# The road not taken: How driving distance and appointment availability shape the effects of abortion bans

Daniel Dench[1], Caitlin Myers[2], and Mayra Pineda-Torres[3]

[1]Georgia Institute of Technology
[2]Middlebury College, NBER, and IZA
[3]Georgia Institute of Technology, NBER, and IZA

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**Abstract**

We use difference-in-differences approaches to estimate the effects of abortion bans on county-level births, leveraging changes in driving distance and appointment availability at the nearest facility. The effects of abortion bans operate mainly through distance. In counties where the nearest abortion facility was 50 miles away pre and post Dobbs, a total ban increases births by 0.8-1.0%, but by 2.1%-2.2% if distance rises to 300 miles. Therefore, the effects of distance remain despite expanded logistical, financial, and telehealth support, underscoring the role of geographic barriers on abortion access. We also observe that six-week bans are as impactful as total bans.

**Keywords:** Abortion, Dobbs, Distance, Fertility.
**JEL Codes:** I11, I12, I18, J13, K23.

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# 1 Introduction

The Supreme Court's decision in *Dobbs v. Jackson Women's Health Organization* (2022), which overturned *Roe v. Wade* (1973) and withdrew federal protections for abortion rights, fundamentally reshaped abortion access in the United States. By the end of 2022, 13 states were enforcing near-total abortion bans, increasing driving distance to the nearest abortion facility for millions of women of reproductive age. Past research has shown that driving distance is a significant barrier to abortion access (Quast et al., 2017; Fischer et al., 2018; Lindo et al., 2019; Venator and Fletcher, 2021; Myers, 2024c), and Myers (2024c) predicted that the resulting increases in distance would prevent 21% of residents of ban states from obtaining abortions. However, these projections rely on pre-Dobbs behaviors, and the decision itself may have altered abortion-seeking patterns.

Abortion bans not only shuttered facilities across a wide swath of the country but also catalyzed offsetting measures and expansions of access in the rest of the country. Abortion funds, which provide financial and logistical support, saw an 88% surge in donations in the immediate aftermath of Dobbs, enabling them to distribute $37 million to over 102,000 people—approximately 10% of all abortions in 2023 (NNAF, 2024; Maddow-Zimet and Gibson, 2024). Direct-to-patient telehealth abortion services also rapidly expanded as the number of virtual clinics and telehealth abortions nearly doubled (Society of Family Planning, 2024; Koenig et al., 2024).

These developments likely mitigated the impact of bans while also expanding access in non-ban states where abortion remained protected. Indeed, the Guttmacher Institute (2024) estimates that national abortions *increased* by 11% between 2020 and 2023, challenging the assumption that abortion bans effectively prevent people from obtaining abortions. Yet this national trend likely masks substantial differences across states.

In prior work, we adopted a synthetic difference-in-differences research design using preliminary state-level births for the first half of 2023 and estimated that the average ban increased births by 2.3 to 2.7% relative to a counterfactual in which the ban was not enforced (Dench et al., 2024). However, because this evidence was based on preliminary state-level

data, it offered little ability to disentangle the mechanisms by which abortion bans prevent individuals from obtaining services or to study the continued evolution of the effects of bans. In this paper, we use individual birth records from 2021 to 2024 to disaggregate these effects across counties, allowing us to isolate the role of travel distance and appointment constraints in shaping post-Dobbs birth outcomes.

We construct a panel of county birth rates paired with county-level data on driving distances to abortion facilities and novel measures of appointment availability. We implement a variety of difference-in-differences and event study specifications. These include specifications with state-by-year fixed effects that rely solely on comparisons across counties within each ban state rather than between ban and non-ban states.

Across all specifications, the results confirm that abortion bans prevent some people from obtaining abortions, resulting in an increase in births. Moreover, the results suggest that the effects of bans operate mainly through distance. In counties in ban states that did not experience an increase in distance—places like Kansas City, Missouri, where even before Dobbs the nearest facility was across the border in Kansas City, Kansas—births are estimated to increase by 0.8-1.0% due to the ban. This estimate is somewhat imprecise, but suggests a possible chilling effect potentially due to legal uncertainty, misinformation, or logistical hurdles that are independent of measurable barriers. However, the estimated effects substantially increase with distance. A total abortion ban is estimated to increase births by 2.1%-2.2% in counties in ban states where the nearest abortion facility was 50 miles away before Dobbs and 300 miles away afterwards–the changes in distance experienced by the average resident of a ban state. Appointment constraints may further amplify these effects. If the nearest destination city had unconstrained facilities prior to Dobbs, but all facilities had waits of 2 weeks or more after Dobbs, the estimated effect rises to 3.0-3.1%. However, the average increase in appointment constraints was more modest in most regions following Dobbs, and so it is ultimately increased distance that drove most of the effects of abortion bans in the first two years following Dobbs.

Additionally, we adopt several approaches to assess whether the effects of bans declined in the second year following Dobbs, as appointment constraints eased and telehealth options

expanded. Overall, we do not find evidence that these developments reduced the salience of distance or the overall effects of the bans on births.

Finally, we examine 6-week gestational age limits, which do not impose total bans but effectively prevent abortions after about six weeks of pregnancy. Because most women do not recognize a pregnancy until around five weeks gestational age (McCarthy et al., 2018), these policies leave only a narrow window to detect the pregnancy, decide to seek an abortion, assemble the necessary resources, and obtain care. We find that 6-week bans have effects similar in magnitude to total bans, and that these effects are also primarily mediated by distance.

## 2 Abortion before and after Dobbs

In 2020, the last full year before Dobbs with available estimates, 930,160 people obtained abortions from providers in the formal U.S. healthcare system—approximately one in five pregnancies (Jones et al., 2022).[1] At this rate, approximately 25% of U.S. women would have an abortion in their reproductive lifetimes (Jones, 2024). While available abortion surveillance data include limited demographic information, in a survey of abortion patients conducted between June 2021 and July 2022, 98% were legal adults aged 18 or older, 55% had previously given birth, 69% were non-white, and 70% were low income (Jones et al., 2023). In a 2017 survey, 55% of abortion patients reported at least one disruptive life event in the previous 12 months, such as falling behind on the rent, separating from a spouse or partner, having a partner arrested or incarcerated, or moving multiple times (Jones and Jerman, 2017). Miller et al. (2023) matched abortion patients to their Experian credit reports and observed that 84% had subprime credit scores.

For low-income, credit-constrained people experiencing disruptive life events, the logis-

[1]There are three sources of abortion surveillance data in the United States: The Centers for Disease Control (CDC, 2024), the Society of Family Planning's #WeCount initiative (2024), and the Guttmacher Institute. The CDC data are incomplete due to the lack of a federal mandate for abortion data and are missing information from several states entirely. The #WeCount initiative began collecting data in April 2022 and hence provides limited information on abortions prior to Dobbs in June 2022. It also only tracks abortions by state of occurrence and not by state of residence. We therefore use the Guttmacher Institute surveillance data, which are based on state surveillance augmented with Guttmacher's periodic surveys of abortion providers. We note that the Guttmacher surveillance data do not include direct-to-patient telehealth abortions provided in states where they are restricted, resulting in an undercount of abortions.

tical and financial costs of obtaining an abortion may pose substantial obstacles. This expectation is borne out in the economics literature that exploits various natural experiments to identify the effects of abortion restrictions on abortion and birth rates.[2] Both demand-side policies like parental involvement laws and mandatory waiting periods, and supply-side policies that target abortion facilities and force closures, reduce abortion rates and increase birth rates (Althaus and Henshaw, 1994; Joyce et al., 1997; Joyce and Kaestner, 2000; Levine, 2003; Joyce et al., 2006, 2020; Myers and Ladd, 2020; Quast et al., 2017; Fischer et al., 2018; Lindo et al., 2019; Lindo and Pineda-Torres, 2021; Myers, 2021; Venator and Fletcher, 2021; Altındağ and Joyce, 2022; Jones and Pineda-Torres, 2024; Myers, 2024c).

Driving distance significantly mediates these policy effects. For instance, the fertility effects of Roe were smaller in states near New York. New York had legalized abortion three years earlier and became a destination for thousands of women traveling from nearby states (Joyce et al., 2013). In the decades that followed, parental involvement laws had smaller fertility effects in counties that were near abortion facilities in neighboring states that did not require parental involvement (Myers and Ladd, 2020), and two-trip mandatory waiting period requirements had smaller effects in counties with nearby abortion providers, reducing the travel burdens of two required trips (Myers, 2021).

Studies on driving distance consistently show it is a significant barrier to people seeking abortions (Quast et al., 2017; Fischer et al., 2018; Lindo et al., 2019; Venator and Fletcher, 2021; Myers, 2024c). These studies rely on different natural experiments but reach fundamentally similar conclusions that point to large but diminishing effects of driving distances. For instance, Myers (2024c) estimates that in an increase in distance from a baseline of 0 miles to a new level of 100 miles reduces surveilled abortion rates by 19%, while the next 100 miles increase reduces surveilled abortions by an additional 12.8%.

These drops in surveilled abortions may have been partially offset by individuals accessing abortions outside the formal healthcare system. However, the evidence suggests that these were not viable alternatives for most people unable to navigate increased driving

[2]For reviews of the economics literature on the effects of abortion policies from 1960 through 2020, see Clarke (2024) and Myers (2024a).

distances. Myers (2024c) estimates corresponding increases in births of 2.2% and 1.6%, suggesting about three-quarters of women who were prevented from obtaining an abortion within the formal healthcare system between 2009 and 2020 gave birth as a result. These findings may not apply to more recent years, however, due to a telehealth revolution in abortion provision.

## 2.1 The telehealth revolution

In 2020, procedural abortion, which most commonly involves an aspiration procedure, accounted for 47% of all abortions (Jones et al., 2022). The remaining 53% of abortions were medication abortions, which involve oral ingestion of two drugs: mifepristone, a drug that blocks the action of progesterone and halts the progression of pregnancy, and misoprostol, which induces uterine contractions and expulsion of the pregnancy.

In 2000, the U.S. Food and Drug Administration (FDA) approved mifepristone as an abortifacient, making medication abortion available in the United States. The FDA mandated a Risk Evaluation and Mitigation Strategy (REMS) program for mifepristone, requiring in-person distribution from providers that underwent a complicated certification process and stocked mifepristone at their facilities. These requirements precluded distribution of medication abortion by retail pharmacies or mail (ACOG, 2023) and largely limited it to brick-and-mortar abortion facilities with high enough patient volumes to justify the fixed costs of certification and stocking (Thompson et al., 2021; ACOG, 2023).

