.013)	(0.012)	(0.040)	(0.036)
Linear trend in months	Y	Y	Y	Y	Y	Y
Quadratic trend in		Y		Y		Y
Calendar month	Y	Y	Y	Y	Y	Y

Notes: Results from estimating equation 1 using monthly births records. The table displays the coefficient of the variable *Post*, which takes the value 1 from December 1985 onwards and 0 otherwise. In panel A, we include 24 months pre- and post- December 1985, so that our sample contains 48 months starting in December 1983 and finishing in December 1987. In panel B, we include 30 months pre- and pot-December 1985, so that our sample contains 60 months starting in June 1982 and finishing in June 1988. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table A2. Effect of abortion legalization on the number of births, by mother's age.

	Births		*Births in logs*		*Births per 1000 women*	
	(1)	(2)	(3)	(4)	(5)	(6)
Younger 16	-15.090***	-15.090***	-0.198***	-0.198***	-0.049***	-0.049***
	(5.591)	(4.876)	(0.063)	(0.056)	(0.017)	(0.015)
16 y.o.	-31.465***	-31.465***	-0.163***	-0.163***	-0.104***	-0.104***
	(6.814)	(6.877)	(0.035)	(0.035)	(0.022)	(0.022)
17 y.o.	-50.604***	-50.604***	-0.122***	-0.122***	-0.145***	-0.145***
	(11.509)	(11.503)	(0.029)	(0.029)	(0.037)	(0.036)
18 y.o.	-23.368**	-23.368**	-0.037**	-0.037**	-0.059*	-0.059
	(11.303)	(11.649)	(0.017)	(0.017)	(0.035)	(0.035)
19 y.o.	-14.708	-14.708	-0.015	-0.015	-0.047	-0.047
	(14.794)	(14.922)	(0.014)	(0.015)	(0.047)	(0.046)
20 y.o.	-121.250***	-121.250***	-0.098***	-0.098***	-0.280***	-0.280***
	(22.970)	(22.200)	(0.017)	(0.017)	(0.083)	(0.070)
21 y.o.	-34.479	-34.479	-0.021	-0.021	-0.087	-0.087
	(25.654)	(25.702)	(0.017)	(0.017)	(0.087)	(0.080)
22 y.o.	48.083	48.083	0.024	0.024	-0.043	-0.043
	(34.674)	(31.211)	(0.018)	(0.017)	(0.121)	(0.100)
23 y.o.	-4.229	-4.229	-0.007	-0.007	-0.081	-0.081
	(46.244)	(31.325)	(0.018)	(0.014)	(0.132)	(0.104)
24 y.o.	-118.938***	-118.938***	-0.049***	-0.049***	-0.152	-0.152
	(41.967)	(37.923)	(0.016)	(0.015)	(0.133)	(0.122)
25 y.o.	-100.340***	-100.340***	-0.036***	-0.036***	-0.221	-0.221*
	(36.419)	(36.979)	(0.013)	(0.013)	(0.133)	(0.123)
26 y.o.	-69.694	-69.694	-0.022	-0.022	-0.282	-0.282
	(60.941)	(54.376)	(0.021)	(0.019)	(0.179)	(0.179)
27 y.o.	-67.375	-67.375*	-0.024	-0.024*	-0.157	-0.157
	(43.434)	(37.201)	(0.015)	(0.013)	(0.124)	(0.125)
28 y.o.	70.944**	70.944**	0.027**	0.027**	0.117	0.117
	(28.970)	(29.179)	(0.011)	(0.011)	(0.114)	(0.102)
29 y.o.	45.632	45.632	0.019	0.019	-0.029	-0.029
	(44.978)	(40.001)	(0.019)	(0.017)	(0.156)	(0.143)
30 y.o.	23.646	23.646	0.012	0.012	0.047	0.047
	(49.893)	(37.752)	(0.023)	(0.017)	(0.160)	(0.149)
31 y.o.	-52.361	-52.361	-0.028	-0.028	-0.111	-0.111
	(39.332)	(33.529)	(0.022)	(0.019)	(0.138)	(0.133)
32 y.o.	-103.118***	-103.118***	-0.068***	-0.068***	-0.251**	-0.251**
	(23.929)	(23.828)	(0.016)	(0.016)	(0.097)	(0.096)
33 y.o.	38.160	38.160	0.030	0.030	0.026	0.026
	(24.757)	(24.613)	(0.019)	(0.019)	(0.099)	(0.098)
34 y.o.	45.333	45.333*	0.039	0.039*	-0.033	-0.033
	(29.774)	(24.871)	(0.027)	(0.023)	(0.103)	(0.103)
35 y.o.	-29.035	-29.035	-0.035	-0.035*	0.010	0.010
	(25.952)	(18.319)	(0.027)	(0.020)	(0.074)	(0.068)
N (number	72	72	72	72	72	72
Linear trend	Y	Y	Y	Y	Y	Y
Quadratic		Y		Y		Y
Calendar	Y	Y	Y	Y	Y	Y

