The Impacts of Restricted Access to Abortion and Family Planning Services: Evidence from Clinic Closures in Texas

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March 29, 2017

Abstract

Access to abortion and publicly funded family planning services in the U.S. has declined considerably over the past five years. We separately identify the impacts of restricted access to abortion clinics and non-abortion family planning clinics on reproductive behavior using data on abortions, births, and contraceptive purchases. Variation in clinic access comes from three pieces of legislation in Texas that have resulted in the closure of more than half of the state's abortion clinics and large cuts in funding to non-abortion family planning clinics. First, we show that increasing the driving distance to the nearest abortion provider by 50 miles reduces the number of abortions within Texas by 10.6%, though much of this decrease is offset by increases in bordering states. We find that reduced access to abortion services leads to an increase in the number of births; births among the most affected group – women in their thirties – increase by approximately 1% for a 50 mile increase in distance to the nearest clinic. Using retail scanner data, we find that reduced access to abortion services also leads to increased contraceptive purchases, suggesting that individuals are taking precautionary measures in response to the increased cost of seeking an abortion. Second, we find that decreased access to non-abortion family planning clinics also leads to an increase in the number of births; births among the most affected groups – women age 25-34 – increase by approximately 1.6% for a 25 mile increase in distance to the nearest clinic receiving public funding.

JEL Codes: J13, I18, J08, J18, I38
Keywords: family planning, abortion, birth, contraception, reproductive, health

PRELIMINARY DRAFT – PLEASE DO NOT CIRCULATE

"Well, they'll perhaps have to go to another state."

— Donald Trump, president-elect, on overturning Roe V. Wade, November 2016

1 Introduction

Access to contraceptives and family planning services affords women the opportunity to delay childbearing, allowing them to achieve educational and career goals. It has also been shown that unintended births impose external costs on society (Mosher et al., 2012; Gruber et al., 1999). In 2014, 38 million women in the U.S. sought some type of contraceptive care, 20 million of which either had an income below 250 percent of the federal poverty level (15.5 million) or were younger than 20 years-old (4.7 million) (Frost et al., 2016). Moreover, about three in ten women will have an abortion by age 45, and in 2015, 50 percent of these women were below the poverty line (Jones et al., 2010; Jerman et al., 2016).[1] Despite the high demand, public funding for family planning clinics and the existence of abortion clinics are controversial among policymakers and the general public.

Between 2010 and 2014, states have enacted 231 abortion restrictions, and nine states currently prohibit certain types of family planning providers from receiving government funds. Proponents of these policies often link them to supporting life and women's health. A statement from Rick Perry, Governor of Texas, and another one from the Democratic National Platform highlight the tension among lawmakers around this topic. "This is an important day for those who support life and for those who support the health of Texas women," Governor Perry remarked after signing House Bill 2 in 2013; a bill that introduced new stringent regulations on abortion providers in Texas. In contrast, others view these clinics and services as important safety-nets. Regarding the recent de-funding of publicly funded clinics, the Democratic National Platform states, "We will continue to stand up to Republican efforts to de-fund Planned Parenthood health centers, which provide critical health services to millions of people. We will continue to oppose – and seek to

[1] Of those, 60% are in their 20s, 12% are teens, 39% are white, 28% are black, and 25% are Hispanic.

overturn – federal and state laws and policies that impede a woman's access to abortion."

While lawmakers continue to pass legislation that increases regulation on abortion providers and limits funding for non-abortion family planning providers, relatively little is known about the impacts of these laws. The goal of this paper is to quantify the effects of reduced access to family planning services, both abortion and non-abortion, on fertility decisions. We leverage three major pieces of legislation that were implemented in Texas over a four year period beginning in 2011. The first two pieces of legislation limited the ability of non-abortion family planning providers to receive government funding. The aim of the clinics affected by these policies is to provide contraceptives, sexual education, family planning counseling, sexually transmitted infection screening and treatment, cancer screening, and pregnancy testing to low income women and teens. The third piece of legislation imposed more stringent requirements on the operation of abortion clinics, resulting in the closure of over half of the abortion clinics in the state.[2] Together, these three pieces of legislation provide significant variation in access to abortion and non-abortion family planning services across space and time.

Based on estimates of the price elasticity of demand for health care (Manning et al., 1987; Ringel et al., 2002; Baicker and Goldman, 2011), one would expect reduced access to family planning services to decrease utilization due to the increase in cost of obtaining these services. In practice, however, it is less clear how women's fertility behavior is affected, and it likely depends on the type of clinic under consideration.

Focusing on access to abortion providers, there are at least four ways in which reduced access to abortion services could affect a woman's fertility decisions. One, she could have a child when she otherwise would not have, leading to fewer abortions and an increase in births. Two, she could travel farther to obtain an abortion including traveling to out of state clinics. This would lead to fewer abortions within the state and an increase in out-of-state abortions; if *all* women travel to obtain an abortion then birth rates would remain unchanged. Three, individuals may practice safer sex or abstain as a result of clinic closures. If it is known that in-state abortion clinic access is very

[2] Abortion clinics administer medical (the abortion pill) and surgical abortion.

limited, which is likely in our setting as these closures have been highly publicized, individuals may take precautionary measures by practicing safer sex. Four, a woman may attempt an at-home abortion or seek an illegally provided abortion.

Drawing on several data sources, we test the four hypotheses outlined above. Our measure of access to abortion is the driving distance from each woman's population-weighted county centroid to the address of the nearest abortion provider. We find that increasing distance to the nearest abortion clinic by 50 miles reduces the within-Texas abortion rate by 10.6%. Note that this does not necessarily imply a total net change in the number of abortions received; in order to determine the total net effect on abortion rates, one would need to observe all abortions provided to Texas residents including those performed outside of Texas, and such data is not available.[3] In the extreme case, if the decline in within-Texas abortions were completely offset by women traveling out of state to seek an abortion, then we would find no impact on the number of births.

Using national-level data on births which identifies the mother's residence regardless of where the birth took place, we show that restricted access to abortion services results in a net increase in births. Our results indicate that increasing driving distance to the nearest abortion clinic by 50 miles increases the overall number of births in a region by 0.4%, though this estimate is not statistically different from zero. These birth increases are concentrated among mothers in their 30s, who experience an increase in births of about 1% for a 50 mile increase in distance to the nearest clinic. Furthermore, these impacts are concentrated among women who are uneducated, white, married and already have at least two children.

To test for precautionary behavior, we utilize the Nielsen Retail Scanner database – this large sample of retailers contains the price and quantity of nearly every item purchased in participating outlets (mostly grocery stores and drug stores). Our results indicate that reduced access to abortion services leads to an increase in traditional contraceptive purchases (i.e., condoms), suggesting that individuals are taking precautionary measures in response to the highly-publicized increased cost of obtaining abortion services.

[3] Although descriptive in nature, we show non-resident abortion rates in the states that border Texas increase at the same time of the Texas abortion clinic contraction, suggesting the net effect on abortion rates is less than 10.6%.

Reduced access to non-abortion family planning services can affect fertility behavior in at least two ways.[4] First, one function of family planning clinics is to offer sexual education and family planning advice. Reduced clinic access may lead to a lower awareness of such topics, reducing the likelihood that individuals take precautionary measures, leading to a rise in birth rates. Second, family planning clinics offer increased access to subsidized or free contraceptives. Reducing access to subsidized contraceptives may cause individuals to be less likely to use these products which would lead to an increase in birth rates. On the other hand, individuals who once obtained contraceptives from a publicly funded family planning clinic may substitute towards contraceptives that can be purchased over-the-counter.

Our measure of access to non-abortion family planning is the driving distance from each woman's population-weighted county centroid to the address of the nearest clinic receiving public funding. Note we will often refer to publicly funded non-abortion family planning clinics as simply "family planning clinics" for the sake of brevity in notation. Our measure of access does not only measure clinic closures like our measure of access for abortion, but it measures changes in the funding status of clinics. We view this measure as preferable to a measure of closures as the funding cuts did not only affect whether a clinic would be forced to close, but the funding cuts affected the services that could be offered for clinics that remained open as well. We find that decreased access to family planning clinics leads to an increase in the number of births; births among the most affected group – women age 25-34 – increase by approximately 1.6% for a 25 mile increase in distance to the nearest funded clinic. We show that this increase in births changes the composition of mothers by increasing the share of low-education mothers and the share of Hispanic mothers. Using retail scanner data, we find no impact of reduced access to family planning clinics on traditional contraceptives (i.e., condoms) or on emergency contraceptives (i.e., Plan B), suggesting limited substitution toward over-the-counter contraceptives.

This paper adds to an expansive and growing literature on reproductive policies in at least three

[4]The aim of this paper is to study fertility behavior but we acknowledge reduced access to family planning clinics may also affect other outcomes such as the incidence of sexual transmitted disease and other health outcomes such as cancer.

important ways. First, we provide a comprehensive analysis of the impacts of a large contraction in clinic access. The existing literature largely relies on policies that expand access, but the outcomes associated with expansions and contractions are not necessarily symmetrical. Second, this study exploits variation in access to family planning services in the modern era. Much of the previous work leverages variation in clinic access in the sixties and seventies, but the landscape for women has changed dramatically over the past fifty years. Third, because the shocks occurred at different points in time and affected abortion and non-abortion clinics differently, we are able to separately identify the causal impacts of access to abortion providers and to non-abortion family planning providers.

We largely contribute to two subsets of the reproductive policy literature; one of which addresses access to contraceptives. Many studies have examined the expansion of oral contraceptives and show that it led to delayed childbearing, reduced fertility, increased career investment for women, and better child outcomes (Goldin and Katz, 2002; Kearney and Levine, 2009; Bailey, 2012; Ananat and Hungerman, 2012; Bailey, 2013).[5] Another group of papers investigate the effect of parental involvement laws on fertility behavior and find mixed results (Colman et al., 2013; Levine, 2001; Averett et al., 2002; Levine, 2003; Sabia and Anderson, 2016).

More recently, Lu and Slusky (2016), Packham (2016) and Stevenson et al. (2016) quantify the effects of access to family planning services using the 2011 funding cuts to family planning services in Texas. Lu and Slusky (2016) find that an increase of 100 miles to the nearest clinic leads to a reduction in the annual utilization rate of a clinic breast exam by 11 percent, a mammogram by 18 percent, and a Pap test by 14 percent. Packham (2016) uses a difference-in-difference estimation strategy in which she compares changes in teen birth rates in Texas counties that had at least one publicly-funded family planning clinic in the pre-policy period with similar counties in other states that did not reduce funding to family planning clinics. She finds that reducing funding for non-abortion family planning services in Texas increases teen birth rates by about 4% in the years subsequent to the policy. Stevenson et al. (2016) find that the usage of long acting reversible

[5] In a related study, Gross et al. (2014) shows expanding access to emergency contraceptives has little effect on birth or abortion rates.

contraceptives (LARCs) declines as a result of the policy but find no change in use of short acting hormonal contraceptives i.e., "the pill". They also show an increase in Medicaid covered births as a result of the funding cuts.[6]

This paper also contributes to a literature that analyzes the impacts of changes in the cost of obtaining abortion services. A majority of the existing studies leverage the early state-level legalization of abortion (pre-1973) and the national legalization of abortion in 1973, Roe v. Wade (Myers, 2016; Levine et al., 1999; Angrist and Evans, 1999; Levine, 2004; Joyce et al., 2013).[7] By and large, these studies find that birth rates decrease when access is expanded. Guldi (2008) leverages parental consent laws and Roe v. Wade and shows birthrates among young women declined as a result of abortion access. Colman and Joyce (2011) leverage a 2004 policy in Texas that restricted access to late-term abortion providers, but less than 5 percent of abortions in Texas were considered late-term, so it is unclear how well these results extend to fertility rates more generally.[8]

The remainder of the paper is organized as follows: Section 2 provides details on the relevant legislative background. Section 3 describes the data. Section 4 presents the econometric specification. Section 5 reports the results and includes a discussion. Section 6 concludes.