Then in July 2020, during the early stages of the COVID-19 pandemic, a court ordered the FDA to temporarily relax the in-person distribution rules for the abortion medication mifepristone, for the first time allowing medication abortion to be prescribed via telehealth and delivered directly to patients by mail, constituting a "telehealth abortion." In December 2021, the FDA updated its guidance and effectively made the provision permanent.

Telehealth services depend on the patient's location, and clinicians are typically licensed in the same state (Cohen et al., 2024). After the FDA allowed telehealth services, U.S. clinicians licensed in states where telehealth was permitted began prescribing them to patients located in those same states. In 26 states and the District of Columbia, where telehealth

services were permitted by state law, already-established brick-and-mortar facilities began offering telehealth services while other providers established new virtual-only clinics (KFF, 2024). The Dobbs decision unintentionally accelerated the expansion of telehealth access in these states as the number of virtual clinics rose from 11 to 20 in 2022 (Koenig et al., 2024) and telehealth abortions nearly doubled, increasing from 13,590 in the second quarter of 2022 to 22,430 in the second quarter of 2023 (Society of Family Planning, 2024).[3]

Telehealth expansion was slower in the remaining 24 states, where physician presence requirements and other laws effectively prohibited it. Fourteen of these states enacted near-total abortion bans in 2022. Aid Access, a major telehealth provider, bypassed the formal healthcare system to provide telehealth abortions in these states by partnering with European physicians and mailing abortion medications from a pharmacy in India. Yet, the pills could take 2 to 4 weeks to arrive from India and clear customs (McCann, 2023; Cohen et al., 2024), a long delay for time-sensitive healthcare.

In the summer of 2023, this situation again changed as U.S. providers began to operate under "shield laws" enacted in six states—California, Colorado, Massachusetts, New York, Vermont, and Washington—and designed to protect licensed clinicians from civil, criminal, and professional consequences for providing telehealth abortion services to patients located in states where telehealth abortion is banned (Cohen et al., 2023, 2024).[4] For instance, under Massachusetts' shield law, a clinician licensed and located in Massachusetts could provide a telehealth abortion to a patient located in Texas, sending abortion medications directly to that patient by mail, which Massachusetts would define as legal under its law and attempt to shield that clinician from any legal action taken by Texas.[5]

In June 2023, Aid Access shifted its model, replacing international shipping with U.S.-based clinicians in shield-law states who prescribed and mailed medications directly to patients (Cohen et al., 2024). Other shield law providers, including Abuzz and the Mas-

[3]The total number of telehealth abortions reported here includes those mailed to recipients in the 27 jurisdictions where telehealth abortion is unrestricted, whether provided by virtual clinics or brick-and-mortar facilities.

[4]The number of shield laws continues to expand, and their provisions vary. For detailed information, consult UCLA Law's State Law Guide (2024).

[5]Shield laws have recently begun to be challenged by ban states. Louisiana filed criminal charges against a New York shield law provider in January 2025 and requested extradition, which New York has thus far refused. Texas issued a civil fine of $100,000 against the same provider in December 2024 (Stengle, 2025).

sachusetts Medication Abortion Project (MAP), also entered the scene in the summer and fall of 2023 (Foster et al., 2024; Belluck, 2024). As they did so, telehealth abortion access likely increased in states where abortion is banned or restricted, as patients were increasingly able to obtain abortion pills from providers within the formal U.S. healthcare system, mailing pills from inside the country that could arrive in days.

### 2.2 The end of distance?

Beginning in the summer of 2023, shield-law provision of medication abortion allowed residents of ban states to obtain telehealth abortions from a provider within the formal U.S. healthcare system within a few days. Not only did this provide an alternative to traveling to a brick-and-mortar facility in another state, but it did so at a substantially lower price. In 2023, the median cost of a medication abortion at a brick-and-mortar facility was $600 compared to $150 via telehealth clinics (Upadhyay et al., 2024).

These reductions in logistical and financial barriers may allow residents of ban states to obtain abortions via telehealth despite the challenge of distance. To the extent that this is the case, the rise of shield-law provisions would meet previously unmet demand for abortion services. However, shield laws may not only expand access but also shift how people obtain abortions. If shield-law telehealth services primarily substitute for travel-based abortions, overall abortion rates would remain unchanged, and the fertility effects of bans would persist. In this scenario, those most affected by distance constraints may still lack viable alternatives, reinforcing the empirical patterns we document in this paper.

## 3 The association between state policy environments and abortions and births

By the end of 2022, 13 states—Alabama, Arkansas, Idaho, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, South Dakota, Tennessee, Texas, West Virginia, and Wisconsin—

were enforcing near-total bans on abortions with very limited exceptions.[6,7] In addition, 13 states that were not enforcing total abortion bans had restrictive abortion policies and were categorized as 'hostile' by organizations such as the Guttmacher Institute (2025) and Center for Reproductive Rights (2025).

States regarded as hostile include those enforcing gestational age bans, the most restrictive of which are 6-week gestational age bans. Pregnancy is dated from the first day of the last menstrual period. For a woman with a 28-day cycle, the earliest she might discover a pregnancy is 28 days gestation, or about 4 weeks. Hence, a 6-week gestational age ban affords about 2 weeks to discover a pregnancy, make a decision, gather resources, and obtain an abortion. In practice, most women discover they are pregnant after 5 weeks gestation (McCarthy et al., 2018), so the window is even more narrow. States classified as hostile may have pending litigation determining future enforcement of a ban or be likely to enact a ban in the future. Indeed, three of the states classified as hostile in 2022—Florida, Iowa, and South Carolina—began enforcing 6-week gestational age bans in 2023 or 2024 (Guttmacher Institute, 2025).

Figure 1 depicts state abortion policies in the contiguous United States as of December 2022 and the corresponding changes in resident abortions and births.[8] Between 2020 and 2023, resident abortions increased 20% in states that protected abortion rights and by 12% in states hostile to abortion but where it remained legal in many circumstances.[9] In contrast, abortions provided to residents of states that banned abortion declined by 32%. Hence, the

[6]State abortion policies and classifications are documented and described more extensively in Appendix Table A.1. All of the 13 total bans have exceptions to protect the life of the pregnant person: 5 have exceptions to protect the health of the pregnant person; 3 have exceptions for cases of rape or incest; and 2 have exceptions in cases of fatal fetal anomalies. Critics argue that exceptions to preserve the life or health of the mother are unworkable in practice due to a lack of specificity regarding clinical conditions (KFF, 2023).

[7]We focus this description on bans enforced in the second half of 2022, from the Dobbs decision in June through the end of the year, because these afford the primary identifying variation for births observed in 2023. In our analyses, we account for subsequent policy changes, which include the imposition of a total ban in Indiana (October 2023) and the invalidation of total bans in North Dakota (September 2024) and Wisconsin (September 2023). In addition, Missouri ceased enforcement of its ban in July 2025, but this is outside our observation window.

[8]Throughout this paper, we focus on the contiguous United States because our primary research question concerns driving distances. The lack of complete road networks connecting cities and towns in Alaska and Hawaii makes driving distances impossible to calculate for many counties. Furthermore, abortion remains legal in both Alaska and Hawaii, and both states are considered protective of abortion rights by the Guttmacher Institute and the Center for Reproductive Rights.

[9]We rely on estimates of state resident abortions published by the Guttmacher Institute (Maddow-Zimet et al., 2024). These estimates are available for 2020 and 2023, but not for 2021 or 2022.

11% increase in abortions observed nationally masks substantial heterogeneity across states. Even as abortions rose in states where it remained legal and telehealth services expanded, they fell dramatically for residents of ban states.

However, this 32% decline in abortions to residents of ban states may be overstated. We rely on abortion surveillance data from the Guttmacher Institute (Maddow-Zimet et al., 2024), which for decades has published the most complete counts of U.S. abortions by augmenting abortion surveillance data with periodic surveys of abortion providers. These data account for interstate travel, so an abortion obtained by a Texas resident in Kansas is included in Texas's resident abortion count. They also capture abortions obtained under telehealth in circumstances where telehealth is legally available in the recipient state. However, these data exclude telehealth abortions provided in states where telehealth is restricted, potentially leading to an overstatement of the abortion decline in ban states.

Birth data do not suffer from any such measurement challenges. Using natality files from the National Center for Health Statistics (NCHS, 2025), which we describe in detail in the following section, we obtain highly accurate counts of state resident births. Despite concerns about abortion undercounting, birth data confirm that ban states saw real fertility effects. Births declined by 4.0% in protective states but increased by 0.6% in ban states, yielding a statistically significant 4.6 percentage points ($p < 0.01$) relative increase in births in states enforcing total bans.

Although these state-level difference-in-differences estimates provide valuable insights, interpretation of the results is complicated by the lack of a control group of states that were not affected by the Dobbs decision. Because Dobbs accelerated telehealth expansion, it may have simultaneously increased abortions in protective states and decreased them in ban states, complicating inference. This divergence suggests bans widened disparities in access but reveals little about how distance and appointment availability shape birth outcomes within ban states.

In this policy context, we use county-level measures of abortion access and births to provide the first empirical evidence on the effects of abortion bans at the county level. We adopt several complementary approaches, including estimating models that rely on variation

in access within ban states rather than a comparison of outcomes between states. Our main analyses allow the effects of abortion bans to vary with distance, appointment availability, and demographics. In doing so, we identify the populations most affected by the barriers imposed by abortion bans in post-Dobbs America.

# 4 Data

We focus on 2021–2024, the period when Dobbs and the subsequent enforcement of near-total bans represented the dominant shock to abortion access, minimizing confounding effects from longer-term policy shifts. Table 1 presents summary statistics by ban status and period, which we discuss further in the next subsections.

## 4.1 Abortion Access

Near-total bans immediately forced all abortion facilities in ban states to cease operations. Even in states where bans were not fully enforced, legal uncertainty disrupted facility operations. For example, nearly all Arizona facilities temporarily suspended services due to confusion over whether the state's pre-Roe ban would be enforced (Healy and Robertson, 2022). The Myers Abortion Facility Database (Myers, 2025) tracks publicly identifiable brick-and-mortar abortion facilities in the U.S. since 2009, capturing facility closures, relocations, and service suspensions.[10] The database also provides county-by-month driving distances measured between the population centroid of each origin county and the geographic coordinates of the nearest destination abortion facility in operation on the first day of each month.