Notes: Results from estimating equation 1 using monthly births records. The table displays the coefficient of the variable *Post*, which takes the value 1 from December 1985 onwards and 0 otherwise. We include 36 months pre- and post- December 1985, so that our sample contains 72 months starting in December 1982 and finishing in December 1988. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table A.3. Short-term fertility effects by region according to clinics availability. Alternative measure of clinics availability (births in logs)

	All	21 and younger	Older 21
A. Dividing the sample according to whether there was at least one clinic that practiced abortions in 1989 in province *p*			
Post (provinces with no clinics)	-0.0001	-0.0362	0.0052
	(0.0097)	(0.0289)	(0.0105)
Post (provinces with at least one clinic)	-0.0206***	-0.0801***	-0.0121*
	(0.0055)	(0.0146)	(0.0060)
B. Using distance to the nearest province with at least one clinic			
Post	-0.0257***	-0.0778***	-0.0177**
	(0.0068)	(0.0179)	(0.0074)
Post x Distance	0.0003***	0.0004*	0.0003***
	(0.0001)	(0.0002)	(0.0001)
C. Using the absolute number of clinics			
Post	-0.0093	-0.0524***	-0.0030
	(0.0080)	(0.0173)	(0.0083)
Post x N. of clinics	-0.0013	-0.0053*	-0.0008
	(0.0028)	(0.0031)	(0.0028)
N (months x provinces)	3,600	3,600	3,600
Linear trend in months	Y	Y	Y
Quadratic trend in months	Y	Y	Y
Calendar month dummies	Y	Y	Y
Province fixed-effects	Y	Y	Y

Notes: Results from estimating equation (2) using births records by month and province. The variable *Post* takes the value 1 from Dec 1985 onwards and 0 otherwise. In panel A, we divide the sample into two groups according to whether there was at least one clinic that practiced abortions in 1989 in province *p* or not. In panel B, the variable Distance is the distance (in km) to the nearest province with at least one clinic that practiced abortions in 1989. In panel C, the variable *Nclinics* is the absolute number of clinics that practiced abortions in 1989 in province *p*. Standard errors clustered at province level (50 clusters). *** p<0.01, ** p<0.05, * p<0.1.