2 Background

In this section, we first describe the policy setting in the U.S. and Texas in Section 2.1. Next, we describe the specific pieces of legislation that we study in Section 2.2.

[6]Several other papers focus on the effects of family planning legislation on other outcomes. Klick et al. (2012) look at sexual behavior , Pop-Eleches (2006) studies socioeconomic outcomes of children, and Donohue and Levitt (2001) look at outcomes related to crime.

[7]There also exists a group of papers that use Roe v. Wade that are more descriptive in nature. See Joyce et al. (2013) for a complete list.

[8]There also exists a related literature on abortion-related terrorism (Jacobson and Royer, 2011) and on other anti-abortion activities such as picketing and protests (Cozzarelli and Major, 1994; Doan, 2009). These papers are similar to ours in that they study events that lead to an increase in the cost of obtaining abortion services.

2.1 Policy Setting

According to the Guttmacher Institute, women are considered in need of free or subsidized reproductive care if they are sexually active, able to conceive, wish not to become pregnant, and are either adults with a family income below 250 percent of the federal poverty level or are younger than 20 years of age (regardless of income). By this definition, there were 1,795,160 Texans in need in 2014. The primary provider of these services are publicly funded family planning clinics – often know as safety-net clinics – which include public health departments, federally qualified health centers, Planned Parenthood affiliates, hospital outpatient clinics, and other independent non-profit health centers. There also exists in the U.S. a small number of non-profit family planning clinics that are funded exclusively by private contributions and receive no tax dollars, though in Texas these are quite rare. Services provided by publicly funded clinics include free or subsidized contraceptives, screenings for STIs, Pap tests, vaccination for human papillomavirus (HPV), other key preventive care services, and sexual education.

Publicly funded clinics may receive a variety of federal and state grants but the main source is Title X; a federal program dedicated to family planning.[9] Congress introduced Title X in 1970 as part of the Public Health Service Act. The goal of this legislation was to make family planning services available to women who wanted them but were unable to afford them. Today, Title X clinics still play a critical role in ensuring all women have access to family planning services. It remains the only federally funded program dedicated solely to providing reproductive care to low income and uninsured individuals. Receipt of Title X funds is also tied to other federal programs: first, clinics receiving Title X funds become eligible for the federal 340B Drug Pricing Program, which provides discounts on pharmaceuticals (including contraceptives) of up to 50%. Second, clinics receiving Title X funds are exempt from state-level parental consent laws (including Texas) that require parents of teenage women to consent to the receipt of contraceptives.

In the U.S. it is permissable for publicly-funded family planning clinics to provide abortion

[9]Publicly funded family planning clinics are also funded by Medicaid, Title V (maternal and child health), and Title XX (social services).

services, though it is unlawful for federal dollars to fund such procedures; in these types of clinics federal dollars must go to non-abortion related expenses. It has always been the case that Title X funds are ineligible to cover abortion services, but in 1976 Congress passed the Hyde amendment which further reduced federal funds for abortions; it prohibited Medicaid from covering them expect in the case of incest, rape, or when the mother's life is threatened.

Even though the federal government does not prohibit federal family planning funds from being distributed to health care facilities that perform abortions so long as they do not directly fund them, several states including Texas do have such prohibitions. That is, in Texas and six other states, family planning clinics that receive any public funding cannot provide abortions. This law has been in effect in Texas since 2003.[10] Proponents of the law felt that under the old funding regime abortion services were indirectly funded because clinics would be able to use public funding to provide eligible services, thereby freeing up non-public funds that could be used to provide abortions.

To be clear, facilities that provide abortions must be separate from facilities that provide other family planning services in the state of Texas, so long as the non-abortion family planning facilities receive public funding. For the most part, abortion clinics exclusively provide abortions, though there do exist non-specialized clinics that provide both abortions and family planning services. These non-specialized clinics can be non-profit organizations or for-profit clinics, but in Texas these clinics are *not* eligible to receive public funds, state or federal. Woman may also obtain abortion services from a hospital or a general practitioner, but in Texas in 2012 – according to a report by the Texas Department of Social and Health Services – only 0.3 percent of all abortions took place in these types of facilities, where most of them involved an extenuating circumstance (i.e., ectopic pregnancy). By and large, women obtain these services in freestanding clinics. Because of the nature in which Texas funds reproductive services, we are able to separately analyze access to two distinct types of clinics: abortion clinics, and publicly funded family planning clinics (who by law do not provide abortions).

[10]The other states are: Arizona, Arkansas, Colorado, Indiana, Ohio, and Wisconsin. See for more details: https://www.guttmacher.org/state-policy/explore/state-family-planning-funding-restrictions.

2.2 Legislative Background

We leverage three state-level reproductive policies which create three large unanticipated shocks to the supply of abortion and non-abortion family planning services: (1) the 2011 cut to the Department of State Health Services for publicly funded family planning services, (2) the 2011 change in the Texas Women's Health Program which was rolled out in 2013 and disallowed certain clinics from receiving Medicaid reimbursements, and (3) House Bill 2 which took effect in 2014 and greatly reduced access to abortion clinics. All three pieces of legislation had the aim of reducing access to abortion services in the state, either directly as with House Bill 2, or indirectly through cuts to publicly funded family planning clinics – clinics that were often affiliated with abortion providers.

2.2.1 Cuts to DSHS Funding

In 2011, the Texas government enacted two main pieces of legislation which greatly cut funding to family planning clinics in the state, and in particular cut funds to Planned Parenthood affiliates. The first funding cut reduced the Department of State Health Services (DSHS) budget for family planning services. Traditionally, the Texas DSHS funds clinics through federal and state grants including Title V (maternal and child health), Title X (a federal program dedicated to family planning), and Title XX (social services). Clinics funded by these programs include public health departments, federally qualified health centers, Planned Parenthood affiliates, and other private nonprofit health centers.

The budget cut to DSHS reduced funding by about 67% – a cut from $111 million per biennium to $37.9 million for the 2012 - 2013 budget. Importantly, this piece of legislation also reallocated the remaining funds according to a newly implemented tiered system which granted funding priority to clinics providing comprehensive primary care over those whose emphasis was on family planning. Planned Parenthood clinics were considered lowest in funding priority.

These cuts greatly reduced access to family planning clinics. Of the roughly 200,000 women receiving care through these programs, 40% received services from Planned Parenthood and other

clinics specializing in family planning (White et al., 2015). According to White et al. (2015) during 2012, 25% of clinics shut down, and many of the ones that remained open were forced to reduce hours of operation and/or downsize staff. Of the remaining clinics, on average, they only served 54% of the patients that they served in the pre-period. Moreover, due to the funding cuts, in many cases women were now required to pay fees for services and prescriptions that were once free of charge.

By reallocating Title X funds according to the new priority-based funding scheme, many clinics whose emphasis was on family planning ceased to receive Title X funds. Because receipt of Title X funds is tied to other federal programs, these clinics were no longer eligible for the 340B Drug Discount Program and they were no longer exempt from the law requiring parental consent for teenagers receiving contraceptives in the state of Texas.

This reallocation of Title X funds did not last indefinitely, however. Prior to these budget cuts, the State of Texas was the sole Title X grantee for the state. In 2013, however, the Title X grant was awarded to the Women's Health and Family Planning Association of Texas (WHFPT). WHFPT is an association of family planning providers in the state of Texas; as the new Title X grantee for the state, they were able to allocate Title X funds in a manner that did not conform to the state's priority-based funding scheme.

2.2.2 Medicaid Fee-for-Service Family Planning Program

In 2011 the Texas government also passed legislation that excluded family planning clinics that were affiliated with abortion providers (i.e. Planned Parenthood affiliates) from receiving reimbursements through the Women's Health Program (WHP). This law would would take effect in 2013. The WHP was a fee-for-service family planning program with the goal of subsidizing family planning services for low income women. Through this program women can obtain, either for free or at a subsidized rate, contraceptives, cancer screenings, STI testing and treatments, pregnancy tests, and pap tests and pelvic exams. From 2007 to 2011, Texas operated this program through a Medicaid wavier program meaning that it was almost entirely funded by federal dollars;

approximately $30 million per year comprising 90% of the annual budget for WHP (White et al., 2015).[11]

However, in 2011 when the Texas government passed legislation to exclude Planned Parenthood affiliates and other clinics affiliated with abortion providers from the WHP, the federal government terminated their contribution stating that the legislation violated federal law by discriminating against qualified federal providers. The state of Texas then replaced the WHP on January 1, 2013 with a state-funded program called the Texas Women's Health Program. This program was identical to the previous federally funded program but excluded all Planned Parenthood affiliates.

As a result, this policy primarily affected low-income women receiving non-abortion family planning services at Planned Parenthood affiliates. This represents a significant reduction in access to family planning services: twenty-three out of 254 counties in Texas had a Planned Parenthood clinic in the pre-period and about 60% of female Texas residents between 18 and 44 years old whose income was below 185% of the federal poverty line lived in these counties.

2.2.3 House Bill 2

On July 18, 2013 Texas House Bill 2 (HB2) was signed into law. Unlike the previous two pieces of legislation that reduced funding for non-abortion family planning clinics, especially those that may have had ties to abortion providers (e.g. non-abortion providing Planned Parenthood clinics), HB2 was aimed at directly restricting abortion access. Broadly, the bill imposed expensive and difficult-to-implement requirements on abortion facilities. Such bills are often know as Targeted Regulation of Abortion Provider (TRAP) laws. The bill required the following: (1) physicians administering abortions must have admitting privileges at a hospital within 30 miles of the abortion clinic, (2) abortions after 20 weeks post-fertilization are prohibited, unless there is severe fetal abnormality or risk of irreversible physical impairment of a major bodily function (not including psychological) to the mother, (3) in accordance with Food and Drug Administration regulation, women must visit the doctor for each of the two doses of the abortion pill, and after taking the pill, the patient must

[11] Medicaid is a health care safety net program in the United States typically funded jointly by federal and state governments.

be seen in a follow-up appointment within 14 days[12], and (4) all abortions must be performed in a clinic that meets the requirements of an ambulatory surgical center (ASC) (83rd State Legislature, 2013; Choice, 2014).

The first three provisions of the bill went into effect on November 1, 2013. Of the 43 abortion facilities, 8 closed in 2013, primarily due to newly instated admitting privileges regulation. Admitting privilege is the right of a physician to admit patients to a particular hospital by virtue of membership as a hospital's medical staff. Obtaining admitting privileges can be difficult as it is a detailed and tedious process, and nearby hospitals have little incentive to allow an abortion provider to admit patients.