Table 1 presents summary statistics by abortion ban states and time period. For clarity of presentation, we categorize all states as either "Total-ban states" or the rest of the country, according to the enforcement of a total abortion ban at any time in the post-Dobbs period.

[10] "Publicly identifiable" implies that a person seeking an abortion could identify that this facility provides them through an internet search or telephone directory. It does not include any healthcare providers that may offer abortion services but do not advertise or acknowledge this publicly. The database also does not track virtual-only providers that lack a physical presence.

We categorize time periods as "Before" (2021–2022) or "After" (2023–2024) Dobbs.[11] After Dobbs, the 34.3 million women of childbearing age living in ban states experienced an increase in the average distance to the nearest abortion facility from 46.8 miles to 279.7 miles.[12] In comparison, the 96.4 million women of childbearing age residing in the rest of the country faced lower distances even before Dobbs—an average of 16.9 miles—and this increased only slightly, to 17.4 miles in the post-Dobbs period.[13]

We additionally use the abortion facility database to calculate driving distance from the population centroid of each county to the nearest abortion facility that is not subject to a 6-week ban ("Distance 6-weeks"). If the nearest facility is not subject to a 6-week ban, then this value is identical to the distance to the nearest facility. However, if the nearest facility is subject to a 6-week ban, then this value will be greater than the distance to that facility. As shown in Table 1, in our pre-Dobbs period, the average resident of the United States was 24.7 miles from the nearest facility, but 34.6 miles from the nearest facility not subject to a 6-week ban. This difference is due to the fact that Texas began enforcing Texas SB8, a de facto 6-week ban, in September 2021. Our analyses capture this variation in enforcement.

Beyond increasing travel distances, Dobbs indirectly reduced access by overwhelming abortion facilities in destination states, as surging out-of-state demand strained capacities. We rely on novel data from the Abortion Appointment Availability Survey (Myers, 2024b) to measure appointment availability in the nearest destination facility. This survey uses a mystery-shopper approach to contact all facilities in the Myers Abortion Facility Database. Surveyors request information about the next available appointments for medication and procedural abortions. In this analysis, we rely on the soonest available appointment of either type to measure availability. The first survey was conducted in March 2022, and the surveys continue on an irregular basis.[14] For each origin county in the contiguous United States, we

[11] These time periods measure when births occurred. Other than births, all the variables are reported with a six-month lag, and therefore relevant time periods for these variables are July 2020-June 2022 for the "Before" period and July 2022-June 2024 for the "After" period.

[12] The 279.7 estimate includes states that enforced bans for only part of the post-period, like Wisconsin, during the enforcement of bans, the miles are closer to 300 miles.

[13] Summary statistics in Table 1 are population-weighted, meaning they reflect the average distance faced by a typical woman aged 15–44 in each policy environment (ban vs. non-ban states).

[14] To date, surveys were conducted in March, June, July, August, September, and December 2022; April and September 2023; January, April, July, and October 2024; and January, April, July, and October 2025. We use linear interpolation for missing months.

measure appointment availability in the nearest Core-Based Statistical Area (CBSA) with an operating abortion facility.[15] The appointment constraint variable measures the share of facilities in a woman's nearest destination city that could not offer an appointment within two weeks at the time of survey.[16]

To illustrate how appointment constraints are measured, take the case of Wichita, Kansas, where two abortion facilities were in operation in December 2022. When contacted in the first week of December, both facilities told the caller that their schedules were full and no appointments were available. As a result, for all counties for which Wichita was the nearest abortion destination in December of 2022, *appointment constraint* is equal to 1, indicating that all of the facilities in their nearest destination were appointment constrained. As another example, in December 2022, Tallahassee, Florida, had two abortion facilities. One offered an appointment in 8 days; the other had a 34-day wait. Thus, appointment constraint is 0.5 for all counties where Tallahassee was the nearest destination—indicating that half of the facilities lacked timely availability.

Figure 2 depicts the trend in constrained appointment availability for residents of states enforcing total bans in December 2022 and the rest of the country. In March 2022, the first pre-Dobbs observation, the average resident of states that would soon ban abortion faced appointment constraints at 39.7% of destination facilities, compared to 23.7% for residents of the rest of the country. This pre-Dobbs difference could be attributed to Texas' 6-week gestational age ban, which had already taken effect in September 2021 and was likely already creating capacity constraints in neighboring states. By December 2022, when 13 states were enforcing total bans, appointment constraints increased further, to 54.4% for residents of ban states and 29.4% for residents of the rest of the country. However, these constraints eased in 2023 as brick-and-mortar facilities opened and expanded capacity in key destinations and as telehealth came online and reduced demand for in-person services. As a result, by our last observation in October 2024, constraints had declined to 17.0% for

[15] A small number of abortion facilities are in counties that are not part of a CBSA. In this case, we treat the facility's county as the destination.

[16] Although the database includes the exact number of days until the next available appointment, constrained facilities often inform callers that no appointment can be scheduled at all. Given this outcome, we choose to measure whether a timely appointment is available rather than use an alternative measure, such as the mean number of days until the next available appointment.

residents of ban states and 16.0% for the rest of the country, lower than even the period immediately preceding Dobbs.

### 4.2 Births

We rely on individual birth records from the NCHS with restricted-use county identifiers to measure the number of births at a county-by-month level in aggregate and disaggregated by various demographic characteristics reported on the birth certificates (NCHS, 2025). We construct birth rates by dividing county-level births by population estimates for women of reproductive age, stratified by sex, race, and single year of age, as reported by the Surveillance, Epidemiology, and End Results Program (SEER, 2025).

County-level abortion rates are incomplete pre-Dobbs and entirely unavailable post-Dobbs (see, e.g., Myers, 2024c). As a result, our analysis focuses solely on birth outcomes.

### 4.3 Controls

Table 1 summarizes the additional controls used in the analyses that follow. These controls include county-by-year demographic measures for the racial, ethnic, and age composition of women of childbearing age (SEER, 2022) and economic conditions associated with fertility using annual county-level estimates of unemployment published by the Bureau of Labor Statistics (2025) and annual county-level estimates of poverty rates published by the Census Bureau's (2022) Small Area Income and Poverty Estimates (SAIPE) program (2024). These demographic and economic conditions have evolved similarly over time across ban and non-ban states.

## 5 Descriptive Evidence

### 5.1 The effect of increased distance

Figure 3 illustrates total state abortion bans enforced as of the end of 2022, facility closures, and resulting county-level changes in distances between March and December of that year.

The magnitude of distance increases varied substantially both across and within ban states, driven by pre-Dobbs facility locations and proximity to out-of-state abortion facilities. For instance, every parish in Louisiana, a state with a total abortion ban and surrounded by other ban states, experienced an increase in distance exceeding 200 miles. In contrast, most Missouri counties saw little to no increase in driving distance following its ban. This is because prior to Dobbs, Missouri had only a single abortion facility, and it was located in St. Louis near the Illinois border. When this facility stopped providing abortions, the nearest destinations were about 10 miles farther away in Illinois. Meanwhile, Missouri residents in the Kansas City area had been traveling to facilities in Kansas before Dobbs, and the ban did not change this situation.

If distance remains a salient dimension of abortion access, then the variation in the distance shocks illustrated in Figure 3 would suggest that bans may have very different effects across counties. This hypothesis is supported by the descriptive evidence on changes in births that accompanies the map. The bar chart illustrates the change in births in counties in ban states relative to non-ban states. Between 2021 and 2023, counties in ban states in which distance increased by less than 10 miles due to Dobbs experienced a 1.0 percentage point increase in births ($p = 0.03$) relative to counties in non-ban states. These results suggest that abortion bans deter some individuals from seeking abortions, even when distance remains unchanged. However, distance plays a critical role: counties with larger distance shocks saw progressively larger increases in births. Relative to counties in non-ban states, births increased by 1.6 percentage points ($p = 0.01$) in counties where distance increased by 10–100 miles, 3.3 percentage points ($p < 0.01$) in counties where distance increased by 100–200 miles, and by 4.9 percentage points ($p < 0.01$) in counties where distance increased by more than 200 miles.

## 5.2 The effect of constrained appointment availability

Figure 4 extends the previous exercise by adding a second dimension of access: appointment availability. This bivariate choropleth highlights counties where abortion access was most restricted, capturing both travel burdens and facility congestion. The map shows

which counties faced the largest increases in distance and which had the most constrained appointment availability at the nearest destination by December 2022. Shading is used to highlight counties for which more than one-third of facilities in the nearest destination did not have appointments available within two weeks in December of 2022.

Counties experiencing the greatest barriers to abortion access—marked in dark green—faced both large travel burdens and constrained appointment availability. These include eastern and northern Texas, Oklahoma, and western Louisiana and Arkansas, where residents had to travel over 100 miles to reach highly congested clinics in Kansas. Southern Louisiana, Alabama, and Mississippi were similarly affected, as their nearest destinations—facilities in northern Florida—were also highly constrained. In contrast, other regions of ban states were less impacted. Counties in eastern Missouri experienced little to no increases in travel distances, and in nearby southern Illinois, facilities were expanding, and appointments were unconstrained.

As shown in Figure 4, the variation in births within ban states is associated with appointment constraints in addition to increased distance. In counties where abortion was banned but distance remained unchanged, births trended similarly to the non-ban states (-0.1 percentage point change, $p = 0.94$) if appointments were unconstrained. However, when appointments were constrained, births increased by 1.9 percentage points ($p < 0.01$) relative to non-ban states—suggesting that appointment constraints, independent of driving distance, significantly limited abortion access.

In counties where abortion was banned and distance increased by more than 100 miles, births increased by 3.7 percentage points ($p < 0.01$) if appointments were constrained and by 4.9 percentage points ($p < 0.01$) if appointments were not constrained, relative to non-ban states.[17]

Overall, birth trends suggest that the effects of bans depend not just on driving distance, but also on the availability of appointments at destination facilities.

[17] The 1.2 percentage point difference is statistically significant ($p = 0.03$).