Table A4. Short-term fertility effects by region according to clinics availability and demand factors

	Births	*Births in logs*	*Births per 1000 women*
A. Baseline			
Post	14.0432*	0.0013	0.0282
	(8.3071)	(0.0086)	(0.0357)
Post x Clinics per 100,000 inhab	-212.5935***	-0.0947**	-0.4416**
	(51.9902)	(0.0399)	(0.1680)
B. Controlling for birth rates among young women			
Post	16.6034	-0.0199	0.2101***
	(24.7133)	(0.0166)	(0.0673)
Post x Clinics per 100,000 inhab	-210.9857***	-0.1081***	-0.3274*
	(57.4055)	(0.0389)	(0.1678)
Post x Births<18	-256.6508	2.1295	-18.2416***
	(2,362.0096)	(1.3761)	(5.7185)
Post	56.1920**	-0.0177	0.2389***
	(23.1137)	(0.0195)	(0.0756)
Post x Clinics per 100,000 inhab	-191.5328***	-0.1042***	-0.3363**
	(58.4177)	(0.0383)	(0.1539)
Post x Births<21,unmarried	-8,597.4302*	3.8697	-42.9897***
	(5,030.6322)	(3.4079)	(11.8854)
C. Controlling for religiosity			
Post	-79.1909	0.0465	-0.1458
	(55.8680)	(0.0308)	(0.1242)
Post x Clinics per 100,000 inhab	-145.5945**	-0.1273***	-0.3166*
	(59.1657)	(0.0406)	(0.1617)
Post x Fraction of Practicing Catholics	133.6895*	-0.0649	0.2494
	(76.2388)	(0.0442)	(0.1843)
N (months x provinces)	3600	3600	3600
Linear trend in months	Y	Y	Y
Quadratic trend in months	Y	Y	Y
Calendar month dummies	Y	Y	Y
Province fixed-effects	Y	Y	Y

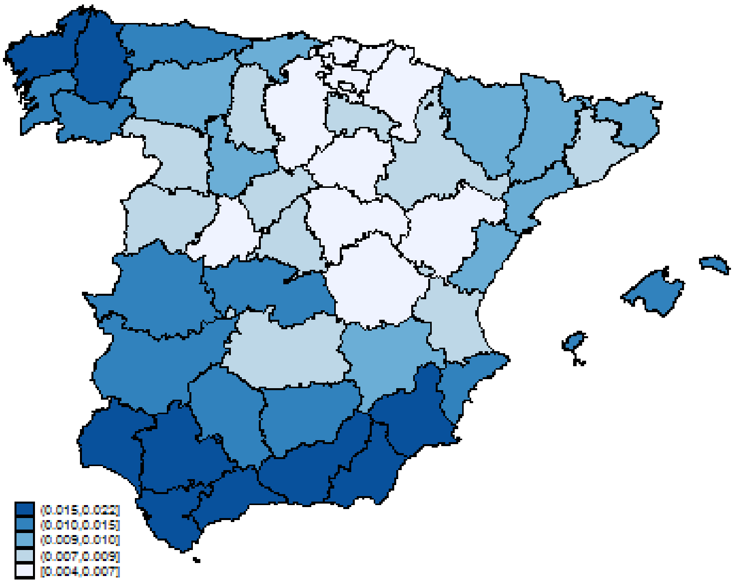
Notes: Results from estimating equation (2) using births records by month and province. The variable *Post* takes the value 1 from Dec 1985 onwards and 0 otherwise. Standard errors clustered at province level (50 clusters). *** p<0.01, ** p<0.05, * p<0.1

Table A5. Effect of abortion legalization on the number of marriages, by mother's age.

