Appendices for

"How Far Is Too Far? New Evidence on Abortion Clinic Closures, Access, and Abortions"

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APPENDIX A: ADDITIONAL DETAILS ON DATA USED IN THE ANALYSIS

As described in the main text, our construction of clinic access measures relies on quarterly data on which clinics are open. We provide details on when each relevant clinic provided abortion services in the table below. We coded as "open" if they provided abortions for at least two out of three months in a given quarter. Hence, Figure 1 and the analysis that follow do not reflect the brief mass closures that occurred for two weeks in October 2014 when the surgical center requirement was enforced. The increase in average distance in the second quarter of 2014 is due to the closure of the sole clinic in Corpus Christi. For a few months, until the McAllen clinic re-opened in the third quarter of 2014, there was no abortion provider in south Texas.

We also note that, in order to construct the ASP measure, we combine into a single "abortion service region" groups of counties whose nearest clinic are in the same commuting zone. For instance, the city of Austin has abortion clinics in both Travis and Williamson counties; we use the population centroid of Travis county, the more populated of the two, to construct the Austin service region. Because they are in the same commuting zone, we additionally combine Shreveport and Bossier City, Louisiana (3 miles apart), Oklahoma City and Norman, Oklahoma (20 miles apart), Sugar Land and Houston, Texas (22 miles apart), Harlingen and McAllen, Texas (35 miles apart), and El Paso, Texas and Las Cruces, New Mexico (54 miles apart). We additionally combine Dallas and Fort Worth (33 miles apart), although they are not in the same commuting zone. The results are similar if we use a different rule, combining counties only if their population centroids are less than 25 miles apart.

In the main text, we report that the abortion data provided by the Texas DSHS may be missing up to 1,164 abortions obtained in nearby and neighboring states in 2014 and 1,418 in 2015 because of limited participation in STEVE. Kansas reported collecting county of residence and participating in STEVE for the duration of our analysis. Louisiana reports similarly but only beginning in 2013, which motivates our analysis using data from 2013–2015 as a robustness check. Arkansas, Colorado, New Mexico, and Oklahoma report not participating in STEVE. However, based on data they provided to us, the number of Texas women obtaining abortions in these states in 2014 was 45 in Arkansas, 48 in Colorado, and 136 in Oklahoma. New Mexico could only provide aggregate information on abortions obtained by out-of-state residents. If we conservatively assume its entire increase in its abortions to out-of-state residents after 2012 was driven by Texas women, we estimate that 935 Texas women obtained abortions in New Mexico in 2014. The actual number is likely to be smaller because two abortion facilities in Tucson, Arizona closed during this period as well. Using the same approach for the following year, Texas' 2015 abortion counts may be missing up

to 33 abortions in Arkansas, 46 in Colorado, 1,208 in New Mexico, and 131 in Oklahoma, summing to 1,418 abortions.

Table A1
Abortion clinic operations in Texas and neighboring states, January 2009 through May 2017

Clinic	City	State	Dates providing abortion services
Texas			
Planned Parenthood Choice	Abilene	TX	<2009-11/6/2012
Austin Womens Health Center (Brookside)	Austin	TX	<2009-present
International Health Care Solution	Austin	TX	<2009-8/31/2014
Planned Parenthood South Austin Clinic	Austin	TX	<2009-present
Whole Woman's Health Austin	Austin	TX	<2009-7/14/2014; 4/30/17-present
Whole Woman's Health Beaumont	Beaumont	TX	<2009-3/19/2014
Planned Parenthood Center for Choice (Bryan)	Bryan	TX	<2009-8/1/2013
Coastal Birth Control Center	Corpus Christi	TX	<2009-6/6/2014
Fairmount Center	Dallas	TX	<2009-9/30/2009
North Park Medical Group/AAA Healthcare Systems	Dallas	TX	<2009-11/1/2013; 2/15/17-present
Planned Parenthood Dallas/South Dallas Surgical Health Services Center	Dallas	TX	7/1/2014-present
Planned Parenthood of Greater Texas Surgical Health Services	Dallas	TX	<2009-6/30/2014
Routh St. Women's Clinic	Dallas	TX	<2009-6/13/2015
Southwestern Women's Surgery Center	Dallas	TX	9/2009-present
The Women's Center (Abortion Advantage)	Dallas	TX	<2009-11/1/2013; 1/1/2014-12/23/2014
Hilltop Women's Reproductive Center (Abortion Advisers Agency)	El Paso	TX	<2009-present
Reproductive Services	El Paso	TX	<2009-11/1/2013; 1/15/2014-4/11/2014; 9/24/2015-present
Planned Parenthood of Greater Texas Star Clinic/Southwest Fort Worth Health Center	Fort Worth	TX	7/1/2013-11/1/2013; 1/13/2014-present
West Side Clinic	Fort Worth	TX	<2009-11/1/2013
Whole Woman's Health Ft. Worth	Fort Worth	TX	<2009-11/1/2013; 12/6/2013-present
Planned Parenthood of Greater Texas Henderson Clinic	Forth Worth	TX	<2009-6/30/2013

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Table A1
Abortion clinic operations in Texas and neighboring states, January 2009 through May 2017

Clinic	City	State	Dates providing abortion services
Harlingen Reproductive	Harlingen	TX	<2009-11/1/2013
A Affordable Women's Medical Center	Houston	TX	<2009-2/14/2014
AAA Concerned Women's Center (Abortion Hotline)	Houston	TX	<2009-10/6/2014
Aalto Women's Center	Houston	TX	<2009-3/13/2014
Aaron women's center/Women's Pavilion	Houston	TX	<2009-8/7/2014
Crescent City Women's Center	Houston	TX	<2009-12/30/2011
Houston Women's Clinic	Houston	TX	<2009-present
Planned Parenthood Center for Choice (Gulf Freeway)	Houston	TX	11/1/2010-present
Planned Parenthood of Southest Texas	Houston	TX	<2009-10/31/2010
Suburban Women's Clinic (Medical Center) of NW Houston	Houston	TX	<2009-present
Suburban Women's Clinic of SW Houston	Houston	TX	<2009-present
Texas Ambulatory Surgery Center	Houston	TX	<2009-present
Women's Center of Houston	Houston	TX	10/4/2013-present
Killeen Women's Health Center	Killeen	TX	<2009-11/1/2013
Planned Parenthood Women's Health Center	Lubbock	TX	<2009-11/1/2013
Whole Woman's Health- McAllen	McAllen	TX	<2009-11/1/2013; 9/6/2014-present
Planned Parenthood Choice	Midland	TX	<2009-8/30/2013
Planned Parenthood Choice	San Angelo	TX	<2009-8/30/2013
A Woman's Choice Quality Health Center	San Antonio	TX	<2009-6/15/2011
Alamo Women's Clinic/ Alamo Women's Reproductive Services Clinic	San Antonio	TX	6/1/2015-present
Alamo Women's Reproductive Services Clinic	San Antonio	TX	<2009-5/31/2015
All Women's Medical Center	San Antonio	TX	<2009-8/6/2013
New Women's Clinic	San Antonio	TX	<2009-11/1/13
Planned Parenthood Babcock Sexual Healthcare	San Antonio	TX	<2009-5/30/2015
Planned Parenthood Bandera Clinic	San Antonio	TX	<2009-4/14/2009; 11/16/2009-11/1/2013

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Table A1
Abortion clinic operations in Texas and neighboring states, January 2009 through May 2017

Clinic	City	State	Dates providing abortion services
Planned Parenthood Medical Center	San Antonio	TX	6/1/2015-present
Planned Parenthood Northeast Clinic	San Antonio	TX	<2009-4/14/2009; 11/16/2009-11/1/2013
Planned Parenthood Southeast Clinic	San Antonio	TX	<2009-4/14/2009
Planned Parenthood Marbach Clinic	San Antonio	TX	<2009-4/14/2009
Reproductive Services	San Antonio	TX	<2009-7/7/2012
Whole Woman's Health San Antonio	San Antonio	TX	8/2/2010-present
Planned Parenthood Center for Choice	Stafford	TX	<2009-11/1/2013
KNS Medical PLLC INC	Sugar Land	TX	<2009-3/27/2013
Planned Parenthood of Central Texas	Waco	TX	1/1/2012-8/31/2013; 5/2/2017-present
Planned Parenthood Waco	Waco	TX	<2009-12/31/2011
Neighboring states*			
Alamosa Planned Parenthood	Alamosa	CO	2009-present
Bossier City Medical Suite	Bossier City	LA	<2009-4/15/2017
Hope Medical Group for Women	Shreveport	LA	<2009-present
Planned Parenthood Albuquerque Surgical Center	Albuquerque	NM	<2009-present
Southwestern Women's Options	Albuquerque	NM	1/2009-present
University of New Mexico Center for Reproductive Health	Albuquerque	NM	<2009-3/25/2014
University of New Mexico Center for Reproductive Health	Albuquerque	NM	4/1/2014-present
Whole Woman's Health	Las Cruces	NM	9/15/2014-present
Planned Parenthood Santa Fe Health Center	Santa Fe	NM	<2009-present
Hilltop Women's Reproductive Clinic	Santa Teresa	NM	<2009-present
Abortion Surgery Center	Norman	OK	<2009-present
Outpatient Services for Women	Oklahoma City	OK	<2009-12/9/2014
Planned Parenthood Great Plains	Oklahoma City	11/15/2016-present	