# 6 Empirical method

To estimate the effect of abortion bans as mediated by travel distances and appointment availability, we aggregate the data to a full-year panel and implement difference-in-differences designs that exploit spatial and temporal variation in abortion access. Given that birth counts are discrete, non-negative, and sometimes zero, we use pseudo-maximum likelihood Poisson models. Our model takes the following form:

$$E\left[births_{c,s,t} \mid \cdot\right] = \exp\Big(\beta_b\, ban_{s,t-1} + \beta_d\, dist_{c,s,t-1} + \beta_{dd}\, dist^2_{c,s,t-1} + \beta_a\, appt_{c,s,t-1} + \beta_{b6}\, 6week\ ban_{c,s,t-1} + \boldsymbol{x}'_{c,s,t-1}\boldsymbol{\gamma} + \ln(pop_{c,s,t}) + \upsilon_c + \upsilon_t\Big) \tag{1}$$

where $births_{c,s,t}$ is the total number of births in county $c$ in state $s$ in year $t$. To account for the gestation period, we model births in year $t$ as a function of explanatory variables averaged over the preceding July to June period, which we index as $t-1$. This means, for instance, that births observed in county $c$ in 2023 are modeled as a function of explanatory variables averaged over July 2022 through June 2023.

We capture abortion access with three variables: $\text{ban}_{s,t-1}$ measuring the exposure to a total abortion ban in state $s$ at time $t-1$; $\text{distance}_{c,s,t-1}$ measuring the distance to the nearest abortion facility in county $c$, state $s$, at time $t-1$; and, $\text{appt}_{c,s,t-1}$ measuring the fraction of facilities in the nearest destination city that had no appointments available within two weeks at time $t-1$. We model distance quadratically to capture its diminishing marginal effects, as documented in prior studies (Fischer et al., 2018; Lindo et al., 2019; Venator and Fletcher, 2021; Myers, 2024c).

The variable $6week\ ban_{c,s,t-1}$ measures exposure to a state-level 6-week gestational age ban. Gestational age bans are documented in Appendix A. In our study period, 6-week bans were enforced in Georgia beginning in July 2022, in South Carolina beginning in August 2023, and in Texas, which enforced SB8 from September 2021 until it was replaced with a total ban in August 2022. Finally, Florida implemented its 6-week gestational age ban in May 2024, and so it is relevant for 2 months in our analysis of births. Given the limited

variation in the enforcement of 6-week bans, we focus our primary analysis on the effects of total bans. However, we return to analyze the effect of these bans directly in subsection 7.4.

The vector $\boldsymbol{X}_{c,s,t-1}$ includes an intercept and controls for county-level unemployment and poverty rates, which are interacted with time period effects to allow the effect of these variables to vary by time. This vector also includes the percentage of women aged 15-44 categorized by race/ethnicity and five-year age groupings, interacted with time fixed effects to allow national shocks in birth outcomes to vary across detailed demographic groups. We include the population of women for the relevant age group, $pop_{c,s,t}$, as the exposure variable.[18]

All models include county fixed effects, $\upsilon_c$, which control for unobserved county characteristics with time-invariant effects on birth rates, and period fixed effects, $\upsilon_t$, which control for national shocks affecting birth rates similarly across all counties. We report two alternative clustering levels for our standard errors: county-level clusters and state-level clusters, each of which allows for arbitrary serial correlation within the corresponding geographic unit (Bertrand et al., 2004).

In Appendix B, we demonstrate that the results are robust to a variety of alternative specifications and sample selection criteria, including an analysis with aggregated data at the monthly level (Table B.1), omitting various sets of controls (Table B.2-B.3). We also demonstrate that the results are robust to omitting Texas from the analysis (Table B.4), assuaging concerns that its enforcement of a 6-week gestational age ban prior to Dobbs may drive the overall results. Finally, we also demonstrate that the results are robust to substituting Ordinary Least Squares (OLS) models with the log birthrate as the outcome for our preferred Poisson specification, and that this is true regardless of whether one estimates population-weighted models (Table B.5) or unweighted models (Table B.6).

The identification of the average treatment effect (ATT) relies on the common trends assumption. In this context, this requires assuming that, absent changes in abortion access,

[18]The exposure variable in this model acts as a scaling factor for the dependent variable. It represents the "amount of exposure" to the event being counted, aiming to adjust for differences in the amount of opportunity for an event to occur across the units of observation, in this case, counties. Algebraically, by including the log of the corresponding population and constraining its coefficient to be equal to 1, this is equivalent to having births as a ratio of the population of women as the dependent variable.

births would have trended similarly across counties if not for treatment. This assumption would be threatened if, for instance, changes in abortion access were driven by underlying changes in demand for abortions that are not explained by the controls.

Several points should mitigate this concern. First, our analysis spans a short period of time, with births observed from January 2021 through December 2024 explained by changes in abortion access from July 2020 through June 2024. These changes in abortion access were sudden and nearly entirely driven by the release of the Supreme Court's decision in Dobbs, a plausible shock allowing long-standing trigger bans to take immediate effect and suddenly close facilities. We also estimate specifications that include state-by-time fixed effects and, therefore, rely on variation in access that occurs within rather than between states to identify the effects of distance and appointment availability. This eliminates the possibility of contaminating statewide shocks to births, and the resulting estimated effects of distance and appointment availability are quite similar to the results of the primary specifications.

In addition, we assess whether the effects of bans change over time, particularly as telehealth access expands. To do so, we implement synthetic difference-in-differences (SDiD) event studies, which allow us to evaluate pre-trends and dynamic treatment effects. We implement SDiD event study specifications using weighting procedures as outlined in Arkhangelsky et al. (2021) and estimation procedures outlined in Clarke et al. (2024). We implement this approach for logged state-level birth rates as an outcome. This involves a replication and extension of our prior work in Dench et al. (2024), with the key differences that we can now include 2024 birth data to explore the possibility that the effects of bans declined as shield laws took effect.[19]

Finally, to more fully assess the effects of 6-week bans, we also estimate the following

[19]There are two additional differences in these analyses. First, in our earlier work, we categorized Wisconsin as a ban state because all of the state's abortion facilities ceased services in June 2022 in response to the threatened enforcement of an extant ban pre-dating *Roe*. However, following a judicial ruling that enjoined enforcement, Wisconsin facilities began to reopen in September 2023. In our new analysis, we instead exclude Wisconsin. Appendix Figure B.3 demonstrates that the results are substantively the same if we instead include it as a ban state. Second, in our earlier work, we used level birth rates as an outcome. Here, we use log rates to ease the comparability to the Poisson estimates in the county-level models. Appendix Figure B.4 and Figure B.5 demonstrate that the results are substantively the same if we use level birth rates as an outcome.

specification:

$$E\left[births_{c,s,t} \mid \cdot\right] = \exp\Big(\beta_b\, ban_{s,t-1} + \beta_d\, dist_{c,s,t-1} + \beta_{dd}\, dist^2_{c,s,t-1} + \beta_a\, appt_{c,s,t-1} + \beta_{b6}\, 6week\ ban_{c,s,t-1} + \beta_{6d}(dist6wk_{c,s,t-1} - dist_{c,s,t-1}) + \beta_{6dd}(dist6wk_{c,s,t-1} - dist_{c,s,t-1})^2 + \boldsymbol{x}'_{c,s,t-1}\boldsymbol{\gamma} + \ln(pop_{c,s,t}) + \upsilon_c + \upsilon_t\Big). \quad (2)$$

This specification augments the baseline model by distinguishing counties in which a 6-week ban constrains the nearest facility. In such counties, individuals who learn of a pregnancy after six weeks must travel an additional distance, $(dist6wk_{c,s,t-1} - dist_{c,s,t-1})$, to reach a facility that is not subject to such a ban. The coefficients on this difference (and its square), therefore, capture the incremental effect of that additional travel requirement when the nearest facility is subject to a 6-week threshold.

# 7 Results

## 7.1 Primary specification

Panel A of Table 2 reports coefficients from our primary specification (Equation 1), a two-way fixed effects Poisson model estimated using annual county-level births observed from 2021 to 2024. To aid interpretation, Panel B presents the implied marginal effects of abortion bans for three distance changes: from 0 to 10 miles, from 10 to 50 miles, and from 50 to 300 miles—the latter reflecting the average change in distance experienced by residents of ban states. We report clustered standard errors at the county (in parentheses) and state (in square brackets) levels for both panels.[20]

Column 1 presents the results of the most parsimonious model, where we estimate the effect of a total ban using an indicator variable, without controlling for the mediating mechanisms of distance to the nearest abortion provider or appointment constraints. The results suggest that the average total abortion ban increases births by 1.57% ($p < 0.01$).[21]

[20] In the text, we report $p$-values based on county-clustered standard errors and note when statistical inference differs under state clustering.

[21] Marginal effects in Column 1 are calculated as $100 \times (\exp(\beta_b) - 1)$, with standard errors constructed

In Column 2, we add travel distance to distinguish the direct effect of state-level bans from the barriers created by increased travel requirements. In this model, any effect of bans that operates independently of distance is captured by the coefficient on *ban* and identified by comparing changes in births in counties in the ban states that did not experience distance changes to those where bans were not enacted. In addition, the effects of distance are primarily identified by comparisons across counties within ban states since most distance changes occurred within these states.

The results indicate that the effects of bans operate largely through increases in distance to the nearest abortion facility. In counties where distance did not change, total abortion bans are estimated to increase births by 0.8% ($p < 0.01$ for county-clustered standard errors and $p < 0.1$ with state-clustered standard errors). The estimated effect increases with the size of the change in distance. A ban that raises distance from 10 to 50 miles is associated with a 1.15% increase in births ($p < 0.01$), while a ban that raises distance from 50 to 300 miles increases births by 2.06% ($p < 0.01$).[22] The latter change in distance approximates that experienced by the average resident of a ban state.

To further illustrate the mediating role of distance, Figure 5 uses the Column 2 estimates to illustrate the effect of a total abortion ban on births by the resulting change in distance. This is calculated for a county that was 50 miles from the nearest abortion facility prior to the ban. This figure shows a positive but diminishing marginal effect of distance on births, confirming the findings from prior studies (Fischer et al., 2018; Lindo et al., 2019; Venator and Fletcher, 2021; Myers, 2024c).

In Column 3, we add our measure of appointment constraints as an additional channel through which bans may affect births. This variable captures the share of facilities in the nearest destination city that do not have appointments available within 2 weeks. In the most extreme scenario in which a ban causes all facilities in the nearest destination city to have no available appointments within two weeks, births are predicted to increase by 0.9% ($p < 0.01$) as a result of the lack of appointment availability. The estimated effects of bans

using the delta method.