Dep. variable:	*Marriages*		*Marriages in logs*		*Marriages per 1000 women*	
	(1)	(2)	(3)	(4)	(5)	(6)
Younger 16	-8.403	-8.403	-0.146	-0.146	-0.014	-0.014
	[7.884]	[6.185]	[0.087]	[0.076]	[0.012]	[0.010]
16 y.o.	-9.097	-9.097	-0.051	-0.051	-0.030	-0.030
	[8.766]	[8.696]	[0.044]	[0.044]	[0.027]	[0.027]
17 y.o.	-14.687	-14.687	-0.026	-0.026	-0.034	-0.034
	[21.001]	[21.018]	[0.048]	[0.048]	[0.066]	[0.065]
18 y.o.	-4.653	-4.653	-0.006	-0.006	-0.009	-0.009
	[32.265]	[31.957]	[0.041]	[0.041]	[0.100]	[0.099]
19 y.o.	-12.549	-12.549	-0.006	-0.006	-0.010	-0.010
	[48.403]	[48.076]	[0.043]	[0.043]	[0.153]	[0.149]
20 y.o.	-46.153	-46.153	-0.043	-0.043	-0.074	-0.074
	[62.650]	[62.426]	[0.045]	[0.045]	[0.202]	[0.193]
21 y.o.	70.604	70.604	0.043	0.043	0.151	0.151
	[77.304]	[77.981]	[0.043]	[0.043]	[0.248]	[0.247]
22 y.o.	76.889	76.889	0.039	0.039	0.103	0.103
	[77.035]	[75.129]	[0.042]	[0.040]	[0.244]	[0.239]
23 y.o.	-1.854	-1.854	-0.008	-0.008	0.058	0.058
	[94.208]	[90.743]	[0.045]	[0.042]	[0.292]	[0.288]
24 y.o.	-1.868	-1.868	0.004	0.004	0.124	0.124
	[88.821]	[88.698]	[0.042]	[0.042]	[0.290]	[0.290]
25 y.o.	35.771	35.771	0.045	0.045	0.128	0.128
	[74.430]	[74.584]	[0.040]	[0.041]	[0.249]	[0.245]
26 y.o.	31.583	31.583	0.023	0.023	0.097	0.097
	[59.614]	[59.980]	[0.041]	[0.042]	[0.198]	[0.196]
27 y.o.	12.750	12.750	0.024	0.024	0.038	0.038
	[47.046]	[46.263]	[0.045]	[0.045]	[0.159]	[0.154]
28 y.o.	22.785	22.785	0.075	0.075	0.053	0.053
	[29.989]	[28.812]	[0.041]	[0.041]	[0.101]	[0.097]
29 y.o.	8.181	8.181	0.038	0.038	0.018	0.018
	[24.766]	[21.702]	[0.049]	[0.046]	[0.082]	[0.075]
30 y.o.	5.639	5.639	0.067	0.067	0.033	0.033
	[16.198]	[12.686]	[0.050]	[0.041]	[0.053]	[0.046]
31 y.o.	-6.090	-6.090	-0.006	-0.006	-0.004	-0.004
	[11.160]	[10.420]	[0.044]	[0.043]	[0.041]	[0.039]
32 y.o.	-1.167	-1.167	-0.002	-0.002	0.001	0.001
	[9.646]	[9.763]	[0.064]	[0.064]	[0.038]	[0.038]
33 y.o.	11.882	11.882	0.113*	0.113*	0.032	0.032
	[6.911]	[6.734]	[0.054]	[0.054]	[0.028]	[0.028]
34 y.o.	5.340	5.340	0.055	0.055	0.017	0.017
	[5.990]	[5.644]	[0.057]	[0.054]	[0.023]	[0.023]
35 y.o.	1.076	1.076	0.022	0.022	0.024	0.024
	[5.484]	[5.418]	[0.061]	[0.061]	[0.022]	[0.022]
N (number of	72	72	72	72	72	72
Linear trend in	Y	Y	Y	Y	Y	Y
Quadratic trend		Y		Y		Y
Calendar month	Y	Y	Y	Y	Y	Y