The final provision of HB2, which required all abortion facilities to meet the requirements of ambulatory surgical centers, was enforced in October of 2014. An ambulatory surgical center (ASC) is a health care facility focused on providing same-day surgical care and is an alternative to hospital-based outpatient care. Converting a clinic to meet ASC standards is costly both financially and in time as there is a detailed licensing process, and clinics have to meet physical requirements such as certain room dimensions and corridor widths. This regulation caused eight more clinics to close. By the fall of 2014, just over half of the abortion clinics from the pre-HB2 period had closed.

Importantly for the purposes of this study, these regulations that caused widespread clinic closure were imposed at the state level. That is, clinics were not selecting into closure or closing as a result of market changes (e.g., lack of demand); an issue that would threaten the causal interpretation of our results.

There are several nonprofit organizations in Texas that aim to directly aid women in accessing abortion services. One is Fund Texas Choice, an organization that was formed in 2013 in response to the adoption of HB2. For those who qualify, Fund Texas Choice provides two main services: (1) transportation to clinics including bus and plane tickets, and fuel money for those with their own car and, (2) hotel accommodations.

[12]this is in addition to the existing 24 hour waiting law that requires women who are within 100 miles of a clinic to wait 24 hours between the initial visit and the actual abortion including those seeking the pill.

3 Data

The analysis draws on a number of data sources. Information on abortion and family planning clinic locations, dates of operation, and funding come from the Texas Department of State Health Services (DSHS), the non-profit Fund Texas Choice, the Women's Health and Family Planning Association of Texas (WHFPT), and the Guttmacher Institute. Data on abortion performed are collected from state health departments, and include Texas as well as six nearby states: New Mexico, Kansas, Colorado, Louisiana, Oklahoma and Arkansas. Natality data are derived from the National Vital Statistics System (NVSS) of the National Center for Health Statistics. Data on contraceptive purchases are from the Nielsen Retail Scanner database. Control variables including county-level unemployment rates, per capita income and population come from the Bureau of Labor Statistics's Local Area Unemployment Statistics and the Regional Economic Information System. These data sources are discussed in more detail in the remainder of this section, and summary statistics for all treatment and outcome data are reported in Table 1.

3.1 Treatment Data

Our regressors of interest are time-varying measures of access to abortion and and non-abortion family planning services at the county level in Texas. We let the details of the policies we study inform how we construct these measures, and we discuss our measures of access to abortion services and non-abortion family planning services separately in each of the following sub-sections. It is somewhat simpler to construct a measure of access to abortion services for the following reason: the policies affecting abortion services primarily determined whether certain clinics could offer their services at all (i.e., the extensive margin), while policies affecting non-abortion family planning services determined not only *whether* certain clinics could offer their services, but the *extent to which* their services could be offered (i.e., extensive and intensive margins).

3.1.1 Abortion Access

Our primary measure of access to abortion services is the driving distance from each county to the nearest clinic offering abortions. To construct this measures, we require information on the location and dates of operation for all clinics offering abortions in both Texas and neighboring states. With this information in hand, we then calculate the straight-line distance between the population-weighted county centroid for each county in Texas and the geographical coordinates of each clinic using each clinic's address. For all clinics that are among the five closest in terms of straight-line distance in any time period, we then calculate the driving distance.[13] Our primary measure of access is the distance between a woman's county of residence and the nearest abortion clinic at any given time, though the results are robust to other measures which are described in the discussion of the results.

The main data source for clinic locations and dates of operation are license files provided by Texas DSHS that provide information on all abortion clinics in the state for the years 2006-2015. These data include exact license dates for each clinic (both start and expiration dates) as well as each clinic's address.[14]

Moreover, because it is central to the empirical design to know exactly when clinics were in operation, we crosscheck the DSHS data with data on abortion clinic closures from a Texas non-profit, Fund Texas Choice. The mission of Fund Texas Choice is to help pay for abortion travel-related expenses, particularly for low-income, teen, and rural Texans. As such, they have more up-to-date information on clinic closures, particulary during the roll-out of House Bill 2 in 2014. Fund Texas Choice periodically calls all clinics in Texas *and* border states to determine which clinics are providing abortions and keeps an ongoing record of clinic closures. We have

[13] Driving distance is calculated using the Stata program *Georoute* (Weber et al., 2016); note that we first calculate the straight-line distance for each of the closest five clinics to avoid using the driving distance API for thousands of coordinate pairs. In most cases, the closest clinic in terms of straight-line distance is also the closest clinic in terms of driving distance; because Texas does not have significant geographical features (e.g., large mountain ranges), the straight-line distance is a very good proxy for the driving distance. Ultimately, our results are not sensitive to the use of either straight-line distance or driving distance (except in interpretation, as driving distances are longer).

[14] We determine the exact latitude/longitude coordinates of each clinic using a geocoding service provided by Texas A and M University: http://geoservices.tamu.edu/Services/Geocode/.

appended the DSHS license data with data from Fund Texas Choice on the location and operation dates of clinics in neighboring states, and have amended the DSHS license dates using the more accurate dates of operation from Fund Texas Choice. Finally, to further mitigate coding errors in closure dates, we contacted each of the clinics that we observe as being operational in September 2016 to verify that they are still providing abortions.

3.1.2 Family Planning Access

Because the policies affecting family planning services potentially affected clinics offering these services on both the extensive and intensive margins, it is not necessarily sufficient to utilize clinic closures and define access to family planning services as the distance to the nearest provider. Our primary measure of access to family planning is the distance from each county's population weighted centroid to the nearest clinic receiving public funding for family planning services. In other words, this measure does not only measure clinic closures, but changes in family planning funding. Consider, for example, a community health clinic that was receiving Title X funds in a particular year that subsequently ceased receiving Title X funds or any other public funds earmarked for family planning. Our measure would consider this to be a funded clinic initially, but it would not be counted as a funded clinic once the funding ceased regardless of whether this clinic stayed open.

Our data on family planning clinic funding are derived from two sources. The first source is data from DSHS that indicates in each year 2006-2015 the clinics in Texas that receive family planning funding through DSHS. The second source is data from WHFPT, which took over the Title X grant for the state of Texas in 2013. This data indicates in each year 2013-2015 the clinics that receive Title X funds. This second data source is necessary as the data from DSHS include only clinics that were funded through DSHS-administered programs, and Title X was administered by DSHS following the grantee change in 2013. With these two data sources in hand, we compile a list of clinics receiving public funds for each year 2006-2015 with information on each clinic's address. Our method of calculating the distance from each county's population-weighted centroid

to the nearest clinic mimics the process used for calculating distance to abortion clinics.

3.2 Outcome Data

3.2.1 Abortion Data

We obtain data on all legal abortions performed in the state of Texas by age and county of patient's residence for the years 2006-2014 from Texas DSHS. This data allows us to test whether changes in access to abortion or family planning services has led to changes in abortion services received *within Texas*; this data does not allow us test for a total net change in abortion services received if women travel out of state. Data on within-Texas abortion rates (per 1,000 women in the corresponding age group) are described in Table 1.

To better understand travel behavior, we also collect abortion counts for this same time period for each of the states that border Texas – Louisiana, Arkansas, New Mexico and Oklahoma – from each state's health department. Abortion counts from these states are disaggregated into two groups: abortions provided to residents of that state and abortions provided to non-residents.

Figure 3 plots abortion rates in Texas (per 1,000 women age 15-44) and the proportion of abortions to non-residents in each neighboring state over our sample period. This plot shows that within-Texas abortion rates in Texas are declining over the sample period, with a particularly steep decline in 2014. In certain states (New Mexico and Arkansas in particular), there exists a substantial increase in the proportion of non-residents receiving abortions; this increase coincides with abortion clinic closures in Texas and we interpret this as clear evidence of women traveling out of Texas to receive an abortion.[15]

3.2.2 Natality Data

Natality data are derived from the restricted version of the National Vital Statistics System (NVSS) natality files. These files contain information on all U.S. births with information on the county of

[15]Note that we do not include Louisiana in this descriptive exercise because in 2012-2015 they changed the way in which they reported abortion and do not provide information on abortions provided to non-residents.

mother's residence, the year and month of birth, mother characteristics (e.g., age, education, race, marital status, and parity), child characteristics (e.g., child gender), mother's prenatal behaviors (e.g., number of prenatal visits and smoking during pregnancy), pregnancy and birth outcomes (e.g., birth weight and gestational length) and more.

We utilize data on all births of mothers residing in Texas that occurred between 2006-2015 (3,663,482 births). Because we are interested in reproductive decision-making, we match this information with our data on clinic access at the time of conception rather than at the time of birth. The data contain information on the number of weeks in gestation, and this allows us to identify the approximate month of conception by subtracting from the observed month of birth the rounded number of months in gestation. Although we have data on births in all months of 2015, we only have data on conceptions resulting in birth through February of 2015 (as nearly all births take place within 10 months of conception). Our primary measure of interest is the number of births conceived in a given year and month, by women residing in a given county, per 1,000 women of childbearing age (age 15-44). Note that while this measure is effectively the rate of conceptions resulting in birth, we refer to this measure throughout the paper as simply the "birth rate" for ease of notation. We also construct age-specific birth rates for five-year age categories (using both age-specific births and age-specific population estimates). Summary statistics for this data are provided in Table 1.

We utilize other features of this data as well – in particular, we use data on the characteristics of mothers to determine the extent to which decreased access to abortion and family planning services has resulted in a change in the composition of mothers by analyzing the share of births by race (white non-Hispanic, black non-Hispanic, Hispanic), education (high school or less, some college or more), marital status, and parity.

3.2.3 Purchasing Behavior

Our data on purchasing behavior are derived from the Nielsen Retail Scanner database for the years 2006-2014. This large database covers more than 35,000 grocery, drug and mass merchandise

retailers across the U.S. and accounts for more than half of the total sale volume in grocery and drug outlets and approximately one third of sales volume for mass merchandise outlets. This data provides weekly sales volume and prices for nearly every item sold in participating outlets.[16]

There are approximately 2.4 million items included in the data (items are identified by their UPC code). We focus on two sets of items in particular: traditional over-the-counter contraceptives (i.e., condoms) and emergency contraceptives (i.e., Plan B). Nielsen groups items into approximately 1,100 categories, including two categories for contraceptives: "Male Contraceptives" and "Female Contraceptives". The vast majority of products and purchases represented by the "Male Contraceptives" category refer to traditional contraceptives such as condoms, and we use purchases of all products in this category as one of our outcomes of interest.[17] Products in the "Female Contraceptives" category represent a wider range of products including female condoms, ovulation tests and emergency contraceptives. Our interest lies in emergency contraceptives; because emergency contraceptives are not separately categorized by Nielsen, we have collected information on all UPC codes related to emergency contraceptives so that we can separately analyze these purchases. In summary, we analyze purchases in two product groups: male contraceptives and emergency contraceptives.

Our sample consists of 2,646 stores in Texas that were operating between 2006-2014; while this is the total number of stores we observe, the variation we exploit depends on the number of stores that sell the particular products of interest: 2,625 stores had positive sales for male contraceptives in at least one period and 1,245 stores had positive sales for emergency contraceptives in at least one period. We construct total sales volume and expenditures (using volume and prices) for each product group, in each store at the monthly level. The finest geographical identifier for each store is the county, and we are thus able to merge this store-level data with our measures of access to abortion and family planning services at the county level.