[22] Marginal effects in Column 2 are calculated as $100 \times (\exp(\beta_b + \beta_d \Delta Distance + \beta_{dd} \Delta distance^2) - 1)$. The average woman of childbearing age experienced an increase in distance from approximately 50 to 300 miles as a result of a total ban.

and changes in distance remain similar to those in Column 2. For example, the average ban increasing distance from 50 to 300 miles is estimated to cause a 2.17% ($p < 0.01$) increase in births relative to 2.06% estimated in Column 2.

In Columns 4 and 5, we introduce state-by-year fixed effects to account for statewide shocks that may simultaneously affect births and abortion access. This specification exploits within-state variation in distance changes, allowing for a cleaner causal interpretation of the estimated effects of distance and appointment constraints. Because these fixed effects are perfectly collinear with the enforcement of total and 6-week bans, we exclude these terms from the model. These estimated effects of distance on births are quite similar to those in the previous models, supporting a causal interpretation.

The estimated effect of appointment constraints, however, is substantially smaller once state-by-year fixed effects are included (Column 5), falling to 0.52% ($p = 0.05$). However, we also note the imprecision in the estimated effects of appointment constraints, which may be due to measurement error. Unlike distance, which is measured precisely based on facility operations by date, appointment availability relies on periodic survey snapshots beginning in March 2022, and we rely on linear interpolation to fill in missing months. Such measurement error may attenuate the estimates. Overall, while appointment constraints likely present obstacles to abortion access, their estimated effects are less robust and more sensitive to model specification than those of travel distance.

In subsection B.1, we report results from several robustness checks to the estimates in Table 2. These include specifications estimated at a monthly rather than yearly level (Table B.1), that exclude economic and demographic controls (Table B.2–Table B.3), that exclude Texas (Table B.4), and OLS specifications with and without population weights (Table B.5–Table B.6). We additionally present a semi-parametric specification of distance (Figure B.1) and a placebo-in-time analysis (subsection B.2). The results robustly support the conclusions that abortion bans increased births and that distance served as the primary mediator.

We also explore heterogeneous effects by population subgroup (Figure 6) of the average abortion ban (i.e., assumes an increase in distance from 50 miles pre-ban to 300 miles post-

ban). Overall, these estimates suggest that the changes in births may be concentrated among less educated women. The patterns by race, age, marital status, and parity are less clear. Nonetheless, these estimates lack precision to confidently conclude whether there are differences in the effects on births across demographic groups.

## 7.2 Spatial heterogeneity in the effects of abortion bans

Our findings suggest that abortion bans may have a modest effect operating independently of distance, but that their primary impact operates through increases in travel distance, with additional—though limited—amplification when appointments are constrained at the destination. To quantify this relationship, we use county-level changes in distance from Figure 3 and estimates from Table 2 Panel A Column 2 to predict the relative change in births in each county affected by a ban. These predictions are illustrated in Figure 7, which shows that the increase in births varies substantially across and within ban states.

For example, we estimate that Missouri's ban resulted in a 1.1% increase in births in St. Louis and a 1.6% increase in Kansas City, Missouri. Both cities experienced minimal changes in distance: the Kansas City facilities had been located across the border in Kansas before Dobbs, while there were two large facilities in Illinois just 10–15 miles away from St. Louis. But whereas the Illinois facilities had ample capacity and no evidence of appointment constraints, the Kansas facilities initially struggled to meet the surge of demand from interstate travel generated by Dobbs, and did not have appointments available within two weeks in initial surveys following the enforcement of bans in Texas.

The effects were much larger in counties experiencing large changes in distance. We estimate that births increased by more than 3% in cities like Austin, Houston, and San Antonio, Texas, where local abortion facilities closed, and residents were forced to travel hundreds of miles.

## 7.3 Dynamic treatment effects of abortion bans on births

We use an SDiD approach to estimate the dynamic effects of state abortion bans on births. This allows us to test whether birth rates in ban states followed different pre-Dobbs trends

than those in other states, as in our earlier work in Dench et al. (2024), and to examine how effects evolved in the first two years post-Dobbs.

Figure 8 presents event study estimates of annual log birth rates obtained using the doubly robust difference-in-difference procedure suggested by Arkhangelsky et al. (2021). Because this estimator is designed for linear models with binary and absorbing treatments—meaning that once a unit is treated, it remains treated—we simplify our preferred treatment definitions to a binary "ban" versus "protected" categorization, excluding Wisconsin from the analysis because of the resumption of abortion services in late 2023. Further, as with the original design in Dench et al. (2024) we do not include Texas to present our primary event study results since SB8 went into effect in September 2021.

This figure indicates that abortion bans increased births by 2.3% in 2023 and 2.4% in 2024, suggesting little to no decline in effects in the second full year following Dobbs. The confidence intervals widen in 2024, suggesting the possibility of increased heterogeneity in treatment effects. The evidence in this figure supports that the expansions in telehealth did not cause a reduction in the effects of bans on births in 2024.[23]

## 7.4 Accounting for 6-week bans

To this point, our analyses have accounted for 6-week gestational age bans with a variable indicating enforcement by state of residence. Column 1 of Table 3 illustrates that the coefficient on this variable is similar in magnitude to the coefficient on the total ban indicator.[24] This similarity suggests that the average 6-week ban increases births by roughly the same amount as near-total bans. In turn, this implies that the marginal pregnant person who is prevented from obtaining an abortion under a near-total ban is similar to the marginal person prevented under a 6-week ban.

[23] In subsection B.3, we present further robustness checks. Figure B.3 re-estimates the SDiD model treating Wisconsin as a ban state, Figure B.4 uses the level birth rate as the outcome, and Figure B.5 applies both modifications. All three produce patterns similar to those in Figure 8, reinforcing the robustness of our results. As an alternative approach to assessing dynamic treatment effects, Table B.7 presents estimated effects from our primary specification (Table 2), but estimates separate models observing the post-treatment period in 2023 (Panel A) and 2024 (Panel B). Overall, both panels show similar estimated effects of bans, distance, and appointment constraints on births as those we document in Table 2, further supporting the conclusion that there is not yet evidence that the effects of bans have attenuated.

[24] Column 1 of Table 3 is the same specification as reported in Column 1 of Table 2. We repeat it for ease of reference as we further expand the model to account for the effects of 6-week bans.

As discussed in section 3, a 6-week ban affords at most 2 weeks to discover a pregnancy, make a decision, gather resources, and obtain an abortion. People who obtain abortions later in pregnancy disproportionately report recent disruptive life events (Jones and Jerman, 2016), which are also likely to make long travel distances more burdensome. Thus, the same underlying constraints—delays in recognizing pregnancy, life instability, and sensitivity to travel barriers—can plausibly generate similar marginal populations under both 6-week and near-total bans.

In this case, measuring distance to the nearest abortion facility, as we do in all specifications thus far, is missing a potentially important factor, namely, whether the destination facility is legally permitted to provide abortions beyond 6 weeks. In Column 2 of Table 3, we present estimates of Equation 2, which adds controls for the additional distance a person seeking an abortion would have to travel beyond the nearest facility to reach a facility not subject to a 6-week ban. In most cases, this difference is zero because the nearest facility is not subject to a 6-week ban. But in instances where it is, this difference is positive.

The results suggest that 6-week bans may function quite similarly to total bans. Compare two scenarios, one in which a state enacts a total ban that increases distance to the nearest abortion facility from 0 to 200 miles, and another in which a state enacts a 6-week gestational age ban that increases distance to the nearest facility able to provide abortions beyond 6 weeks from 0 to 200 miles. The estimates in Column 2 suggest that the first will increase births by 2.2% ($p < 0.01$), while the second will increase births by 1.8% ($p < 0.01$).[25]

Finally, in Column 3, we report results in which we omit the controls for state-level bans, allowing the effects of distance to be identified by comparisons between counties in ban and non-ban states. This substantially reduces multicollinearity between the explanatory variables and increases the identifying variation in the model, particularly for the states enforcing 6-week bans, which afford us relatively less variation in distance shocks than the total-ban states. The results continue to support the conclusion that 6-week bans pose substantial barriers, and additionally suggest that distance is also a key mediating factor.

To illustrate, consider two southern cities: Memphis, Tennessee, and Mobile, Alabama.

[25]The effect of the total ban is calculated as $100 * (exp(0.0084 + 0.0092 * 2 - 0.0012 * 2^2) - 1)$. The effect of the total ban is calculated as $100 * (exp(0.0208 - 0.0016 * 2 + 0.0002 * 2^2) - 1)$.

Both Alabama and Tennessee enforced total abortion bans shortly after Dobbs, shuttering abortion facilities in each city. Consequently, both cities experienced similar increases in distance to the nearest abortion facility: residents of Memphis rerouting 226 miles to Carbondale, Illinois, and residents of Mobile rerouting 251 miles to Tallahassee, Florida. Model 3 in Table 3 predicts that these changes in driving distance produced similar increases in births in each city: 1.8% in Memphis and 1.9% in Mobile.[26]

In May 2024, Florida began enforcing a 6-week total ban, causing Tallahassee to become unavailable for residents of Mobile seeking abortions beyond 6 weeks. Now the nearest destination for these services was in Asheville, North Carolina, raising the distance Mobile residents would need to travel from 251 miles to 542 miles. Applying the estimates from Column 3, this additional constraint in Florida substantially increased the effect of Alabama's total ban: the implied increase in births in Mobile rises from 1.9% to 3.2%.[27]

# 8 Conclusion

Although abortions have risen by 11% since Dobbs overturned Roe v. Wade, this increase does not imply that all individuals can circumvent the bans. Our findings highlight growing inequality in abortion access post-Dobbs. Rising abortion rates in states where the procedure remains legal mask the sharp decline in access for residents of ban states.

Using county-level births linked to detailed data on facility operations and appointment availability, a clear picture emerges: Distance to the nearest abortion facility is the primary mediator of the effect of abortion bans, with the implication that the effects of bans vary across and within ban states. Counties that experience the largest increase in distance also exhibit the largest estimated increases in births. Constraints on appointment availability at brick-and-mortar facilities may further amplify the effects of bans, especially in the immediate aftermath of Dobbs, though these estimates are less precise due to data limitations and the fading of appointment constraints in periods further away from the immediate aftermath

[26] For Memphis, this is calculated as $100 * (exp(0.0111 * 2.26 - 0.0014 * 2.26^2) - 1)$. For Mobile, this is calculated as $100 * (exp(0.0111 * 2.51 - 0.0014 * 2.51^2) - 1)$.