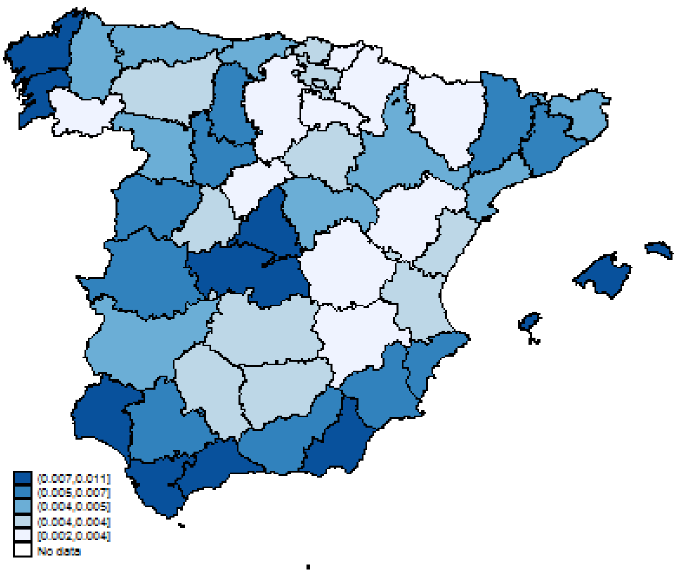
Notes: The table displays the coefficient of the variable *Post*, which takes the value 1 from Dec 1985 onwards and 0 otherwise.

Figure A1. Province variation in birth rates to women 18 and younger in 1984.



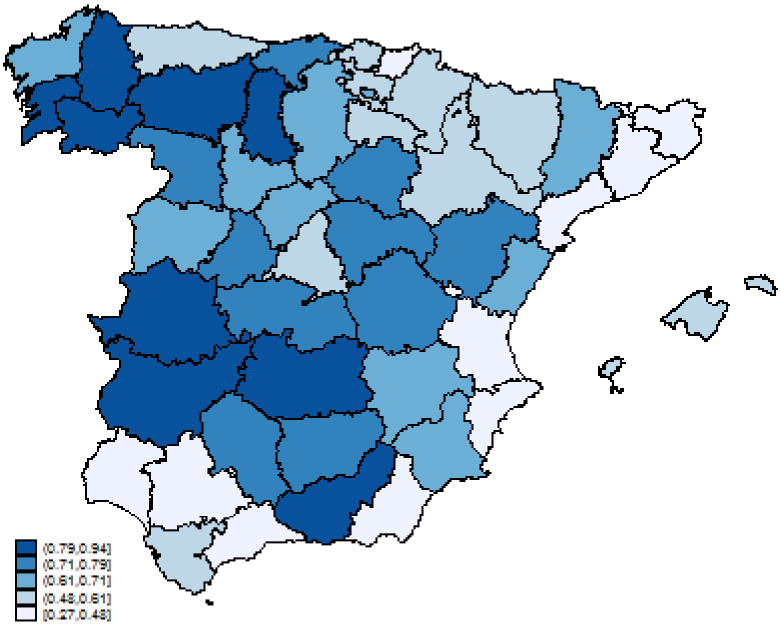
Notes: Authors' calculations based on birth-certificate data and female population data in 1984 (Source: Spanish National Statistical Institute). Birth rates to women 18 and younger in 1984 are defined as the number of births of mothers aged 18 or less per province in 1984 divided by female population of 15-19 years old per province.

Figure A2. Province variation in birth rates to unmarried women 21 or younger in 1984.



Notes: Authors' calculations based on birth-certificate data and female population data in 1984 (Source: Spanish National Statistical Institute). Birth rates to unmarried women 21 and younger in 1984 are defined as the number of births of unmarried mothers aged 21 or less per province in 1984 divided by female population of 15-19 years old per province.

Figure A3. Province variation in the fraction of women aged between 15-49 practicing Catholics in 1985



Source: 1985 Fertility Survey microdata, Spanish National Statistical Institute. Practicing catholic are those who actually practice the religion, for example, going to Mass every Sunday. Answers from the 1985 FS are missing for 7 provinces (Avila, Guadalajara, Huelva, Lleida, Segovia, Soria and Teruel) due to lack of enough sample size to be representative of the population of interest. To estimate the religiosity of these missing provinces we follow the multiple imputation methodology suggested by Rubin (1987) and regress the catholic practicing rate by province on a group of other indicators for the same or around years.