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Table A1
Abortion clinic operations in Texas and neighboring states, January 2009 through May 2017

Clinic	City	State	Dates providing abortion services
Trust Women South Wind Women's Center	Oklahoma City	OK	9/15/2016-present

Author-constructed panel of abortion clinic operations in Texas and neighboring states. Clinics are identified based on licensure data from the Texas DSHS. To identify dates of operation, we use licensure dates supplemented with accounts of clinic operations in the judicial record, news reports and on websites including Fund Texas Choice. A clinic in a neighboring state is listed only if it is the closest destination for at least one Texas county in one quarter in our dataset. "Present" is as of May 4, 2017.

APPENDIX B: ADDITIONAL EVIDENCE ILLUSTRATING VARIATION AND SUPPORTING THE VALIDITY RESEARCH DESIGN

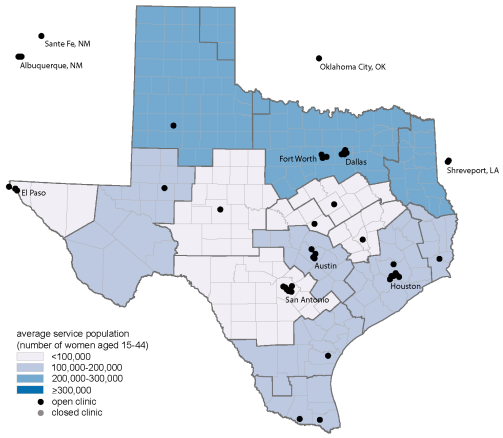
In the following tables and figures, we show evidence illustrating the variation used in our analysis and also evidence supporting the validity of the research design.

We also note here that we have closely investigated the sharp reduction and subsequent "rebound" in abortion rates evident for some counties in Figure 5. We have also investigated the counties underlying this variation in greater detail. Prior to HB2, four cities in South Texas had licensed abortion clinics: San Antonio, Corpus Christi, McAllen, and Harlingen. The clinics in McAllen and Harlingen both closed on November 1, 2013 when the admitting privileges requirement went into effect, causing Corpus Christi—which is about 150 miles away from both locations—to become the nearest option for many women. The associated county-level abortion rates fell by 64 percent for McAllen and by 56 percent for Harlingen between 2012 and 2014. In June of 2014, the sole provider of abortion services in Corpus Christi—who commuted there from San Antonio to provide abortion services two days a month—retired due to health reasons.[1]. As a result, San Antonio became the closest abortion destination for women in McAllen, Harlingen and Corpus for three months, until September 2014 when the Fifth Circuit Court of Appeals carved out an exemption from the admitting-privileges requirement for the McAllen clinic, allowing it to re-open in September. When the McAllen clinic re-opened, abortion rates in McAllen and nearby Harlingen increased. Meanwhile, in Corpus Christi, where the part-time clinic had closed, abortion rates fell by 12 percent.

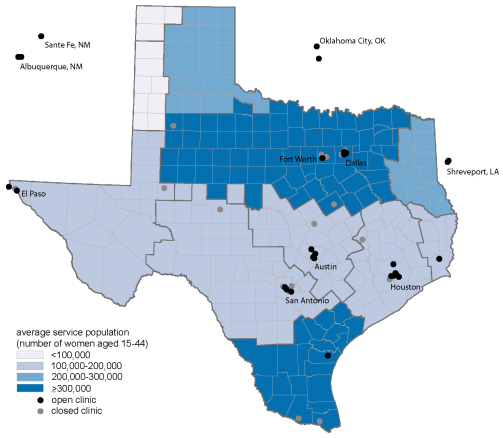
[1]See Stoeltje, M. F., "Abortion clinic closes in Corpus Christi. San Antonio Express-News," June 2014. Also Meyer, R., "City's abortion clinic sees patient influx." Corpus Christi Caller-Times, December 2013.

Figure B1
(Appendix) Service regions and Average Service Populations, Q2 2013 and Q4 2013

Panel A: Q2 2013

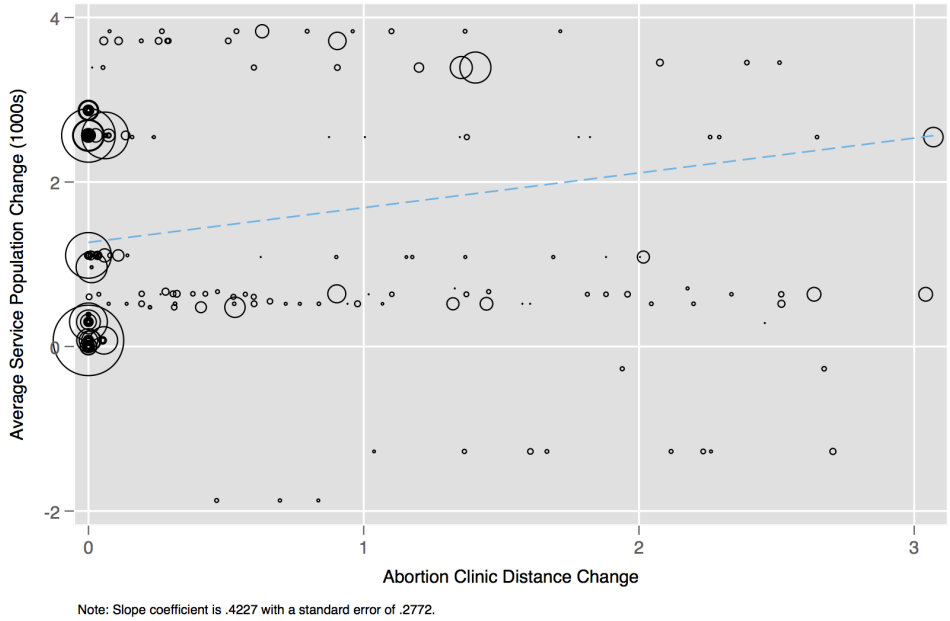


Panel B: Q4 2013



Notes: Service regions are defined annually by spatial proximity to the nearest city with an abortion clinic. These are delineated by heavy boundary lines. The Average Service Population is the total population of women aged 15 to 44 divided by the number of clinics in each service region.

Figure B2
(Appendix) Independent variation in Average Service Population measure of access to abortion



Notes: Population-weighted linear regression of the change in average service population on the change in distance to the nearest abortion provider. Changes are calculated between Q2 2013 to Q4 2013. See previous figures for additional definitions and sources.