[16] Exceptions include prescription drugs, for instance.

[17] Indeed, to the best of our knowledge, all products in the "Male Contraceptives" category are condoms. Note that in the final year of the sample, there were 1,013 such products in this category.

4 Empirical Framework

In our main specification, we exploit quasi-experimental variation in access to family planning clinics and abortion clinics across counties and over time in Texas to identify the causal relationship between clinic access and the number of abortions, the number of births, and contraceptive purchasing behavior.[18] Consider the following difference-in-difference framework:

$$Y_{ct} = \beta_0 + \beta_1 DistAC_{ct} + \beta_2 DistFP_{ct} + \beta_3 X_{ct} + \gamma_c + \alpha_t + \varepsilon_{ct} \quad (1)$$

Y_{ct} is the outcome in a given county c and time t. In the analysis of abortions, t represents years as the data is at the county-year level; in the analysis of births, t represents year-months as the analysis is at the county-year-month level. In the primary analysis of abortions and births, we examine the number of abortions and births – rather than an abortion rate or birth rate – in a fixed-effects Poisson framework. This is due to the fact that in many small counties, there are very few or zero births in a given period. To account for the fact that counties vary widely in size, we use the population of women of childbearing age as an exposure variable in these regressions. In alternative specifications, we estimate these regressions using ordinary least squares in which the outcome is defined as the abortion rate or birth rate and we find similar estimates. *DistAC* is the main treatment and is represents the driving distance in miles to the nearest abortion clinic in a county-year-month. Similarly, $DistFP$ is driving distance in miles to the nearest family planning clinic receiving public funds. As discussed in the previous section, the measure of access to family planning does not necessarily measure clinic closures, but changes in clinic funding. We view this as a preferable measure as the funding cuts to family planning clinics affected the ability of many clinics to provide family planning services, while not resulting in clinic closure. X_{ct} represents the unemployment rate and log per capita income.[19] γ_c and α_t are county and period fixed effects,

[18] A similar identification strategy is used in the literature that documents the effect of distance or proximity to health care providers on individual outcomes, i.e. Goodman et al. (1997); Buchmueller et al. (2006); Rossin-Slater (2013).

[19] Data on unemployment and per capita income is available only at the county-year level; we interpolate this measure across months within a year to avoid large jumps at the end of each year in the analyses using monthly data

respectively[20]. ε_{ct} is the error term and is clustered at the county level.

Our analysis of contraceptive purchasing behavior uses data at the store level and is described by the following equation:

$$IHS(Y_{sct}) = \beta_0 + \beta_1 DistAC_{ct} + \beta_2 DistFP_{ct} + \beta_3 X_{ct} + \gamma_s + \alpha_t + \varepsilon_{sct} \quad (2)$$

$IHS(Y_{sct})$ is the inverse hyperbolic sine of expenditures on a particular set of products at store s, in county c, in month-year t. The interpretation of the inverse hyperbolic sine is equivalent to that of a natural logarithm except that it allows for zeroes in the outcome. The outcomes of interest in this analysis are expenditures on male contraceptives and Plan B. Conceptually, this estimating equation is the same as Equation 1 as the treatment variables are still measured at the county level. Because the stores included in the Nielsen sample do not represent the universe of contraceptive purchases, and because the sample of stores is not representative at the county level, it would be inappropriate to aggregate these measures to the county level. Keeping the unit of analysis at the store-level allows for the inclusion of store fixed effects such that the estimates are identified off of deviations from store-level averages.

Identifying Assumption: The identifying assumption for estimating Equation 1 is that the variation in clinic access (family planning or abortion) is uncorrelated with other unobserved time-varying determinants of birth rates, abortion rates, and contraceptive purchases. Put differently, the identifying assumption states that in the absence of the changes in access to family planning and abortion services, the outcomes would have continued on a similar trajectory both in the treatment and control counties. The inclusion of county and year fixed effects controls for all time-invariant county-level variables and overall time trends that might affect the outcomes. In addition, we control for the unemployment rate and log per capita income to reduce concerns that county level time-varying unobserved characteristics that also explain birth or abortion rates are correlated with our measures of access.

[20]We use year fixed effects in the analyses using annual data and year-month fixed effects in the analyses using monthly data

While the identifying assumption is not directly testable, there is evidence supporting its plausibility. The changes in access that we exploit occur as a result of legislation imposed at the state level. As such, the legislation caused isolated and unanticipated shocks to the supply of clinics. Importantly, the clinics that ended up being most affected did not select into treatment and were not affected as a result of market factors. One potential issue for the empirical design, however, is if when the state government enacts a state-wide budget cut to family planning clinics or rules in favor of more stringent abortion clinic rules of operation, they also impose other policies that change abortion rates and birth rates in these same counties. We have found no evidence of such a concern.[21]

5 Results

5.1 Outcome: Abortions

Because in our setting, shocks to the supply of abortion clinics and family planning clinics occur at different times and because family planning clinics are not permitted to administer abortions, we can separately identify the impact of access to abortion clinics and family planning clinics. Table 2 presents estimates of the effect of clinic access on within Texas-abortion rates. Each estimate in the table comes from a separate regression. Panel A reports estimates using a linear measure of access. The first row is driving distance in miles to the nearest abortion clinic and is scaled so that the coefficients represent a 50 mile increase in driving distance; the second row is driving distance in miles to the nearest funded family planning clinic and is scaled so that coefficients represent a 25 mile increase in driving distance. We present estimates using a non-linear measure of access to abortion clinics and family planning clinics in Panels B and C. Note that the estimates for the

[21] On September 1, 2005 Texas implemented an emergency contraceptive access law which required hospitals to inform victims of sexual assault about emergency contraceptives. This date, however, is before the start of our analysis period, which is 2006-2014. Also, greater access to Plan B would only dampen our results. Additionally, on August 24, 2006 a federal law was passed granting all individuals 18 and older access to emergency contraceptives in pharmacies without prescriptions. This law was expanded to include 17-year-olds on April 22, 2009 (Guttmacher). There were federal laws, so there is no reason to believe they would differentially affect counties in Texas. In a robustness check, we exclude years prior to 2010 and find similar results.

number of abortions are derived from a fixed-effects Poisson model, and the coefficients should be interpreted as percent changes. We also provide estimates from regressions using ordinary least squares where the outcomes are defined as the inverse hyperbolic sine of abortion rates. The interpretation of the inverse hyperbolic sine is equivalent to that of a natural logarithm (both are which are comparable to the estimates from the Poisson model). The advantage of the inverse hyperbolic sine is that it allows the outcome to zero; this is potentially important given that there are many small counties in Texas. These additional estimates are presented in Table A1.

Access to Abortion Clinics

Panel A shows that increasing the distance to an abortion clinic by 50 miles reduces the number of within-Texas abortions by 10.6%, on average. Results are similar for all women who are of child-bearing age (Columns 2-6). The non-linear results presented in Panel B are inline with Panel A. If there is no abortion clinic within 25 miles, within Texas abortion rates are 16.6% lower relative to if there is a clinic within 25 miles.[22] As expected, the effect is strongest for the most extreme measure; no clinic within 100 miles is associated with nearly a 24% decrease in within Texas abortion rates. Recall that these estimates only represent the impacts of access to abortion clinics on *abortions received within Texas*. Because we do not observe mother's county of residence for abortions taking place outside of Texas, we cannot investigate whether decreased access to abortion services leads to a total net change in the number of abortions.

That being said, Figure 3 provides evidence that Texas women are traveling to nearby states to obtain abortions when access becomes restricted in Texas. Although this figure is descriptive in nature, it shows a decline in within Texas abortion rates that roughly coincide with the Texas legislation, and an increase in the share of abortions provided to non-residences in the states that border Texas. In particular, Figure 3 shows a sharp increase in the rate of abortions in New Mexico and Arkansas to out of state residents, suggesting that Texas women are traveling to these states. In summary, it appears that the reduction in within Texas abortions is at least in part offset by women

[22]Note that the average distance to a non-abortion family planning clinic is about 24 miles.

traveling to nearby states for these services.

Access to Non-Abortion Family Planning Clinics

The second row of Panel A shows that increasing distance to the nearest non-abortion family planning clinic receiving public funding is also associated with a decrease in the number of within-Texas abortions, though the effect is considerably smaller than for abortion clinic access. For all women, increasing the distance to the nearest publicly funded family planning clinic by 25 miles reduces within Texas abortions by 4.7% where the effect is predominantly driven by teens. The fact that the effect is about half the size of the abortion clinic closure effect is reassuring. Access to family planning clinics should only indirectly influence abortion behavior – e.g., through an information or referral channel – since they do not provide abortion services. Non-linear results are presented in Panel C and further highlight that reduced access to family planning clinics is entirely driven by teens who are located in the most affected regions. Among teens, when there is no clinic within 25 miles, abortions increase by about 10%.

5.2 Outcome: Births

To this point we have shown that three major pieces of politically motivated legislation greatly reduce the number of abortion clinics and publicly funded family planning clinics in Texas. Further, we show that this shock to the supply of abortion clinics is associated with a reduction in the number of in-state abortions. Does the reduction in the number of abortions in Texas translate to a similar increase in births, or are Texas women finding alternative ways to avoid unplanned births? Note that the estimates for the number of births are derived from a fixed-effects Poisson model; the coefficients should be interpreted as percent changes. We also provide estimates from regressions using ordinary least squares where the outcomes are defined as the inverse hyperbolic sine of the births rate, and these are presented in Table 3.

Access to Abortion Clinics

Table 3 is identical to Table 2, except that the outcome is the number of births rather than abortions. Panel A shows that increasing the distance between a mother's county of residence and the nearest abortion provider by 50 miles is associated with an increase in the overall number of births by approximately 0.4%, though this estimate is not statistically different from zero. The age-specific estimates reveal that the increase in births is, for the most part, concentrated among women in their 30s, where women 30-34 experience a statistically significant 1.1% increase in births and women 35-39 experience a marginally significant 0.9% increase. The non-linear results presented in Panel B show that the estimated effect increases as the treatment becomes more severe. When there is no abortion clinic present within 50 or 100 miles, birth rates for this age group increase by approximately 2.8%-4.9%, depending on the specification.

Table 4 and Table 5 investigate how changes in access to abortion clinics affect the composition of mothers. Specifically, the outcomes of interest in Table 4 are the shares of births by: race, education and marital status. The results indicate that decreased access to abortion services increases the share of white and Hispanic mothers, married mothers, and low-education mothers. The outcomes of interest in Table 5 are the number of births by parity; these results indicate that decreased access to abortion services increases the number of births to women who are having their third, fourth, or fifth (or more) child. Perhaps somewhat counterintuitive, we also find there is a reduction in the number of births to women who are having their first child.

Together, these results paint a picture of the types of mothers who change their childbearing behavior in response to decreased access to abortion services. There are several explanations for these findings. Married mothers who already have children are not necessarily "more affected" by the reduced access to abortion clinics. That is, there is no reason to believe the cost of seeking an abortion is greater for this group compared to other women. In fact, one could argue that older married women may be more likely to have the resources that would allow them to travel to bordering states to seek an abortion. However, these women may also more likely to be on the margin of the decision to seek an abortion. If individuals view having a child as costly, then

it is reasonable to argue that the marginal cost of a child is smaller for individuals who already have children. Moreover, because the marginal cost of having a first child is relatively high, it is not implausible that some women – in particular younger women – may substitute away from abortion towards precautionary measures, such as abstaining or practicing safer sex. In Section 5.3 we provide evidence that, at least some women, are substituting towards contraceptives.