[27] This is calculated as $100 * (exp(0.0111 * 2.51 - 0.0014 * 2.51^2 + 0.0088 * (5.42 - 2.51) - 0.0015 * (5.42 - 2.51)^2) - 1)$.

of Dobbs.

We also find that 6-week bans may contribute as much to increases in births as total abortion bans themselves, and that here too the primary mediator of the effect is distance to a facility not subject to a 6-week ban. This suggests that the marginal person who is prevented from obtaining an abortion under a total ban is similarly constrained under a 6-week ban—likely because the same factors that delay abortion seeking, such as financial constraints and disruptive life events, also make long-distance travel particularly burdensome. This finding also highlights an added complexity of the current access landscape: residents of total-ban states whose nearest out-of-state facilities fall within 6-week ban states—such as much of Alabama and parts of Mississippi and Tennessee—must travel even farther to reach a state without any ban, compounding the effects of their own states' total bans.

Finally, the findings suggest that despite rapid expansions in telehealth access under shield laws, distance remained a persistent barrier for many residents of ban states. The estimated effects of bans did not markedly decline in the second full year after Dobbs. While shield laws and telehealth options have eased access for some residents of ban states, these results suggest that, thus far, they have primarily benefited those who would have traveled for abortion services anyway, leaving others unable to overcome the barriers of distance. These findings underscore that despite rapid policy changes, abortion bans continue to impose substantial and deeply inequitable burdens, disproportionately affecting vulnerable populations.

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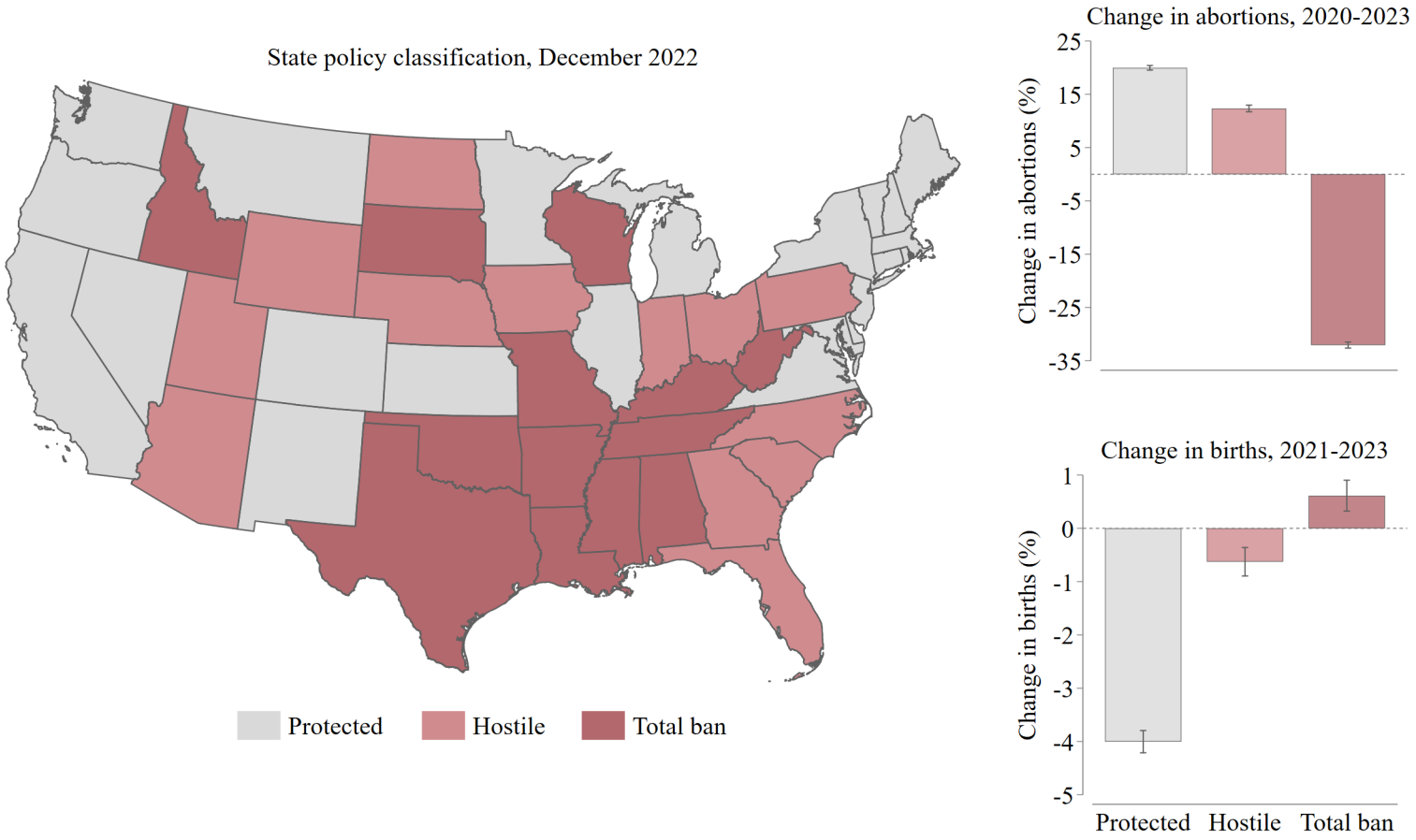
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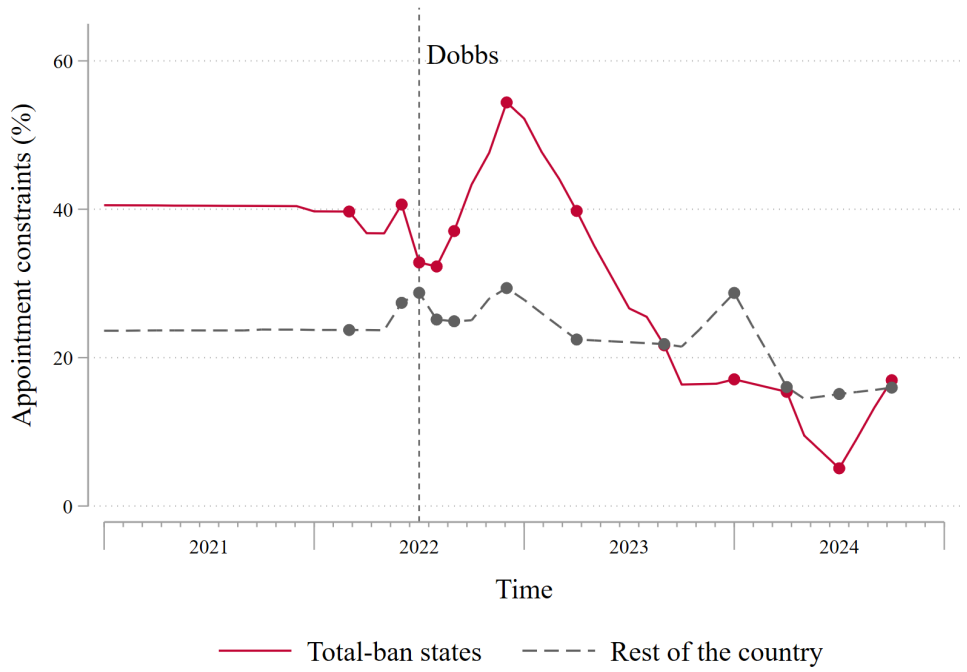
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Figure 1: Total abortion bans correlate with a decline in resident abortions and an increase in births



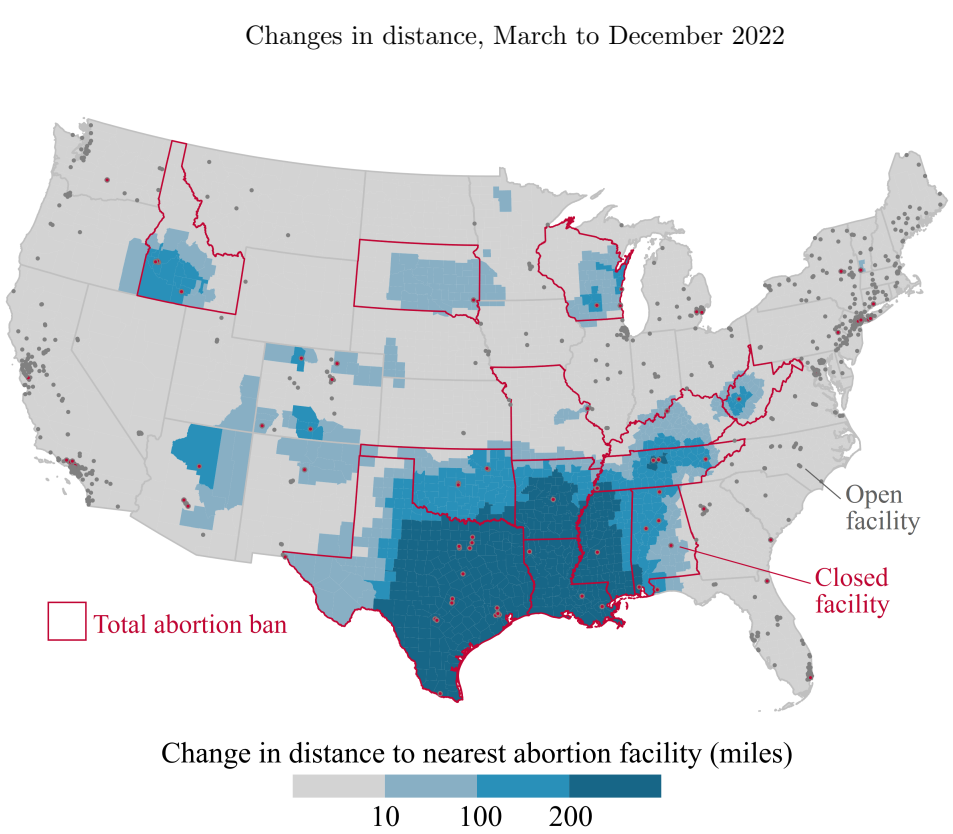

Notes: State policy classifications are described and documented in Appendix A. Resident abortions are estimated by the Guttmacher Institute in 2020 and 2023 (Maddow-Zimet et al., 2024); estimates for 2021 and 2022 are not available. Resident abortion counts capture abortions by state of residence, accounting for interstate travel but not for shield-law provision. Resident births are calculated by the authors using all-county natality files (National Center for Health Statistics, 2025). Bars represent 95% confidence intervals based on Poisson models of abortion and birth counts.