Figure B3
(Appendix) Trends in abortion rates *by age* across treatment intensity groups, where treatment intensity is the change in distance to nearest clinic Q2 2013 to Q4 2013

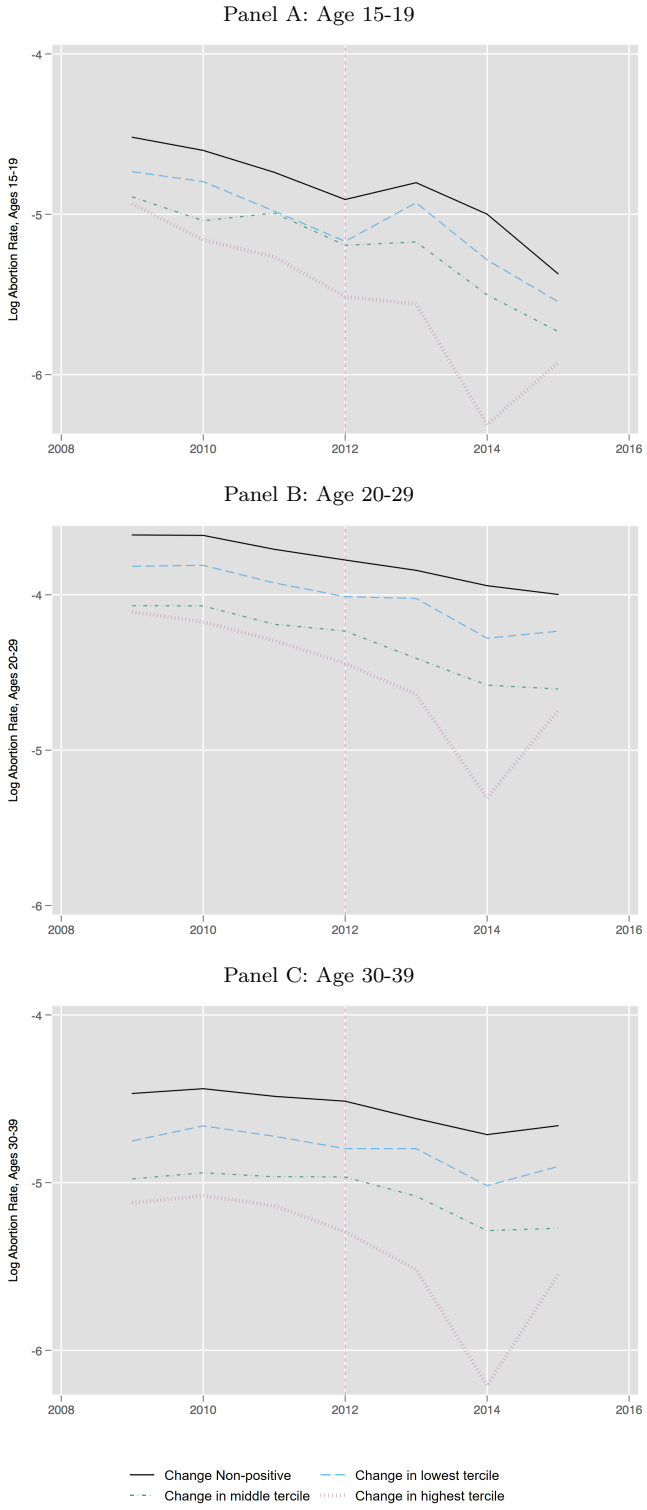


Figure B4
(Appendix) Trends in birth rates *by age* across treatment intensity groups,
where treatment intensity is the change in distance to nearest clinic Q2 2013 to Q4 2013

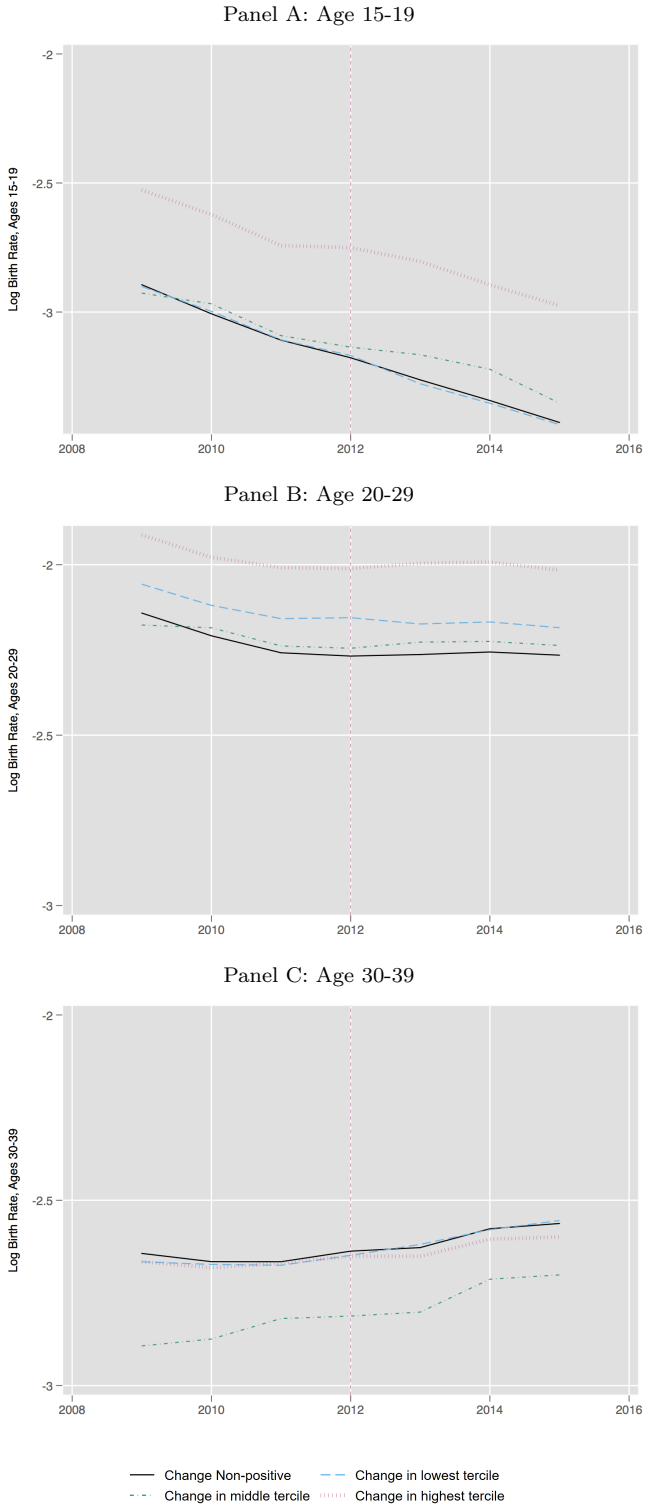


Figure B5
(Appendix) Trends in covariates across treatment intensity groups,
where treatment intensity is the change in distance to nearest clinic Q2 2013 to Q4 2013