Access to Non-Abortion Family Planning Clinics

The second row of Panel A in Table 3 shows that there is no statistically significant relationship between the change in access to publicly funded family planning clinics and the overall number of births. The age-specific estimates reveal substantial heterogeneity; in particular, the number of births among 25-34 year-olds increases by approximately 1.6% with a 25 mile increase in the distance to the nearest family planning clinic receiving public funding.

The non-linear results presented in Panel C reveal a similar story. One reason women 25-34 may be particulary impacted is because this group is the most likely to use long-acting reversible contraceptives (LARC). In fact, according to the National Center for Health Statistics (NCHS) women in this age group are twice as likely to use this type of contraceptive than other women of childbearing age. Because a main purpose of these publicly funded family planning clinics is to provide subsidized contraceptives (including LARC), if women in need are less able to access these services because the cost of doing so has increased, they may have a child when they otherwise would not have leading to an increase in births.

Table 4 indicates that reducing access to non-abortion family planning services increases the share of Hispanic mothers. While many of the impacts of decreased access to abortion are distinct from the impacts of decreased access to non-abortion family planning, we find that in both cases this decrease in access leads to an increase in the share of low-education mothers.

We also find, similar to the abortion clinic results, that reduced access to publicly funded family planning clinics increases the number of births to mothers who already have multiple children, as reported in Table 5. This finding is consistent with the age group we find to be affected by reduced

access to family planning (25-34), since women in this age group in Texas are more likely to already have children.

5.3 Outcome: Contraceptive Purchases

The estimates for expenditures of contraceptives purchased are derived from an ordinary least squares model where expenditures are transformed using the inverse hyperbolic sine function. As such, the coefficients should be interpreted as one would interpret a natural logarithm.

The estimates presented in Table 6 indicate that reduced access to abortion services by 50 miles leads to a 2.9% increase in purchases of traditional contraceptives (i.e., condoms). We view this as evidence of an increase in precautionary behavior – or at least an intent to adopt precautionary behavior – in response to the highly publicized reduction in access to abortion services in Texas as a result of HB2. This finding is consistent with Sabia and Anderson (2016) who show that parental involvement laws – laws that require minors to obtain parental consent before receiving an abortion – are associated with an increase in the probability that sexually active minor teen females use birth control. On the other hand, we do not find that reduced access to family planning clinics affects purchases over-the-counter contraceptive purchases.

6 Discussion and Conclusion

Lawmakers continue to pass legislation that restricts access to reproductive services. Despite this, very little is known about the broader implications of these closures. In this paper, we leverage three major pieces of politically motivated legislation within Texas, legislation that greatly reduced access to abortion services and family planning services, to shed light on the impacts of reduced clinic access on women's fertility behavior. We add to the knowledge on reproductive policies in at least three important ways. First, using modern data, we provide a comprehensive analysis of the impacts of a large and recent contraction in clinic access. Nearly all of the existing literature examines policies that expand access to services in the early seventies. Second, the empirical de-

sign mitigates concerns of selection bias because estimates are identified from plausibly exogenous shocks to the supply of clinic services. Third, because the shocks occurred at different points in time and affected clinics differently, we are able to separately identify the causal impacts of access to non-abortion and abortion family planning clinics.

In summary, our result indicate that reduced access to abortion services and non-abortion family planning services are each (separately) associated with increased births. The women whose childbearing decisions are affected by changes in access to these two types of clinics are considerably different, however. Reduced access to non-abortion family planning services is associated with increased births among teens, Hispanics and low-education women. Reduced access to abortion services is most strongly associated with increased births among white, married, low-education mothers in their 30s who are having at least their third child.

References

83rd State Legislature, Texas, "Texas HB No.2," 2013.

Ananat, Elizabeth Oltmans and Daniel M Hungerman, "The Power of the Pill for the Next Generation: Oral Contraception's Effects on Fertility, Abortion, and Maternal and Child Characteristics," *Review of Economics and Statistics*, 2012, *94* (1), 37–51.

Angrist, Joshua D and William N Evans, "Schooling and Labor Market Consequences of the 1970 State Abortion Reforms," *Research in Labor Economics*, 1999, *18*, 75–113.

Averett, Susan L, Daniel I Rees, and Laura M Argys, "The Impact of Government Policies and Neighborhood Characteristics on Teenage Sexual Activity and Contraceptive Use," *American Journal of Public Health*, 2002, *92* (11), 1773–1778.

Baicker, Katherine and Dana Goldman, "Patient Cost-Sharing and Healthcare Spending Growth," *Journal of Economic Perspectives*, 2011, *25* (2), 47–68.

Bailey, Martha J, "Reexamining the Impact of Family Planning Programs on U.S. Fertility: Evidence from the War on Poverty and the Early Years of Title X," *American Economic Journal: Applied Economics*, 2012, *4* (2), 62–97.

_ , "Fifty Years of Family Planning: New Evidence on the Long-Run Effects of Increasing Access to Contraception," *Brookings Papers on Economic Activity, Economic Studies Program, The Brookings Institute*, 2013, *46* (1), 341–409.

Blake, Aaron, "Perry Signs Texas Abortion Bill into Law - The Washington Post," 2013.

Buchmueller, Thomas C, Mireille Jacobson, and Cheryl Wold, "How Far to the Hospital?: The Effect of Hospital Closures on Access to Care," *Journal of Health Economics*, 2006, *25* (4), 740–761.

Choice, Fund Texas, "What is HB2?," 2014.

Colman, Silvie and Ted Joyce, "Regulating Abortion: Impact on Patients and Providers in Texas," *Journal of Policy Analysis and Management*, 2011, *30* (4), 775–797.

_ **, Thomas S Dee, and Ted Joyce**, "Do Parental Involvement Laws Deter Risky Teen Sex?," *Journal of Health Economics*, 2013, *32* (5), 873–880.

Cozzarelli, Catherine and Brenda Major, "The Effects of Anti-Abortion Demonstrators and Pro-Choice Escorts on Women's Psychological Responses to Abortion," *Journal of Social and Clinical Psychology*, 1994, *13* (4), 404.

Doan, Alesha, *Opposition and Intimidation: The Abortion Wars and Strategies of Political Harassment*, University of Michigan Press, 2009.

Donohue, John and Steven Levitt, "The Impact of Legalized Abortion on Crime," *Quarterly Journal of Economics*, 2001, *116* (2), 379–420.

Frost, JJ, L Frohwirth, and MR Zolna, "Contraceptive Needs and Services, 2014 Update," *New York: Guttmacher Institute*, 2016.

Gerdts, Caitlin, Liza Fuentes, Daniel Grossman, Kari White, Brianna Keefe-Oates, Sarah E Baum, Kristine Hopkins, Chandler W Stolp, and Joseph E Potter, "Impact of Clinic Closures on Women Obtaining Abortion Services After Implementation of a Restrictive Law in Texas," *American Journal of Public Health*, 2016, *106* (5), 857.

Goldin, Claudia and Lawrence F Katz, "The power of The Pill: Oral Contraceptives and Women's Career and Marriage Decisions," Technical Report 4 2002.

Goodman, David C, Elliott Fisher, Therese A Stukel, and Chiang hua Chang, "The Distance to Community Medical Care and the Likelihood of Hospitalization: Is Closer Always Better?," *American Journal of Public Health*, 1997, *87* (7), 1144–1150.

Gross, Tal, Jeanne Lafortune, and Corinne Low, "What Happens the Morning After? The Costs and Benefits of Expanding Access to Emergency Contraception," *Journal of Policy Analysis and Management*, 2014, *33* (1), 70–93.

Grossman, Daniel, Sarah Baum, Liza Fuentes, Kari White, Kristine Hopkins, Amanda Stevenson, and Joseph E Potter, "Change in Abortion Services After Implementation of a Restrictive Law in Texas," *Contraception*, 2014, *90* (5), 496–501.

Gruber, Jonathan, Phillip Levine, and Douglas Staiger, "Abortion Legalization and Child Living Circumstances: Who is the Marginal Child?," Technical Report 4 1999.

Guldi, Melanie, "Fertility Effects of Abortion and Birth Control Pill Access for Minors," *Demography*, 2008, *45* (4), 817–827.

Hicks-Courant, Katherine and Aaron L Schwartz, "Local Access to Family Planning Services and Female High School Dropout Rates," *Obstetrics & Gynecology*, 2016, *127* (4), 699–705.

Hoffman, Saul D and Rebecca A Maynard, *Kids Having Kids: Economic Costs & Social Consequences of Teen Pregnancy*, The Urban Insitute, 2008.

Jacobson, Mireille and Heather Royer, "Aftershocks: The Impact of Clinic Violence on Abortion Services," *American Economic Journal: Applied Economics*, 2011, *3* (1), 189–223.

Jerman, Jenna, Rachel K Jones, and Tsuyoshi Onda, "Characteristics of US Abortion Patients in 2014 and Changes Since 2008," 2016.

Jones, Rachel K, Lawrence B Finer, and Susheela Singh, "Characteristics of US abortion patients, 2008," *New York: Guttmacher Institute*, 2010, pp. 20101–8.

Joyce, Ted, Ruoding Tan, and Yuxiu Zhang, "Abortion Before & After Roe," *Journal of Health Economics*, 2013, *32* (5), 804–815.

Kearney, Melissa S and Phillip B Levine, "Subsidized Contraception, Fertility, and Sexual Behavior," *The Review of Economics and Statistics*, 2009, *91* (1), 137–151.

Klick, Jonathan, Sven Neelsen, and Thomas Stratmann, "The Relationship Between Abortion Liberalization and Sexual Behavior: International Evidence," *American Law and Economics Review*, 2012, *14* (2), 457–487.

Lahey, Joanna N, "The Effect of Anti-Abortion Legislation on Nineteenth Century Fertility," *Demography*, 2014, *51* (3), 939–948.

Lang, Kevin and Russell Weinstein, "The Consequences of Teenage Childbearing before Roe v. Wade," *American Economic Journal: Applied Economics*, 2015, *7* (4), 169–197.

Levine, Phillip B, "The Sexual Activity and Birth-Control Use of American Teenagers," in "Risky Behavior Among Youths: An Economic Analysis," University of Chicago Press, 2001, pp. 167–218.

_ , "Parental Involvement Laws and Fertility Behavior," *Journal of Health Economics*, 2003, *22* (5), 861–878.

_ , *Sex and Consequences: Abortion, Public Policy, and the Economics of Fertility*, Princeton University Press, 2004.

_ **, Douglas Staiger, Thomas J Kane, and David J Zimmerman**, "Roe v. Wade and American Fertility," *American Journal of Public Health*, 1999, *89* (2), 199–203.

Lindell, Chuck, "Since New Law, One-Third of Texas Abortion Clinics Close," 2016.

Lu, Yao and David Slusky, "The Impact of Women's Health Clinic Closures On Preventive Care," 2016.

Manning, Willard G, Joseph P Newhouse, Naihua Duan, Emmett B Keeler, and Arleen Leibowitz, "Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment," *American Economic Review*, 1987, pp. 251–277.