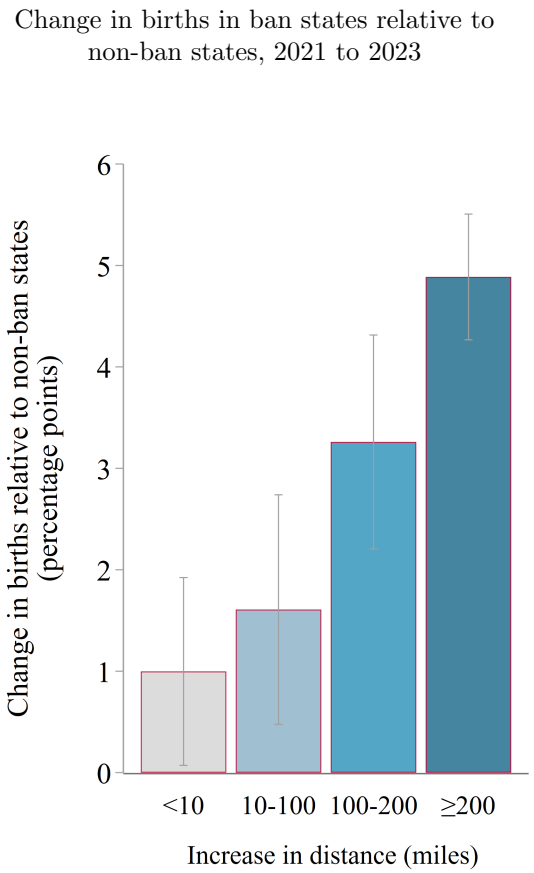
Figure 2: Trend in appointment constraints




Notes: The y-axis measures the percent of abortion facilities in the nearest destination city that do not have an appointment available for an abortion of any type, medication or procedural, without two weeks. The trends are population-weighted means for each origin county in the contiguous United States, meaning they can be interpreted as appointment constraints faced by the average woman of childbearing age. Trends are presented for counties in states enforcing total abortion bans in December 2022 ("Total-ban states") and the rest of the country. Dots indicate months in which surveys of appointment availability were conducted. Appointment availability in between these months is interpolated. The first survey was conducted in March 2022. Source: Own elaboration using information from Myers (2024b).

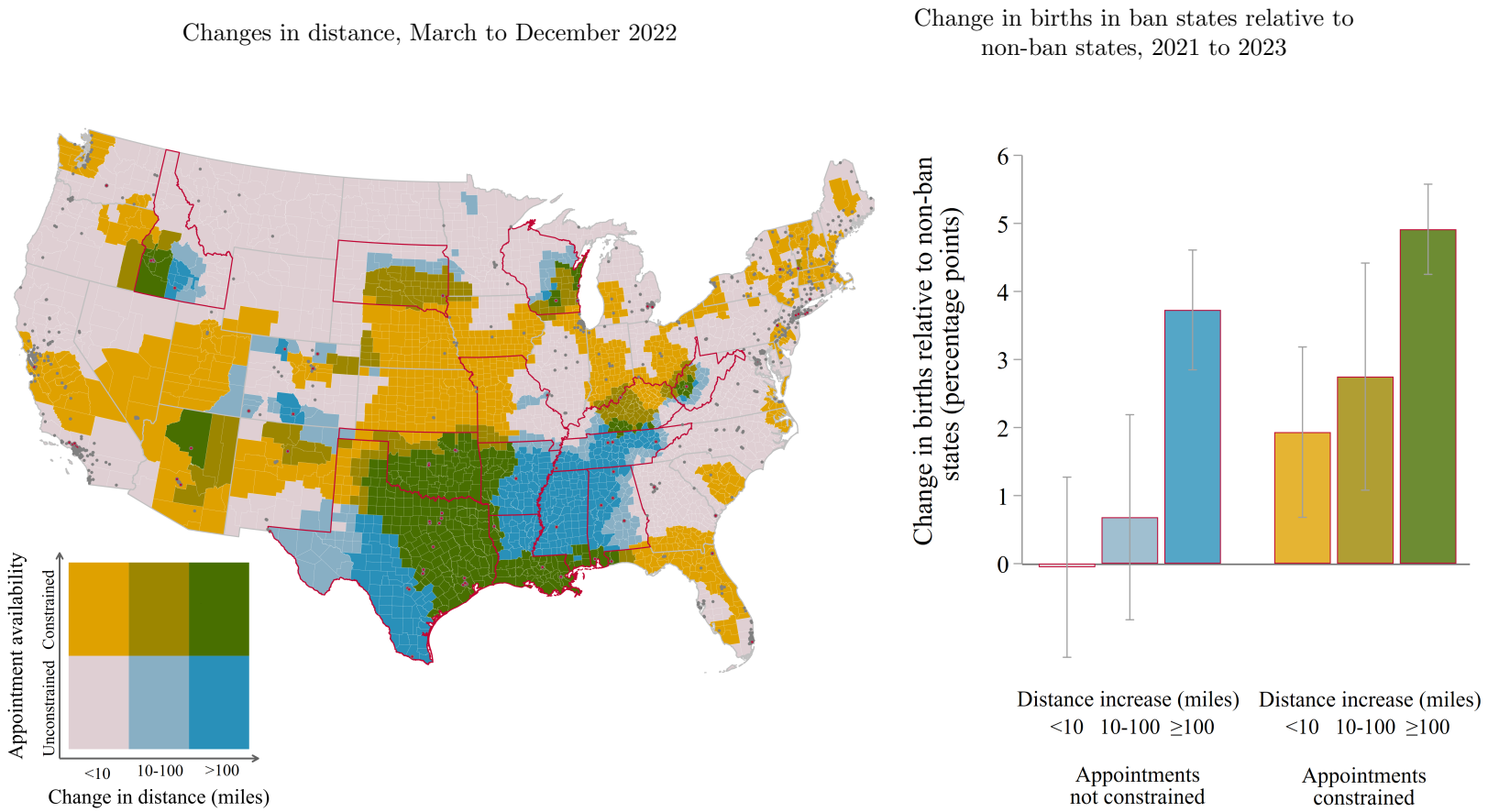
Figure 3: Distance as a mediator of the effects of abortion bans



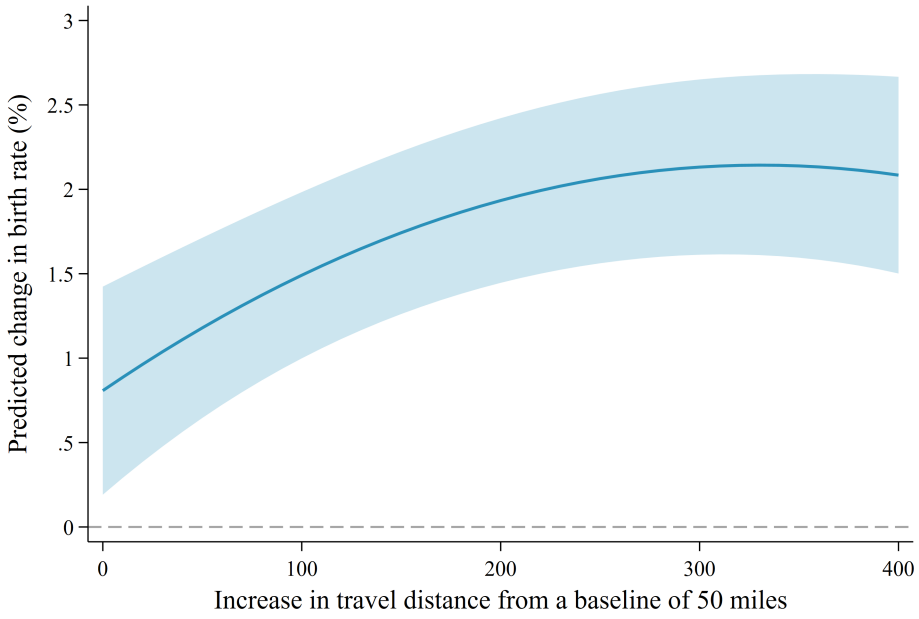

Notes: Red state borders indicate states enforcing total abortion bans in December 2022. Counties are shaded by changes in driving distance from the county population centroid to the nearest abortion facility, measured between March 1, 2022, and December 31, 2022. The bar chart illustrates the percent change in births between 2021 and 2023 in ban states relative to non-ban states, by the increase in driving distance. Bars represent 90% confidence intervals. Sources: Own elaboration using information from National Center for Health Statistics (2025); Myers (2025).

Figure 4: Increased distance and constrained appointment availability as mediators of abortion bans



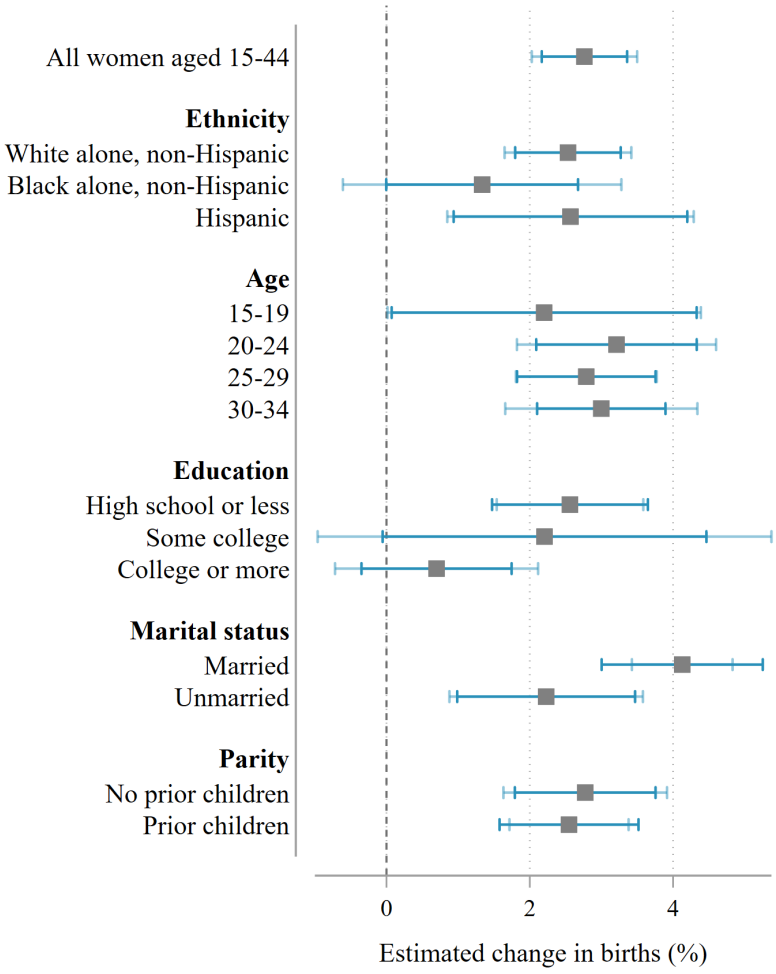

Notes: Counties are shaded by (1) change in driving distance to the nearest abortion facility, measured between March 1, 2022, and December 31, 2022, and (2) constrained appointment availability in the nearest destination city in December 2022. "Constrained" indicates that more than one-third of facilities in the nearest destination city did not have an appointment available within 2 weeks. Red state borders indicate states that enforced total abortion bans during this period. The bar chart illustrates the percent change in births between 2021 and 2023 in ban states relative to non-ban states, by the increase in driving distance and appointment constraints. Bars represent 90% confidence intervals. Sources: Own elaboration using information from National Center for Health Statistics (2025); Myers (2025, 2024b).