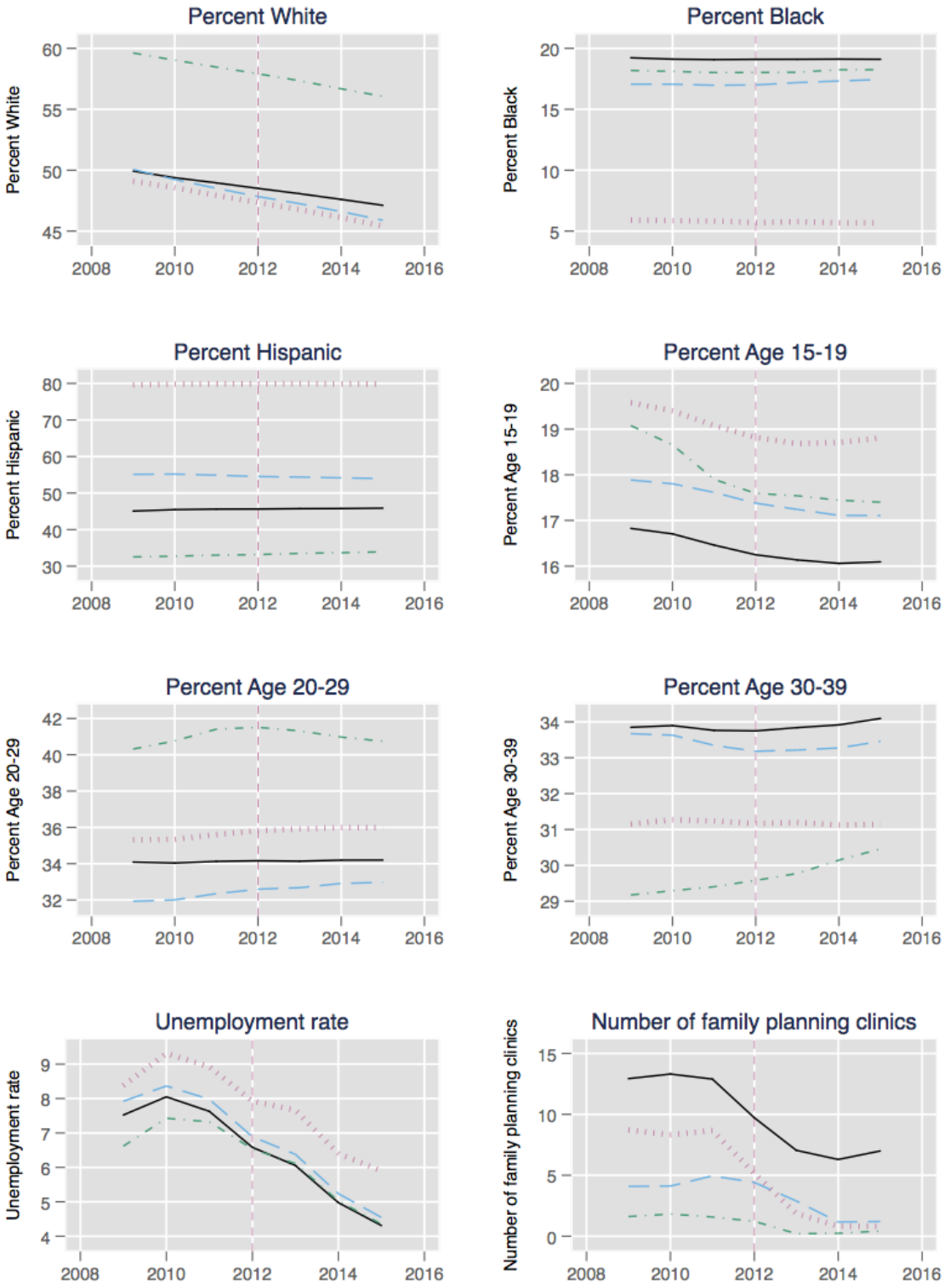
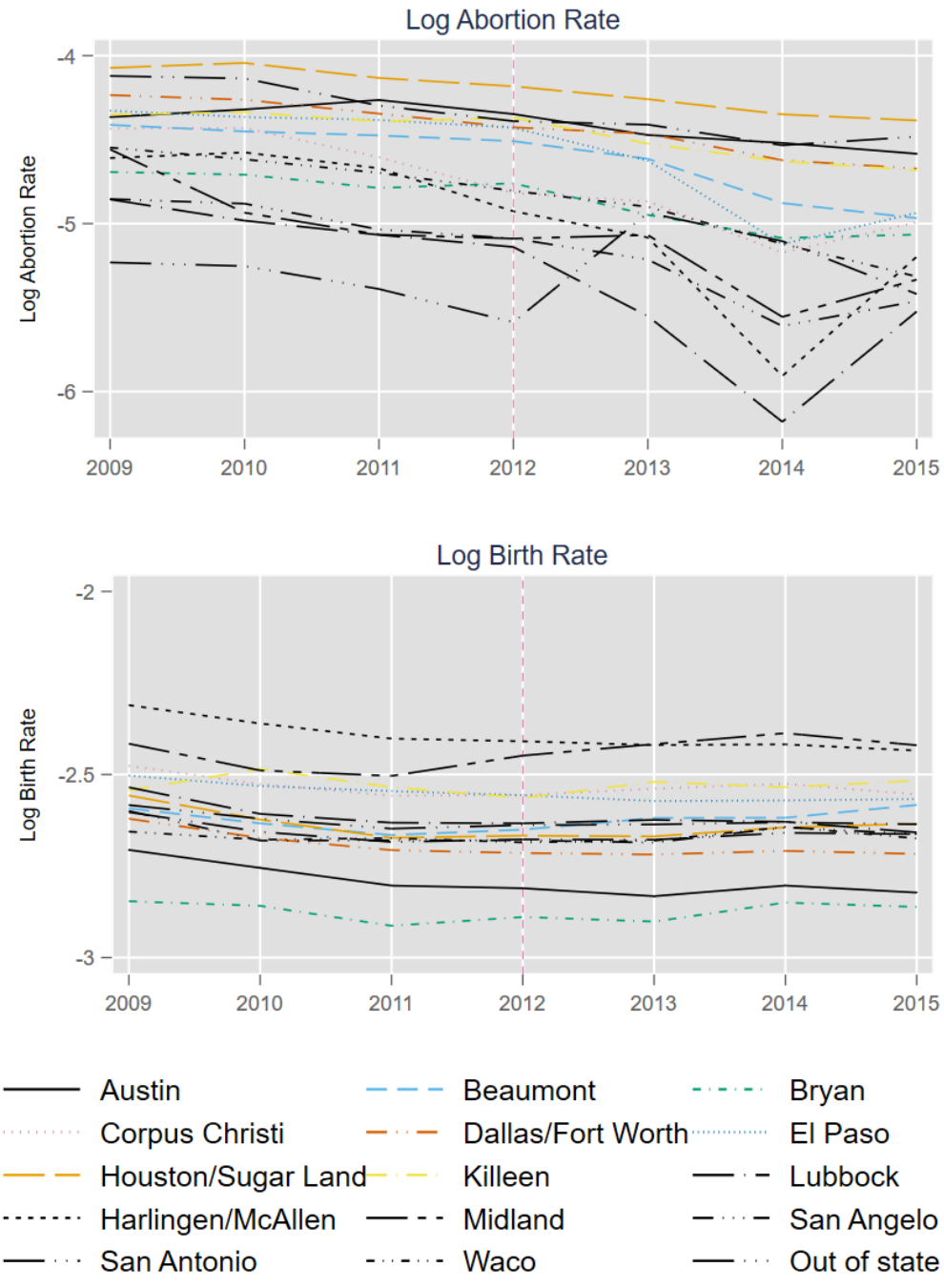


Figure B6
(Appendix) Trends in abortion and birth rates across service regions



Notes: Counties are grouped into service regions using the Quarter 2 2013 service region map (See Panel A of Figure B1). The vertical line highlights the final year of data before HB2 was enacted. Note that we combine the Oklahoma City/Norman, Oklahoma and Shreveport/Bossier City, Louisiana service regions into a single "out of state" region for the purposes of this figure, because the Oklahoma service region only includes 3 rural counties with small populations yielding noisy estimates.

APPENDIX C: ESTIMATED EFFECTS BASED ON CONTINUOUS NON-LINEAR (QUADRATIC) SPECIFICATION

While the indicator-type of specification used for the results presented in the main text is useful for representing the estimated effects in broad strokes, we acknowledge that it is not very realistic model because it is unlikely that abortion rates are actually a discontinuous step-function in distance intervals of 50 miles. Moreover, it is not well suited to predicting the effects of changes in access because it will predict "no effect" of any change in distance that does not span different distance bins *by construction*. Thus, in this appendix we report estimates from a more realistic model in which abortion rates are a continuous non-linear (quadratic) function of distance and in which we also allow non-linear (quadratic) effects of the average service population.

Appendix Table C1 reports our preferred estimates of the effects of changes in clinic access on abortion rates, evaluated as a continuous non-linear (quadratic) function of both travel distance and the average service population. They serve to further illustrate the non-linear effects of increases in distance—they imply that a 25-mile increase in distance to the nearest clinic is estimated to reduce abortions by 0–10 percent depending on the initial distance.[2] If the nearest clinic is 0 miles away, a 25-mile increase in distance is estimated to reduce the abortion rate approximately 10 percent, implying that modest initial increases in distance have substantial effects on abortion rates. The effects of increases in distance are smaller when the nearest clinic is initially more distant: if the nearest clinic is already 200 miles away, a 25-mile increase does not have a statistically significant effect on the abortion rate. Intuitively, once the nearest clinic is already quite distant, further increases in distant have little additional effect.

The estimates from the continuous non-linear model also indicate non-linear effects of our congestion measure. Beginning from a base of 50,000 women per clinic, which is roughly the minimum of the average service population measure we observe in Texas during this period, a 100,000 woman increase in average service population is estimated to have no discernible effect on abortion rates.[3] Our estimates indicate that a 100,000 woman increase in average service population from a base of 200,000 reduces abortion rates 5 percent, and the same increase from a base of 300,000 reduces abortion rates 9 percent. These are well within the magnitudes of change experienced in Texas.[4]

[2]See Appendix Figure C1 for a graphical representation of the estimated effects implied by the model.

[3]This may be because the available providers have capacity to meet increased demand at these low measures of congestion, but by the time average service populations reach 200,000 additional increases in congestion begin affect abortion rates.

[4]For the state of Texas as a whole, the "average service population" increased from 150,000 to 290,000 immediately following HB2, and then continued to rise, reaching an average of 330,000 in 2015 (Figure 1).

The estimated effects based on this type of model lead to the same general conclusions about the effects on delayed abortions as our the results described in the main text.