Mosher, William D, Jo Jones, Joyce C Abma et al., "Intended and Unintended Births in the United States: 1982-2010," 2012.

Myers, Caitlin Knowles, "Young Women's Access to Abortion and Contraception, 1960-Present," 2016.

_ , "The Power of Abortion Policy? Re-Examining the Effects of Young Women's Access to Reproductive Control," Forthcoming.

Packham, Analisa, "Family Planning Funding Cuts and Teen Childbearing," 2016.

Pop-Eleches, Cristian, "The Impact of an Abortion Ban on Socioeconomic Outcomes of Children: Evidence from Romania," *Journal of Political Economy*, 2006, *114* (4), 744–773.

Project, Texas Policy Evulation, "2011 Texas Legislation Lead to Family Planning Clinic Closures, Reduced Services, and Uncertain Future," 2014.

Ringel, Jeanne S, Susan D Hosek, Ben A Vollaard, and Sergej Mahnovski, "The Elasticity of Demand for Health Care. A Review of the Literature and its Application to the Military Health System," Technical Report, RAND Corporation 2002.

Rossin-Slater, Maya, "WIC in Your Neighborhood: New Evidence on the Impacts of Geographic Access to Clinics," *Journal of Public Economics*, 2013, *102*, 51–69.

Sabia, Joseph J and D Mark Anderson, "The effect of parental involvement laws on teen birth control use," *Journal of health economics*, 2016, *45*, 55–62.

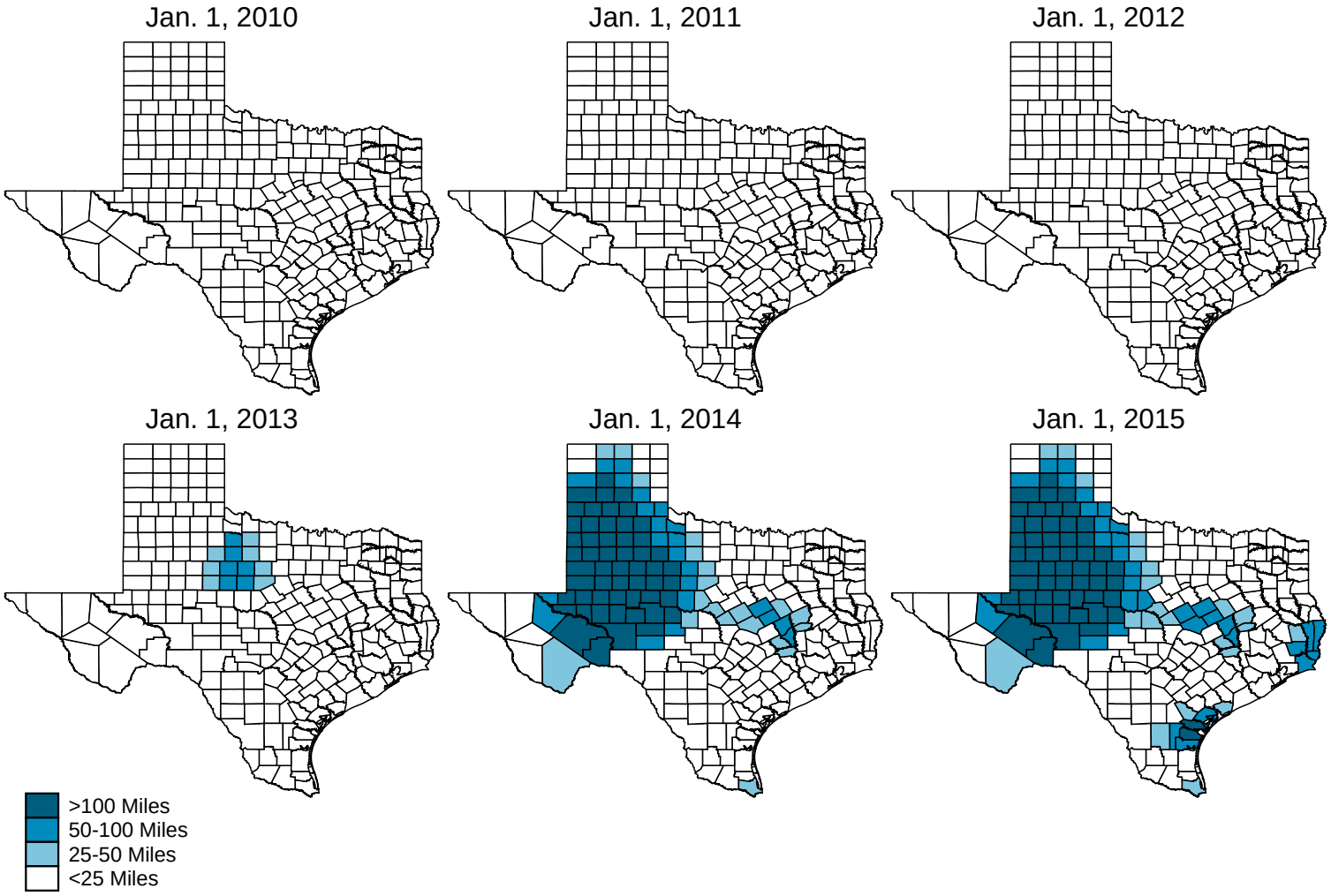
Statesman, "Timeline: From House Bill 2 to Texas Abortion Law," 2016.

Stevenson, Amanda J, Imelda M Flores-Vazquez, Richard L Allgeyer, Pete Schenkkan, and Joseph E Potter, "Effect of Removal of Planned Parenthood from the Texas Women's Health Program," *New England Journal of Medicine*, 2016, *374* (9), 853–860.

Weber, Sylvain, Martin Péclat et al., "GEOROUTE: Stata module to calculate travel distance and travel time between two addresses or two geographical points," *Statistical Software Components*, 2016.

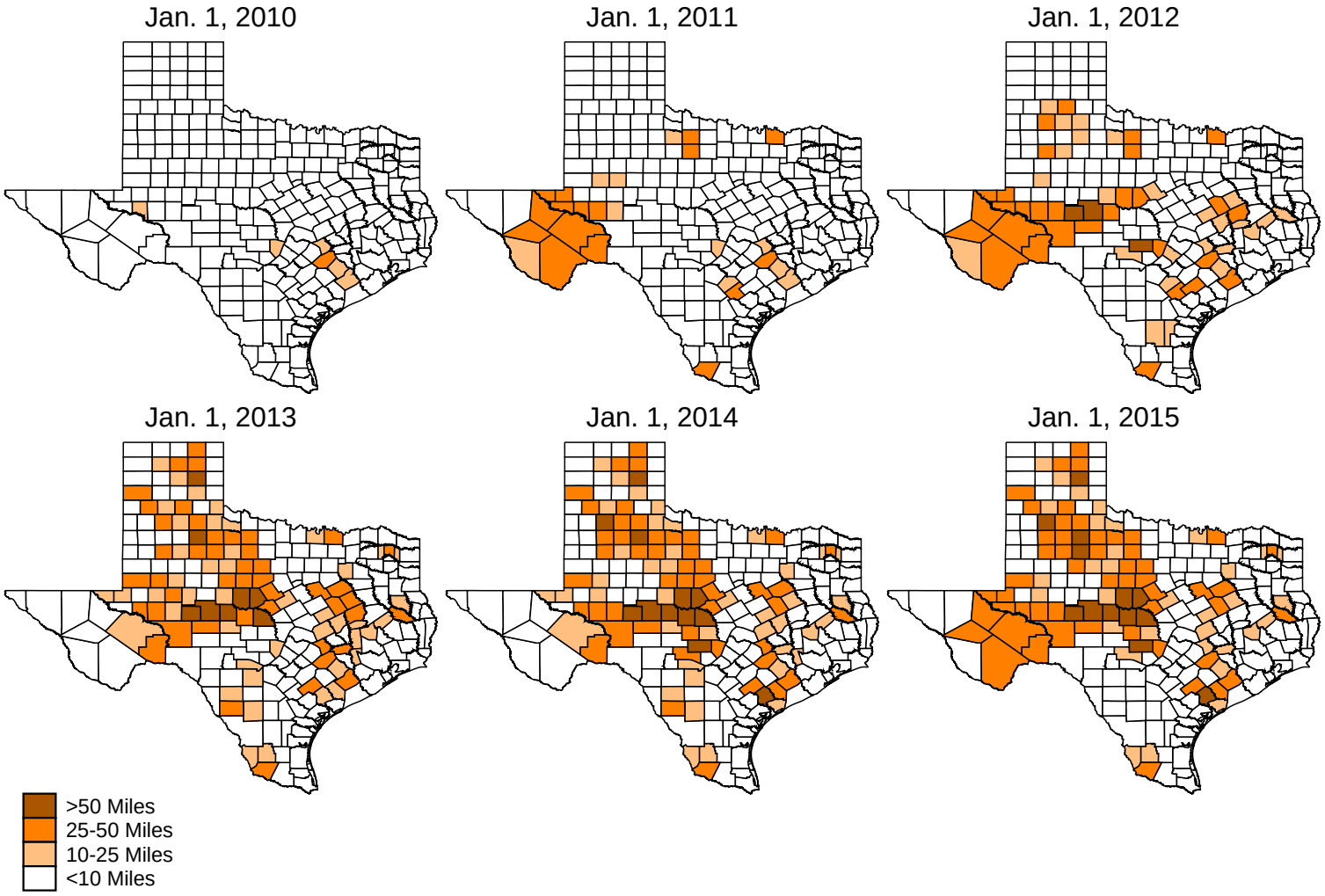
White, Kari, Kristine Hopkins, Abigail RA Aiken, Amanda Stevenson, Celia Hubert, Daniel Grossman, and Joseph E Potter, "The Impact of Reproductive Health Legislation on Family Planning Clinic Services in Texas," *American Journal of Public Health*, 2015, *105* (5), 851–858.