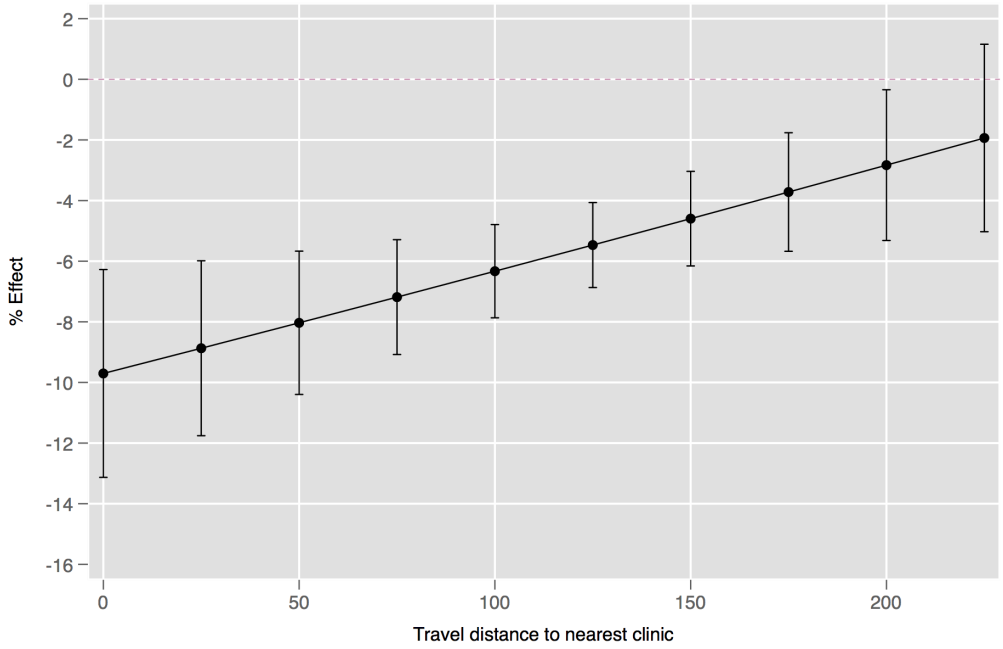
Table C1
(Appendix) Estimated effects of distance and congestion on abortion based on a quadratic specification

	(1)	(2)	(3)	(4)	(5)
	Total	Panhandle excluded	< 7 weeks	7-12 weeks	>12 weeks
Distance (100s miles)	-0.427***	-0.470***	-0.821***	-0.212*	-0.472***
	(0.084)	(0.082)	(0.273)	(0.121)	(0.121)
Distance^2 (100s miles)	0.073***	0.094***	0.274***	-0.019	0.075*
	(0.028)	(0.025)	(0.094)	(0.038)	(0.041)
Average Service Population (100,000s)	0.055	0.033	0.466***	-0.112	-0.226**
	(0.039)	(0.043)	(0.097)	(0.076)	(0.114)
Average Service Population^2	-0.022***	-0.018***	-0.108***	0.018	0.051***
	(0.006)	(0.006)	(0.016)	(0.013)	(0.018)

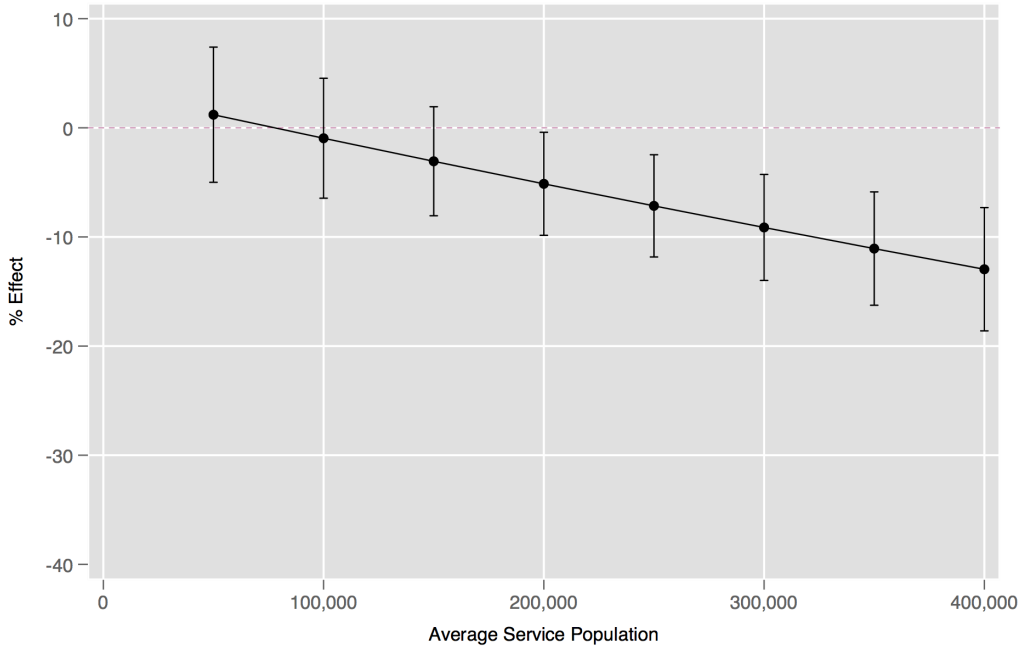
Notes: Estimates are based on a Poisson model evaluating expected abortion rates among women aged 15 to 44 using county-level data from 2009–2015. All models include county and year fixed effects as well as the following time-varying county control variables: the fraction of the 15-44 female population in five year groupings; the fraction of each of these age groups that is non-Hispanic white, non-Hispanic black, or Hispanic versus other race/ethnicity); family planning control variables as described in the text; and the county unemployment rate. Standard errors (in parentheses) allow errors to be correlated within counties over time.
*, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

Figure C1
(Appendix) Estimated percent effects of decreasing access on abortion rates

Panel A: Effect of 25 mile increase in distance by starting level

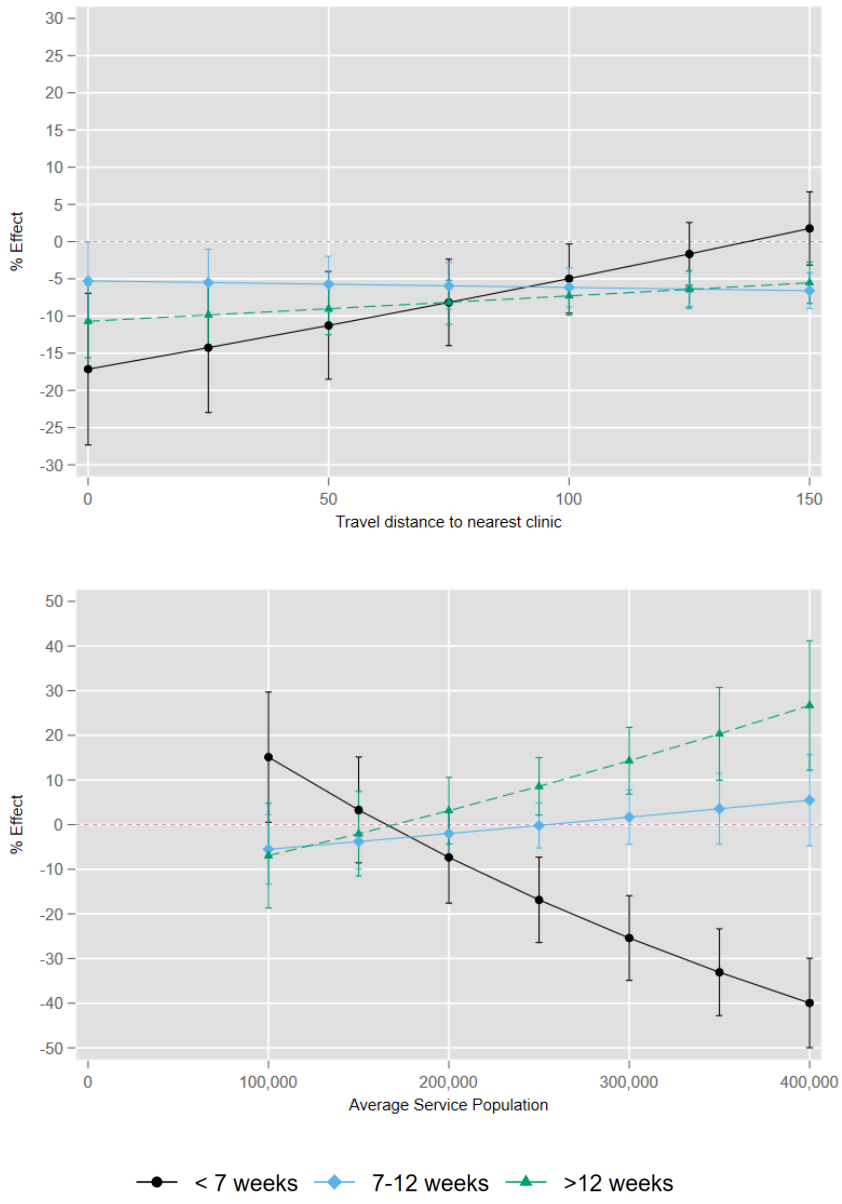


Panel B: Effect of 100,000 woman increase in average service population by starting level



Notes: Plot of estimated average percent effects and 95 percent confidence intervals based on results in Column 1 of Table C1.

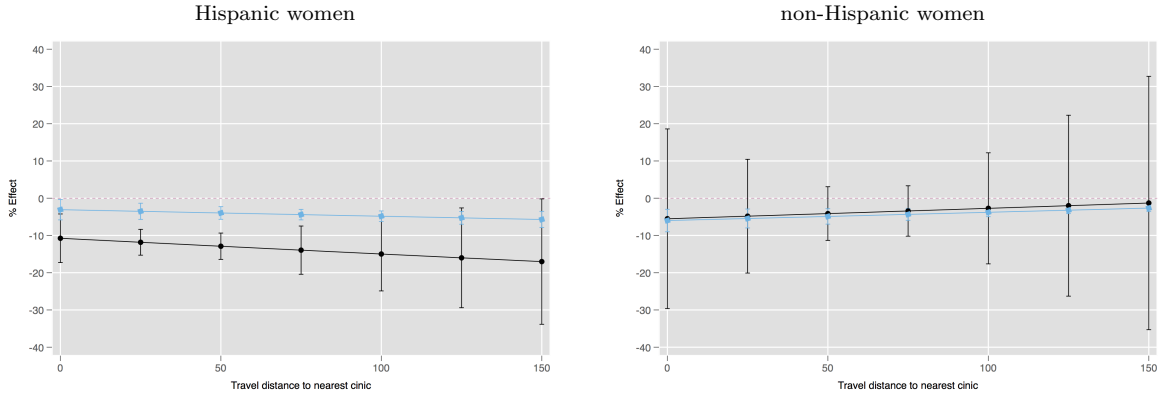
Figure C2
(Appendix) Estimated effects of abortion access on abortions by gestational age



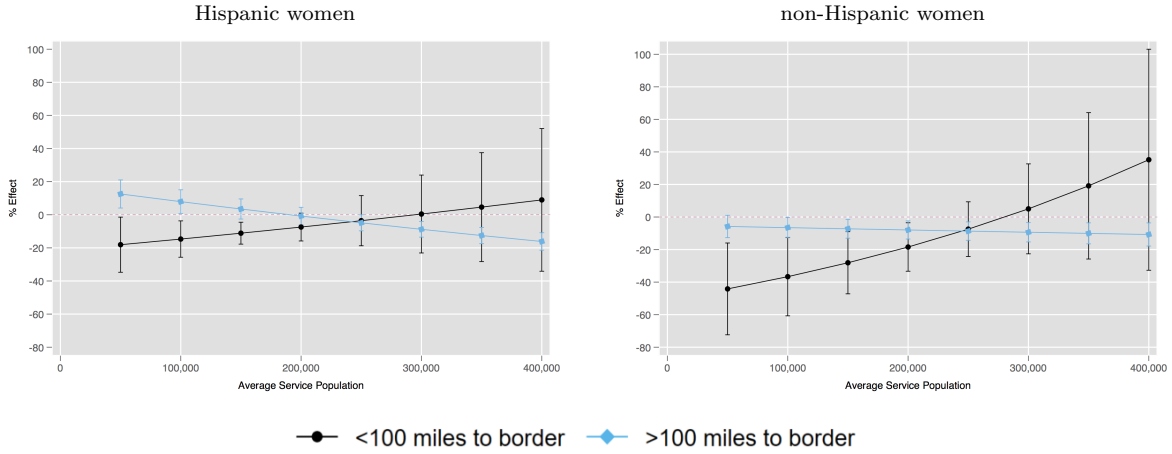
Notes: Plot of estimated average percent effects and 95 percent confidence intervals based on Columns 3-5 of Table C1. Results are estimated percent effects on abortions by gestational age, estimated for a subset of higher-population counties for which this information is available. Effects are plotted over the ranges of travel distance and average service population observed in the sample.

Figure C3
(Appendix) Heterogeneous effects of abortion access by distance to the Mexican border and ethnicity

Panel A: Effect of 25 mile increase in distance by starting level



Panel B: Effect of 100,000 woman increase in average service population by starting level



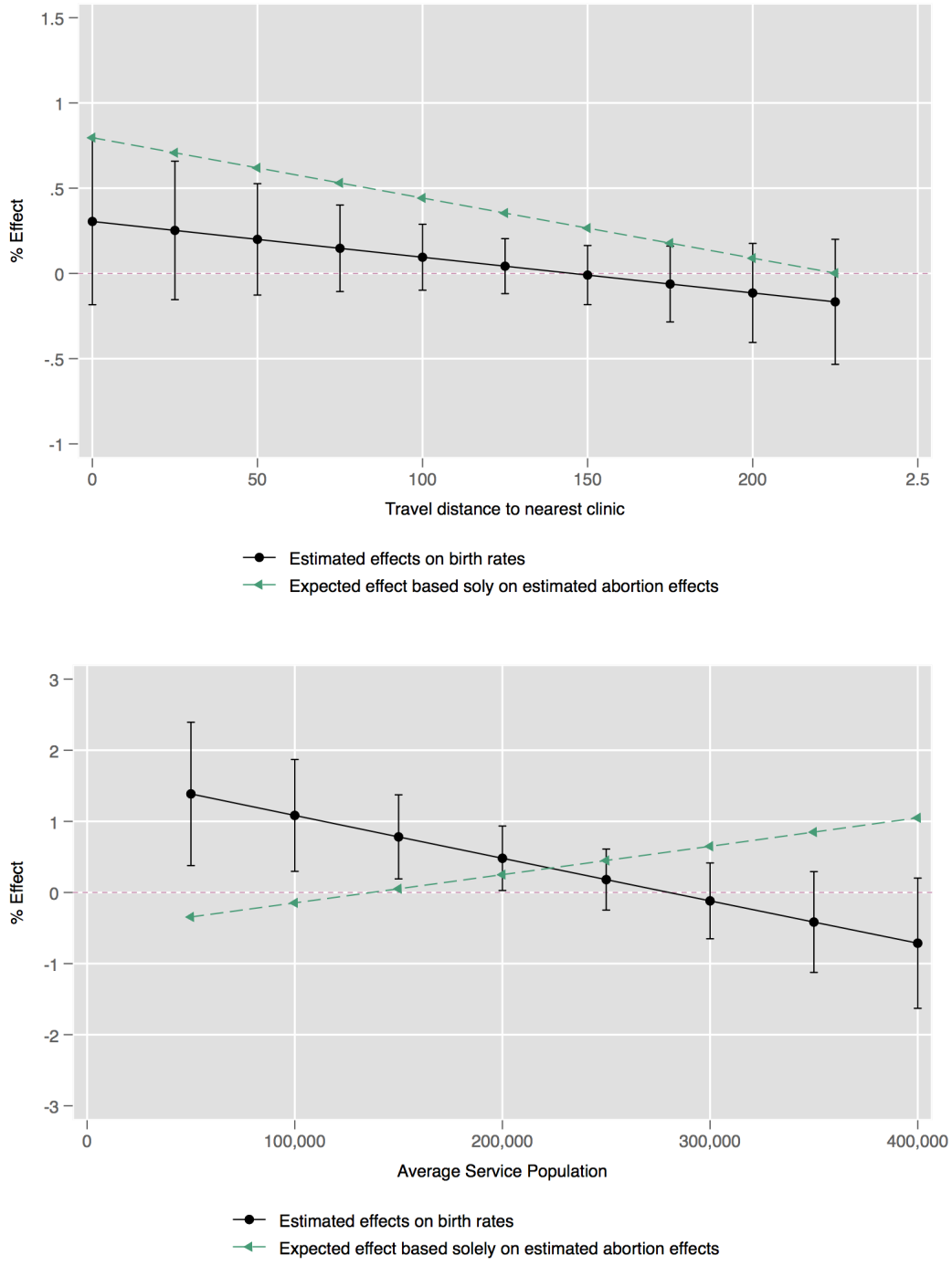
Notes: Plot of estimated average percent effects and 95 percent confidence intervals. Specification corresponds to that in Column 1 of Table C1, with the addition of interaction terms between an indicator that a county is less than 100 miles from the Mexican border and the measures of abortion access. Models are estimated separately for Hispanic and non-Hispanic women.