Figure 1: Change in Access to Abortion Clinics



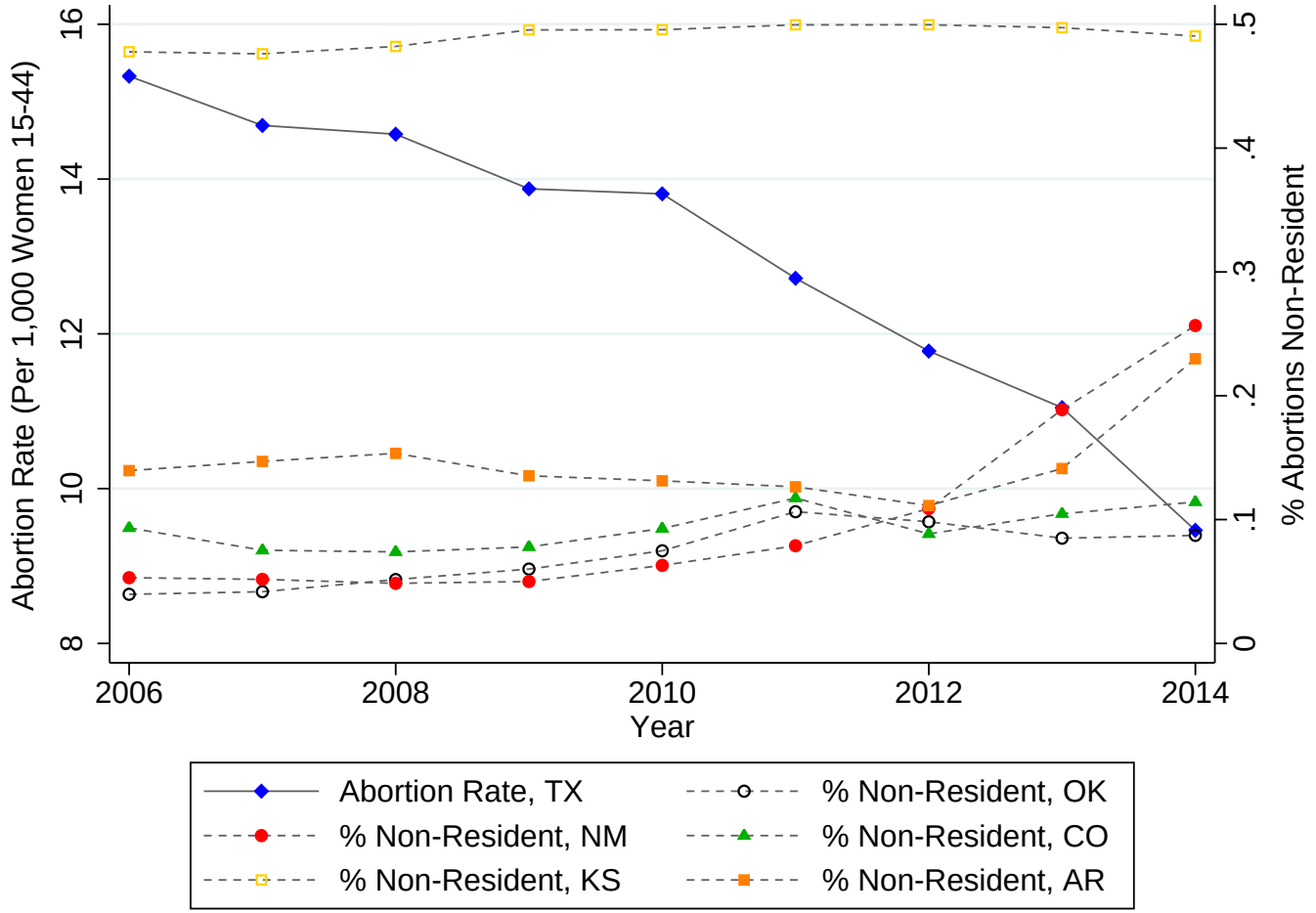
Note: Change in access is defined as the change in distance between the date in question and January 1, 2009. Distances are measured as kilometers from each county's centroid to the nearest clinic that provides abortion services.

Figure 2: Change in Access to Publicly Funded Family Planning Clinics



Note: Change in access is defined as the change in distance between the date in question and January 1, 2009. Distances are measured as kilometers from each county's centroid to the nearest *funded* clinic that provides family planning services.

Figure 3: Out of State Abortion Rates by State



Note: The data come from each state's Department of Health. Abortion rates in Texas are constructed as rates per 1,000 women aged 15-44.

Table 1: Summary Statistics - Aggregated Annually

	Mean	Std. Dev.
Panel A: Abortion Data		
Abortion rate (all age)	13.0	(6.24)
Abortion rate 15-19	9.01	(4.75)
Abortion rate 20-24	25.9	(13.6)
Abortion rate 25-29	19.6	(9.54)
Abortion rate 30-34	12.3	(6.04)
Abortion rate 35-39	7.23	(3.63)
Panel B: Natality Data		
Birth rate (all age)	66.7	(21.3)
Birth rate 15-19	44.1	(21.7)
Birth rate 20-24	105.0	(44.9)
Birth rate 25-29	109.4	(35.5)
Birth rate 30-34	88.3	(27.7)
Birth rate 35-39	41.6	(14.6)
Mothers Non-Hispanic White (%)	0.36	(0.2)
Mothers Hispanic (%)	0.45	(0.21)
Mothers Black (%)	0.13	(0.09)
Mothers Some College or more (%)	0.50	(0.12)
Mothers Married (%)	0.59	(0.08)
Panel C: Nielsen Data (store level)		
Male contraceptive expenditures ($)	4,506	(6,599)
Plan B expenditures ($)	5,800	(12,244)
Panel D: Treatments		
Driving dist. nearest abortion clinic (mi)	23.7	(40.2)
Driving dist. nearest funded FP clinic (mi)	7.3	(11.1)

Notes: There are 2,286 observations, except for the birth composition variables which only have 2,274 observations due to missing data. Less than half a percent are missing. Data include all counties in Texas for the years 2006 through 2015. Abortion rates and birth rates are calculated as per 1,000 in the relevant age group (the relevant age group for the all-age rates is 15-44). All county-level means are weighted by population; the store-level means for the Nielsen data are unweighted.

Table 2: Access to Abortion & Family Planning Clinics on Number of Abortions (Poisson)

	All	15-19	20-24	25-29	30-34	35-39
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Linear Distance						
Abortion Distance 50mi	-0.106***	-0.095***	-0.118***	-0.091***	-0.092***	-0.115***
	(0.022)	(0.025)	(0.019)	(0.025)	(0.032)	(0.027)
Family Planning Distance 25mi	-0.047**	-0.080**	-0.035	-0.033	-0.028	-0.022
	(0.023)	(0.033)	(0.029)	(0.023)	(0.034)	(0.040)
Panel B: Abortion Clinic Non-linear						
No Clinics 25 mi	-0.166**	-0.167**	-0.173***	-0.159**	-0.180**	-0.137
37% of Pop. in 2015	(0.065)	(0.076)	(0.064)	(0.066)	(0.079)	(0.096)
No Clinics 50 mi	-0.139***	-0.160**	-0.148**	-0.116**	-0.145*	-0.078
24% of Pop. in 2015	(0.053)	(0.064)	(0.060)	(0.050)	(0.076)	(0.064)
No Clinics 100 mi	-0.235***	-0.081	-0.298***	-0.238***	-0.252***	-0.325***
12% of Pop. in 2015	(0.065)	(0.078)	(0.082)	(0.089)	(0.080)	(0.089)
Panel C: Family Planning Non-linear						
No Clinics 10 mi	0.022	-0.001	0.028	0.035	0.014	0.019
21% of Pop. in 2015	(0.025)	(0.045)	(0.031)	(0.033)	(0.037)	(0.035)
No Clinics 25 mi	-0.028	-0.101*	0.011	-0.052	0.001	0.049
11% of Pop. in 2015	(0.033)	(0.053)	(0.043)	(0.036)	(0.045)	(0.060)
Observations	2,286	2,250	2,268	2,277	2,259	2,205

Notes: The analysis is at the county-year level. In Panel A, each column is a separate regression and the measures of access enter linearly as the distance to the nearest abortion or family planning clinic; these measures are scaled so that the abortion access measure represents a 50 mile increase in distance to the nearest clinic and the family planning access measure represents a 25 mile increase in distance. In Panels B and C, each column *and* row represents a separate regression and the measures of access enter as dummies indicating that there is no clinic within the relevant distance range. "*% of Pop. in 2015*" indicates the percentage of the population of women 15-44 living in counties with no abortion clinic or funded family planning clinic within the relevant distance in 2015. Controls include county-year unemployment rate, log per capita income, county and year fixed effects. We control for family planning and abortion clinics in all regressions (e.g., a linear measure of access to family planning is included as a control in the non-linear abortion access regressions). Sample sizes vary because counties with zero abortions in a given group in all periods are dropped from the regression. Standard errors are reported in parentheses and are clustered at the county level. *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Access to Abortion & Family Planning Clinics on Number of Births (Poisson)

	All	15-19	20-24	25-29	30-34	35-39
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Linear						
Abortion Distance 50 mi	0.004	-0.000	0.009**	0.003	0.011**	0.009*
	(0.003)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)
Family Planning Distance 25 mi	0.002	0.008	-0.012	0.017**	0.016*	-0.001
	(0.005)	(0.009)	(0.009)	(0.007)	(0.009)	(0.016)
Panel B: Abortion Clinic Non-linear						
No Clinics 25 mi	0.017	0.030*	0.050***	0.025**	0.025	0.000
37% of Pop. in 2015	(0.012)	(0.017)	(0.016)	(0.012)	(0.018)	(0.021)
No Clinics 50 mi	0.029***	0.027	0.045***	0.025*	0.049***	0.045***
24% of Pop. in 2015	(0.010)	(0.019)	(0.016)	(0.013)	(0.017)	(0.015)
No Clinics 100 mi	0.011	-0.014	0.022	0.016	0.041**	0.028
12% of Pop. in 2015	(0.012)	(0.018)	(0.014)	(0.015)	(0.019)	(0.019)
Panel C: Family Planning Non-linear						
No Clinics 10 mi	-0.002	-0.003	-0.032	0.009	0.022***	-0.016
21% of Pop. in 2015	(0.009)	(0.015)	(0.020)	(0.011)	(0.008)	(0.021)
No Clinics 25 mi	0.019**	0.035**	-0.000	0.029**	0.031*	0.047**
11% of Pop. in 2015	(0.008)	(0.014)	(0.013)	(0.012)	(0.017)	(0.022)
Observations	27,830	27,830	27,830	27,830	27,830	27,830

Notes: The analysis is at the county-year-month level. In Panel A, each column is a separate regression and the measures of access enter linearly as the distance to the nearest abortion or family planning clinic; these measures are scaled so that the abortion access measure represents a 50 mile increase in distance to the nearest clinic and the family planning access measure represents a 25 mile increase in distance. In Panels B and C, each column *and* row represents a separate regression and the measures of access enter as dummies indicating that there is no clinic within the relevant distance range. "*% of Pop. in 2015*" indicates the percentage of the population of women 15-44 living in counties with no abortion clinic or funded family planning clinic within the relevant distance in 2015. Controls include county-year-month unemployment rate, log per capita income, county and year fixed effects. Unemployment and per-capita income are only available at the county-year level, but we interpolate these measures over months to avoid large jumps at the start of a year. We control for family planning and abortion clinics in all regressions (e.g., a linear measure of access to family planning is included as a control in the non-linear abortion access regressions). Standard errors are reported in parentheses and are clustered at the county level. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Access to Abortion & Family Planning Clinics on Composition of Mothers (OLS)

	% White	% Hispanic	% Black	% Some college or more	% Married
	(1)	(2)	(3)	(4)	(5)
Abortion Clinic Distance 50 mi	-0.000	0.002*	-0.001***	-0.003***	0.003***
	(0.002)	(0.001)	(0.000)	(0.001)	(0.001)
Family Planning Distance 25 mi	-0.002	0.005*	-0.003***	-0.008**	0.001
	(0.003)	(0.003)	(0.001)	(0.004)	(0.003)
Observations	26,816	26,816	26,816	26,813	26,817
Mean Dep. Var.	0.37	0.45	0.12	0.49	0.58