Table C2
(Appendix) Estimated effects of distance and congestion on births based on a quadratic specification

Group:	All	15–19	20–29	30–39	40–44	White	Hispanic	Black	Other	1st Birth†	2nd+ Birth†	Married†	Unmarried†
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Distance (100s miles)	0.013	0.000	0.015	0.010	-0.014	-0.004	0.003	0.013	0.014	-0.039*	0.041***	0.014	0.011
	(0.011)	(0.030)	(0.016)	(0.019)	(0.055)	(0.016)	(0.012)	(0.035)	(0.058)	(0.021)	(0.014)	(0.015)	(0.019)
Distance^2 (100s miles)	-0.004	0.002	-0.003	-0.000	0.019	0.007	-0.000	-0.005	-0.006	0.007	-0.011**	-0.002	-0.007
	(0.004)	(0.010)	(0.005)	(0.006)	(0.020)	(0.005)	(0.004)	(0.012)	(0.019)	(0.007)	(0.005)	(0.005)	(0.006)
Average Service Population (100,000s)	0.020***	-0.010	0.014	0.017	-0.020	0.030**	0.032***	0.037	-0.034	-0.017	0.038*	0.019**	0.019
	(0.007)	(0.021)	(0.010)	(0.012)	(0.036)	(0.012)	(0.010)	(0.023)	(0.029)	(0.029)	(0.020)	(0.009)	(0.013)
Average Service Population^2 (100,000s)	-0.003**	0.003	-0.002	-0.003*	0.005	-0.004**	-0.004**	-0.007*	0.005	0.005	-0.007**	-0.003*	-0.003
	(0.001)	(0.003)	(0.001)	(0.002)	(0.006)	(0.002)	(0.002)	(0.004)	(0.004)	(0.005)	(0.003)	(0.002)	(0.002)

Notes: Estimates are based on a Poisson model evaluating the effects of abortion access in quarter t on expected births in quarter t+2. Births are measured for all women aged 15 to 44 (Column 1) and for various sub-groups of women (Columns 2-13) using county-level data for all 254 Texas counties over all quarters between 2009 and 2015. Dagger signifies using overall population of women aged 15-44 as denominator because population estimates for the relevant sub-group are not available. All models include county fixed effects, year fixed effects, demographics, the unemployment rate, an indicator for the presence of a family planning clinic in the county, and this indicator's interaction with post-2012. Standard errors (in parentheses) allow errors to be correlated within counties over time.
*, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

Figure C4
(Appendix) Estimated effects on birth rates



Notes: "Estimated effects on birth rates" plots the estimated average percent effects and 95 percent confidence intervals based on results in Column 1 of Table C2. "Expected effect" plots the predicted change in birth rates if the entire change in abortions estimated in Column 1 of Table C1 translates to changes in births.

APPENDIX D: RESULTS OF SENSITIVITY ANALYSES

This appendix shows the results of several additional robustness checks for the results shown in Column 1 of Table 2 and Table C1. Column 2 of tables D1 and D2 report an alternative set of estimates using geodesic ("as the crow flies") distances rather than travel distances and Column 3 reports results using estimated travel times. The results are substantively the same regardless of which of these three measures of access one chooses. Column 4 presents alternative estimates that use travel distance—as in our main analyses–but using an alternative to the Poisson model to evaluate log abortion rates. Specifically, this column presents weighted least squares estimates applied to a measure of log abortion rates constructed using the inverse hyperbolic sine function, where the weights are the population of females aged 15-44. Suppressing subscripts, the outcome variable we use in this analysis is $ln(\frac{abortions+\sqrt{abortions^2+1}}{population})$ which has the advantage of being defined even when zero births are observed. This alternative approach yields qualitatively similar estimates.

In Table D3 we show that our main results are robust to alternative approaches to controlling for access to family planning.

In columns 2 and 3 of Table D4 we conduct tests that confirm our main results are not subject to any significant bias driven by unmeasured abortions obtained in nearby states. In our first test, we eliminate the entire Texas Panhandle region from the sample because this region includes counties for which New Mexico or Oklahoma abortion clinics were the nearest abortion destination in the later years in the sample. More specifically, we identify the Panhandle as counties in Texas Public Health Region 1 as defined by the Texas DSHS. Our second test eliminates all counties in Texas for which an out-of-state clinic is ever the closest destination for an abortion during the study period. This rule causes us to eliminate 56 out of Texas' 254 counties, all of them in the Panhandle region and Northeastern Texas. Because these counties are primarily rural, they account for only 5.4 percent of the population of women of childbearing age. The resulting estimates are quite similar to our main results.

We also consider estimates that rely on different time windows for the analysis. We do so with three main objectives. First, we want to verify that our estimates are robust to focusing on a narrower window of time around around HB2's enactment. Our main results use data from 2009–2015, and thus use variation in access generated by closures induced by HB2 in addition variation in access generated to closures (and openings) taking place at other times. We would be less confident in the validity of these estimates if they are not robust to an approach that restricts the degree to which the latter source of variation contributes to the estimates. Our second objective is to consider the robustness of the estimates to using years in which we consistently have data on abortions occurring in Louisiana, which are included beginning in 2013. Our third and final objective is to examine whether the estimates

differ if we focus on "later post-HB2 years" in order to speak to whether the immediate and longer-run effects differ.

The results of these analyses are shown in Columns 4-6 of Table D4. Column 4 reports estimates that use data from 2012 to 2014, demonstrating that the results are qualitatively similar when the models are estimated with a narrower time window around the enactment of HB2. Column 5 reports estimates based on data from 2012 and 2015, omitting the year most clinics closed and the subsequent year. The estimates in each of these columns continue to indicate significant effects of increasing distance and the average service population. That said, the estimates are smaller in magnitude when 2015 is the only fully post-HB2 year included in the analysis, which does suggest that the immediate effects of decreased access may be larger than the effects after a period of time, as individuals and clinics learn and make adjustments. Finally, Column 6 reports estimates that solely use data from 2013 through 2015, which corresponds to the set of years in which abortions taking place in Louisiana are reported in the data. The variation across these three years is driven in part by the fact that 2013 is only partially affected by the closures precipitated by HB2 and also in part by subsequent clinic openings. The estimated effects of distance based on this variation are again somewhat attenuated, but continue to point to similar conclusions as the main results.

We also present results from a sensitivity analysis of the estimated effects by gestational age, in Table D5. This analysis is based on a balanced set of counties with data available. It produces less precise estimates, as expected, but estimates that point to the same conclusion.

Table D1
(Appendix) Sensitivity of estimated effects on abortion rates in Table 2 to alternative measures of access and abortion

	(1)	(2)	(3)	(4)
I(50< Driving Distance $\leq$ 100)	-0.179***			-0.169***
	(0.032)			(0.036)
I(100 < Driving Distance $\leq$ 150)	-0.333***			-0.298***
	(0.090)			(0.111)
I(150 < Driving Distance $\leq$ 200)	-0.477***			-0.394***
	(0.068)			(0.067)
I(200 < Driving Distance)	-0.588***			-0.698***
	(0.097)			(0.124)
Average Service Population (100,000s)	-0.073**	-0.075**	-0.073**	-0.119***
	(0.030)	(0.030)	(0.029)	(0.033)
I(50< Crow-Flies Distance $\leq$ 100)		-0.196***		
		(0.034)		
I(100 < Crow-Flies Distance $\leq$ 150)		-0.406***		
		(0.086)		
I(150 < Crow-Flies Distance $\leq$ 200)		-0.287**		
		(0.114)		
I(200 < Crow-Flies Distance)		-0.627***		
		(0.102)		
I(1 < Time $\leq$ 2)			-0.164***	
			(0.037)	
I(2 < Time $\leq$ 3)			-0.444***	
			(0.082)	
I(3 < Time $\leq$ 4)			-0.627***	
			(0.237)	
I(4 < Time)			-0.531***	
			(0.073)	

Notes: Column 1 repeats the estimate from Column 1 of Table 2. Column 2 is similar to 1 but uses geodesic distance rather than travel distance. Column 3 is similar to 1 but uses travel time in hours instead of a distance measure. Column 4 is similar to 1 but instead applies weighted least squares to a measure of log abortion rates constructed using a hyperbolic sine transformation such that the outcome is $ln(\frac{count+\sqrt{count^2+1}}{population})$. See notes to Table 2. *, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

Table D2
(Appendix) Sensitivity of estimated effects on abortion rates in Table C1 to alternative measures of access and abortion

	(1)	(2)	(3)	(4)
Distance (100s miles, driving)	-0.427***			-0.380***
	(0.084)			(0.107)
Distance^2 (100s miles, driving)	0.073***			0.044
	(0.028)			(0.042)
Average Service Population (100,000s)	0.055	0.055	0.051	0.002
	(0.039)	(0.038)	(0.039)	(0.050)
Average Service Population^2	-0.022***	-0.021***	-0.021***	-0.019***
	(0.006)	(0.006)	(0.006)	(0.007)
Distance (100s miles, crow flies)		-0.495***		
		(0.101)		
Distance^2 (100s miles, crow flies)		0.099**		
		(0.041)		
Travel time (hours)			-0.271***	
			(0.052)	
Time^2 (hours)			0.028**	
			(0.012)	

Notes: Column 1 repeats the estimate from Column 1 of Table C1. Column 2 is similar to 1 but uses geodesic distance rather than travel distance. Column 3 is similar to 1 but uses traveling time instead of a distance measure. Column 4 is similar to 1 but instead applies weighted least squares to a measure of log abortion rates constructed using a hyperbolic sine transformation such that the outcome is $ln(\frac{count+\sqrt{count^2+1}}{population})$. See notes to Table C1. *, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

Table D3
(Appendix) Sensitivity of estimated effects on abortion rates in Tables 2 and C1 to alternate family planning controls

	(1)	(2)	(3)	(4)
Panel A: Modeling Effect of Distance as a Step-Function and Effect of ASP as Linear				
I(50< Driving Distance ≤ 100)	-0.179***	-0.171***	-0.183***	-0.179***
	(0.032)	(0.031)	(0.032)	(0.032)
I(100 < Driving Distance ≤ 150)	-0.333***	-0.332***	-0.332***	-0.327***
	(0.090)	(0.090)	(0.090)	(0.090)
I(150 < Driving Distance ≤ 200)	-0.477***	-0.457***	-0.484***	-0.464***
	(0.068)	(0.071)	(0.068)	(0.068)
I(200 < Driving Distance)	-0.588***	-0.558***	-0.580***	-0.573***
	(0.097)	(0.100)	(0.098)	(0.095)
Average Service Population (100,000s)	-0.073**	-0.074***	-0.070**	-0.074**
	(0.030)	(0.029)	(0.030)	(0.030)
Panel B: Modeling Effect of Distance and ASP as Quadratic				
Distance (100s miles, driving)	-0.427***	-0.425***	-0.435***	-0.426***
	(0.084)	(0.084)	(0.085)	(0.083)
Distance^2 (100s miles, driving)	0.073***	0.074***	0.077***	0.075***
	(0.028)	(0.028)	(0.029)	(0.028)
Average Service Population (100,000s)	0.055	0.044	0.057	0.053
	(0.039)	(0.039)	(0.041)	(0.039)
Average Service Population^2	-0.022***	-0.020***	-0.021***	-0.021***
	(0.006)	(0.007)	(0.006)	(0.006)
1(family planning clinic in county in 2010) × 1(post-2011)	yes	no	no	no
1(family planning clinic in county)	no	yes	no	no
# of family planning clinics	no	no	yes	no
# of family planning clinics per capita	no	no	no	yes

Notes: Re-estimation Column 1 of Table 2 and Table C1 using alternative controls for access to publicly-funded family-planning clinics. See notes to tables 2 and C1. *, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

Table D4
(Appendix) (Appendix) Sensitivity of estimated effects on abortion rates in Tables 2 and C1 to years and regions included

		Counties excluded		Years included		
	Full Sample	Panhandle	Out-of-State Travel	2012–2014	2012, 2015	2013–2015
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Modeling Effect of Distance as a Step-Function and Effect of ASP as Linear						
I(50< Driving Distance ≤ 100)	-0.179***	-0.180***	-0.178***	-0.140***	-0.150***	-0.128**
	(0.032)	(0.031)	(0.032)	(0.044)	(0.054)	(0.053)
I(100 < Driving Distance ≤ 150)	-0.333***	-0.393***	-0.380***	-0.386***	-0.242***	-0.342***
	(0.090)	(0.088)	(0.098)	(0.144)	(0.053)	(0.121)
I(150 < Driving Distance ≤ 200)	-0.477***	-0.482***	-0.492***	-0.432***	-0.205*	-0.433***
	(0.068)	(0.069)	(0.073)	(0.097)	(0.109)	(0.096)
I(200 < Driving Distance)	-0.588***	-0.444***	-0.449***	-0.760***	-0.444***	-0.480***
	(0.097)	(0.091)	(0.064)	(0.139)	(0.072)	(0.108)
Average Service Population (100,000s)	-0.073**	-0.077**	-0.058*	-0.021	-0.057*	-0.071**
	(0.030)	(0.032)	(0.032)	(0.056)	(0.031)	(0.032)
Panel B: Modeling Effect of Distance and ASP as Quadratic						
Distance (100s miles, driving)	-0.427***	-0.470***	-0.460***	-0.307***	-0.248***	-0.379**
	(0.084)	(0.082)	(0.087)	(0.119)	(0.079)	(0.150)
Distance^2 (100s miles, driving)	0.073***	0.094***	0.096***	0.009	0.040	0.062
	(0.028)	(0.025)	(0.026)	(0.043)	(0.026)	(0.041)
Average Service Population (100,000s)	0.055	0.033	0.077**	0.146**	0.057	-0.002
	(0.039)	(0.043)	(0.037)	(0.071)	(0.062)	(0.065)
Average Service Population^2	-0.022***	-0.018***	-0.022***	-0.036**	-0.019**	-0.012
	(0.006)	(0.006)	(0.005)	(0.014)	(0.008)	(0.010)

Notes: Re-estimation Column 1 of Table 2 and Table C1 using alternative sample restrictions. In this table, Column 2 excludes the Texas panhandle region, Column 3 excludes all counties are those for which an out-of-state abortion clinic is ever the nearest abortion destination, and Column 4 excludes counties that were in the Austin service region in Q2 2013. All columns control for county fixed effects, year fixed effects, demographics, and the unemployment rate. See notes to Table 2. *, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.

Table D5
(Appendix) Sensitivity of estimated effects on abortions by gestational age to using balanced panel

	< 7 weeks	7-12 weeks	>12 weeks
	(1)	(2)	(3)
Panel A: Distance as a Step-Function and Effect of ASP as Linear			
I(50< Driving Distance ≤ 100)	-0.340***	-0.144	-0.215***
	(0.131)	(0.091)	(0.071)
I(100 < Driving Distance ≤ 150)	-0.558	-0.278***	-0.536***
	(0.400)	(0.093)	(0.101)
I(150 < Driving Distance ≤ 200)	-0.814***	-0.361***	-0.617***
	(0.263)	(0.096)	(0.148)
I(200 < Driving Distance)	-0.152	-0.512***	-0.445**
	(0.308)	(0.180)	(0.176)
Average Service Population (100,000s)	-0.128*	-0.017	0.038
	(0.073)	(0.025)	(0.033)
No. of counties	35	35	35
N	242	238	235
Panel B: Distance and ASP as Quadratic			
Distance (100s miles, driving)	-0.769**	-0.265**	-0.545***
	(0.313)	(0.135)	(0.129)
Distance^2 (100s miles, driving)	0.261**	0.012	0.095**
	(0.108)	(0.041)	(0.045)
Average Service Population (100,000s)	0.453***	-0.121	-0.247*
	(0.105)	(0.098)	(0.131)
Average Service Population^2	-0.101***	0.018	0.050**
	(0.017)	(0.016)	(0.020)
No. of counties	35	35	35
N	242	238	235

Notes: Re-estimation columns 3–4 of Table 2 and Table C1 using a balanced set of counties with data on abortions by gestational age in every period. *, **, and *** indicate statistical significance at the ten, five, and one percent levels, respectively.