Notes: The analysis is at the county-year-month level. The outcomes represent the share of mothers in each category. Each column is a separate regression and the measures of access enter linearly as the distance to the nearest abortion or family planning clinic; these measures are scaled so that the abortion access measure represents a 50 mile increase in distance to the nearest clinic and the family planning access measure represents a 25 mile increase in distance. Controls include county-year-month unemployment rate, log per capita income, county and year fixed effects. Unemployment and per-capita income are only available at the county-year level, but we interpolate these measures over months to avoid large jumps at the start of a year. Sample sizes are smaller than the birth regressions because the county-year-month averages cannot be constructed for county-year-months with zero births; sample sizes vary because of a small number of missing observations in county-year-months with very few births. Standard errors are reported in parentheses and are clustered at the county level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 5: Access to Abortion & Family Planning Clinics on Number of Births by Parity (Poisson)

	First-Born	Second	Third	Fourth	Fifth or More
	(1)	(2)	(3)	(4)	(5)
Abortion Clinic Distance 50 mi	-0.020***	0.007	0.015**	0.026***	0.032***
	(0.007)	(0.006)	(0.006)	(0.006)	(0.009)
Family Planning Distance 25 mi	-0.012	-0.012	0.015	0.030***	0.038**
	(0.008)	(0.009)	(0.010)	(0.011)	(0.016)
Observations	27,830	27,830	27,830	27,720	27,720

Notes: The analysis is at the county-year-month level. The outcomes represent the share of children born by parity. Each column is a separate regression and the measures of access enter linearly as the distance to the nearest abortion or family planning clinic; these measures are scaled so that the abortion access measure represents a 50 mile increase in distance to the nearest clinic and the family planning access measure represents a 25 mile increase in distance. Controls include county-year-month unemployment rate, log per capita income, county and year fixed effects. Unemployment and per-capita income are only available at the county-year level, but we interpolate these measures over months to avoid large jumps at the start of a year. Sample sizes vary because counties with zero births in a given groups in all periods are dropped from the regression. Standard errors are reported in parentheses and are clustered at the county level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 6: Access to Abortion & Family Planning Clinics on Purchasing Behavior (IHS expenditures)

	Male Contraceptives (1)	Plan B (2)
Abortion Distance 50 mi	0.029***	-0.047
	(0.008)	(0.048)
Family Planning Distance 25 mi	0.010	0.004
	(0.022)	(0.092)
Observations	162,321	81,865

Notes: The analysis is at the store-month-year level. Each column is a separate regression and the measures of access enter linearly as the distance to the nearest abortion or family planning clinic; these measures are scaled so that the abortion access measure represents a 50 mile increase in distance to the nearest clinic and the family planning access measure represents a 25 mile increase in distance.While the treatment is at the county-level, the stores in the Nielsen sample are a non-representative sample of stores and as such it would be inappropriate to aggregate these stores to the county level. Store fixed effects are included in each regression. The sample is limited to post-2009. Plan B became available over-the-counter in mid-2006; we limit the sample to post-2009 to allow for this product to be phased in. For each product, the sample is limited to stores that report positive expenditures of the product in any period (explaining the difference in sample size). Controls include county-year-month unemployment rate, log per capita income, store and year fixed effects. Unemployment and per-capita income are only available at the county-year level, but we interpolate these measures over months to avoid large jumps at the start of a year. Standard errors are reported in parentheses and are clustered at the county level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Appendix

Table A1: Access to Abortion & Family Planning Clinics on Abortion Rates (IHS)

	All	15-19	20-24	25-29	30-34	35-39
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Linear Distance						
Abortion Distance 50 mi	-0.116***	-0.087***	-0.128***	-0.116***	-0.118***	-0.109***
	(0.025)	(0.024)	(0.024)	(0.030)	(0.031)	(0.023)
Family Planning Distance 25 mi	-0.026	-0.088**	-0.066**	-0.011	-0.014	0.019
	(0.020)	(0.034)	(0.033)	(0.031)	(0.033)	(0.039)
Panel B: Abortion Clinic Non-linear						
No Clinics 25 mi	-0.160**	-0.138	-0.151*	-0.159*	-0.192**	-0.149
	(0.081)	(0.097)	(0.083)	(0.084)	(0.075)	(0.097)
No Clinics 50 mi	-0.115*	-0.110	-0.127*	-0.098	-0.185**	-0.092
	(0.062)	(0.075)	(0.067)	(0.061)	(0.074)	(0.062)
Panel C: Family Planning Non-linear						
No Clinics 10 mi	0.018	-0.059	-0.031	0.052	0.028	0.048
	(0.027)	(0.045)	(0.039)	(0.043)	(0.042)	(0.044)
No Clinics 25 mi	-0.010	-0.107*	-0.031	-0.025	0.022	0.090
	(0.036)	(0.056)	(0.051)	(0.049)	(0.054)	(0.058)
Observations	2,277	2,277	2,277	2,277	2,277	2,277

Notes: The analysis is at the county-year level. In Panel A, each column is a separate regression and the measures of access enter linearly as the distance to the nearest abortion or family planning clinic; these measures are scaled so that the abortion access measure represents a 50 mile increase in distance to the nearest clinic and the family planning access measure represents a 25 mile increase in distance. In Panels B and C, each column *and* row represents a separate regression and the measures of access enter as dummies indicating that there is no clinic within the relevant distance range. Controls include county-year unemployment rate, log per capita income, county and year fixed effects. We control for family planning and abortion clinics in all regressions (e.g., a linear measure of access to family planning is included as a control in the non-linear abortion access regressions). Standard errors are reported in parentheses and are clustered at the county level. *** p<0.01, ** p<0.05, * p<0.1.

Table A2: Access to Abortion & Family Planning Clinics on Birth Rates (IHS)

	All	15-19	20-24	25-29	30-34	35-39
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Linear						
Abortion Distance 50 mi	0.003	0.000	0.007	0.004	0.012**	0.009*
	(0.003)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Family Planning Distance 25 mi	0.000	0.007	-0.019	0.020**	0.018**	-0.001
	(0.005)	(0.009)	(0.013)	(0.008)	(0.009)	(0.014)
Panel B: Abortion Clinic Non-linear						
No Clinics 25 mi	0.018	0.033*	0.044***	0.027*	0.024	0.008
	(0.011)	(0.017)	(0.015)	(0.014)	(0.018)	(0.018)
No Clinics 50 mi	0.028***	0.033*	0.036**	0.028*	0.052***	0.046***
	(0.010)	(0.019)	(0.016)	(0.015)	(0.018)	(0.014)
Panel C: Family Planning Non-linear						
No Clinics 10 mi	-0.004	0.006	-0.046*	0.006	0.021**	-0.009
	(0.009)	(0.012)	(0.024)	(0.012)	(0.009)	(0.021)
No Clinics 25 mi	0.018**	0.031**	-0.011	0.032**	0.031*	0.038*
	(0.008)	(0.016)	(0.016)	(0.014)	(0.017)	(0.021)
Observations	27,830	27,830	27,830	27,830	27,830	27,830

Notes: The analysis is at the county-year-month level. In Panel A, each column is a separate regression and the measures of access enter linearly as the distance to the nearest abortion or family planning clinic; these measures are scaled so that the abortion access measure represents a 50 mile increase in distance to the nearest clinic and the family planning access measure represents a 25 mile increase in distance. In Panels B and C, each column *and* row represents a separate regression and the measures of access enter as dummies indicating that there is no clinic within the relevant distance range. Controls include county-year-month unemployment rate, log per capita income, county and year fixed effects. Unemployment and per-capita income are only available at the county-year level, but we interpolate these measures over months to avoid large jumps at the start of a year. We control for family planning and abortion clinics in all regressions (e.g., a linear measure of access to family planning is included as a control in the non-linear abortion access regressions). Standard errors are reported in parentheses and are clustered at the county level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A3: Number of Abortions – Interacted Model – Poisson

	All	15-19	20-24	25-29	30-34	35-39
	(1)	(2)	(3)	(4)	(5)	(6)
Abortion Distance 50 mi	-0.097***	-0.083***	-0.108***	-0.077**	-0.088**	-0.101***
	(0.027)	(0.031)	(0.025)	(0.030)	(0.040)	(0.033)
Family Planning Distance 25 mi	-0.027	-0.054	-0.015	-0.001	-0.020	0.007
	(0.041)	(0.056)	(0.047)	(0.038)	(0.057)	(0.057)
Abortion X Family Planning	-0.014	-0.017	-0.014	-0.022	-0.005	-0.021
	(0.018)	(0.024)	(0.019)	(0.020)	(0.027)	(0.026)
Marginal Effect (Abortion)	-0.103***	-0.092***	-0.115***	-0.087***	-0.090***	-0.111***
	(0.023)	(0.026)	(0.020)	(0.026)	(0.034)	(0.028)
Marginal Effect (Family Planning)	0.031	-0.055	-0.019	-0.007	0.022	0.006
	(0.036)	(0.051)	(0.043)	(0.033)	(0.051)	(0.052)
Observations	2,286	2,250	2,268	2,277	2,259	2,205

Notes: The analysis is at the county-year level. Each column is a separate regression and the measures of access enter linearly as the distance to the nearest abortion or family planning clinic; these measures are scaled so that the abortion access measure represents a 50 mile increase in distance to the nearest clinic and the family planning access measure represents a 25 mile increase in distance. Controls include county-year unemployment rate, log per capita income, county and year fixed effects. Standard errors are reported in parentheses and are clustered at the county level. The “Marginal Effect" estimates represent the marginal effects of access to both Abortion and Family Planning evaluated at the means of each. For example, “Marginal Effect (Abortion)" represents the following: $\beta_{Abortion} + \beta_{Interaction} * \overline{\text{Abortion}}$. *** p<0.01, ** p<0.05, * p<0.1.

Table A4: Number of Births – Interacted Model – Poisson

	All	15-19	20-24	25-29	30-34	35-39
	(1)	(2)	(3)	(4)	(5)	(6)
Abortion Distance 50 mi	0.006	0.004	0.014***	0.002	0.012**	0.008
	(0.003)	(0.005)	(0.004)	(0.004)	(0.006)	(0.006)
Family Planning Distance 25 mi	0.007	0.020*	0.003	0.014	0.018	-0.004
	(0.007)	(0.011)	(0.012)	(0.010)	(0.011)	(0.022)
Abortion X Family Planning	-0.003	-0.006	-0.008**	0.001	-0.001	0.002
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.006)
Marginal Effect (Abortion)	0.004	0.001	0.011***	0.003	0.012**	0.009*
	(0.003)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)
Marginal Effect (Family Planning)	0.006	0.019*	0.001	0.014	0.018	-0.003
	(0.006)	(0.009)	(0.011)	(0.009)	(0.011)	(0.021)
Observations	27,830	27,830	27,830	27,830	27,830	27,830

Notes: The analysis is at the county-year-month level. Each column is a separate regression and the measures of access enter linearly as the distance to the nearest abortion or family planning clinic; these measures are scaled so that the abortion access measure represents a 50 mile increase in distance to the nearest clinic and the family planning access measure represents a 25 mile increase in distance. Controls include county-year-month unemployment rate, log per capita income, county and year fixed effects. Unemployment and per-capita income are only available at the county-year level, but we interpolate these measures over months to avoid large jumps at the start of a year. Standard errors are reported in parentheses and are clustered at the county level. The "Marginal Effect" estimates represent the marginal effects of access to both Abortion and Family Planning evaluated at the means of each. For example, "Marginal Effect (Abortion)" represents the following: $\beta_{Abortion} + \beta_{Interaction} * \overline{\text{Abortion}}$. *** p<0.01, ** p<0.05, * p<0.1.