Figure 5: Estimated distance gradient from Model 2 Table 2



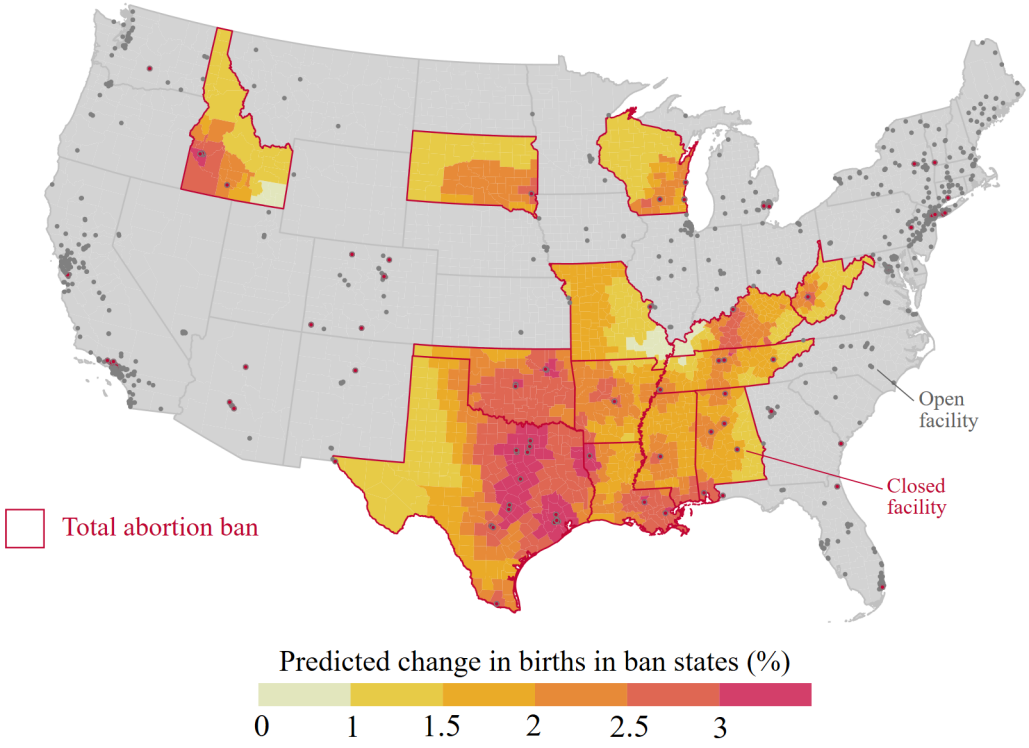

Notes: This figure plots the estimated marginal effect of an abortion ban that increases distance by 0 to 400 miles (x-axis) from a baseline of 50 miles. These estimates correspond to Table 2 Model 2, with the shaded region representing 95% confidence intervals calculated with standard errors clustered at the county level.

Figure 6: Predicted effects of the average abortion ban, by demographic group



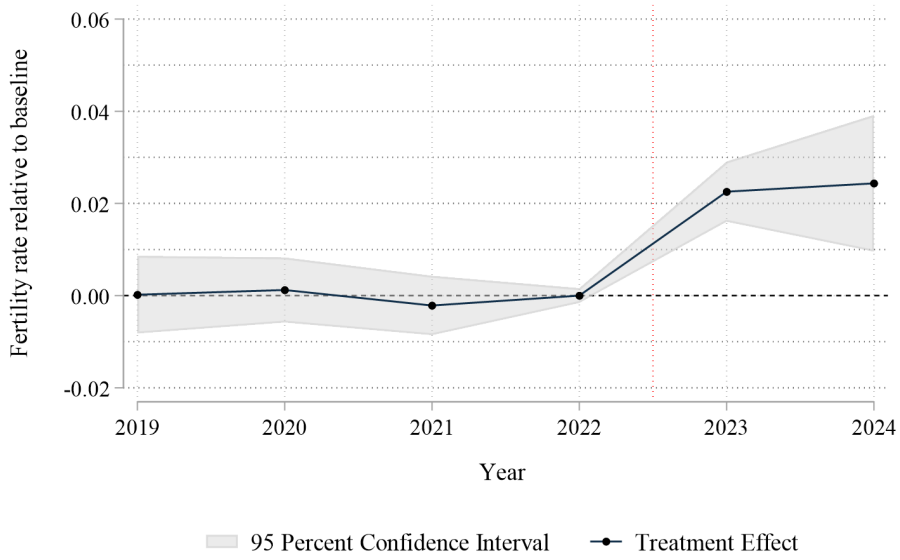

Notes: Estimated effects of a total abortion ban that increases driving distance from a baseline of 50 miles to a post-ban level of 300 miles. These estimates correspond to Table 2 Model 2. Models are estimated separately for each of the indicated groups. Estimates by educational attainment, marital status, and parity rely on the total population of women aged 15–44 as the exposure variable. Capped bars represent 90% confidence intervals, with darker blue bars corresponding to standard error clustered at the county level and lighter blue bars corresponding to standard errors clustered at the state level.

Figure 7: Spatial heterogeneity in the effects of bans: Predicted increases in births by county




Notes: Estimated effects of a total abortion ban and the associated county-level change in distances observed between March and December 2022, using results in Model 3 of Table 2. Each county in a state enforcing a total abortion ban is shaded to illustrate the predicted increase in births resulting from the ban.

Figure 8: Synthetic Difference-in-differences event study estimated effects of a ban on fertility




Notes: Estimated treatment effects produced with the implementation of the event study estimator proposed by Clarke et al. (2024) and using state clustered bootstrap inference for 95% confidence intervals. This is an extension of results from the Dench et al. (2024), including birth final estimates for the full year 2023 from the National Center for Health Statistics (2025) and provisional estimates for 2024 from CDC Wonder (2025). We use log birth rates as our outcome for comparability with the results of the Poisson models used elsewhere in the paper. Treatment and control are defined by state ban classifications in Table A.1, where treated states are those enforcing total bans and control states are those classified as "protected." We exclude Texas due to SB8. The only change relative to Dench et al. (2024) is that Wisconsin is not included as a ban state since its state supreme court ruling led to a removal of the ban in September 2023.

Table 1: Summary statistics by abortion ban status, before and after Dobbs

| | All states | | Total ban states | | Rest of country | |
|---|---|---|---|---|---|---|
| | Before | After | Before | After | Before | After |
| Birth rate (Births per 1,000 persons in group) | | | | | | |
| Total | 56.1 | 54.6 | 60.2 | 58.9 | 54.7 | 53.0 |
| | (8.5) | (8.7) | (8.5) | (8.5) | (8.0) | (8.2) |
| Abortion access | | | | | | |
| Distance (miles) | 24.7 | 86.6 | 46.8 | 279.7 | 16.9 | 17.4 |
| | (39.3) | (157.8) | (56.5) | (204.0) | (26.9) | (27.6) |
| Distance 6-week clinic (miles) | 34.6 | 108.7 | 84.4 | 296.0 | 16.9 | 41.6 |
| | (52.6) | (163.0) | (71.8) | (202.5) | (26.9) | (65.6) |
| Appointment constraints (%) | 28.3 | 25.0 | 38.6 | 29.5 | 24.7 | 23.4 |
| | (29.2) | (17.9) | (37.3) | (18.8) | (24.7) | (17.3) |
| Economic conditions | | | | | | |
| Unemployment rate (%) | 5.6 | 3.8 | 4.9 | 3.6 | 5.8 | 3.9 |
| | (1.8) | (1.1) | (1.4) | (0.8) | (1.8) | (1.1) |
| Poverty rate (%) | 12.6 | 12.6 | 14.2 | 14.1 | 12.1 | 12.1 |
| | (4.4) | (4.3) | (5.0) | (4.9) | (4.0) | (4.0) |
| Demographics (% of total population of women aged 15-44) | | | | | | |
| White & non-Hispanic | 55.3 | 54.5 | 58.0 | 57.1 | 54.3 | 53.6 |
| | (22.3) | (22.2) | (24.2) | (24.1) | (21.5) | (21.4) |
| Black & non-Hispanic | 14.8 | 14.9 | 16.1 | 16.2 | 14.4 | 14.4 |
| | (13.5) | (13.4) | (14.9) | (14.7) | (13.0) | (12.9) |
| Hispanic | 21.7 | 22.2 | 20.6 | 21.2 | 22.1 | 22.6 |
| | (18.0) | (18.1) | (21.0) | (21.0) | (16.8) | (16.9) |
| Age 15–19 | 16.2 | 16.3 | 16.8 | 16.9 | 16.1 | 16.2 |
| | (2.3) | (2.3) | (2.2) | (2.2) | (2.3) | (2.2) |
| Age 20–24 | 16.2 | 16.2 | 16.6 | 16.6 | 16.1 | 16.1 |
| | (3.4) | (3.4) | (3.7) | (3.7) | (3.3) | (3.3) |
| Age 25–29 | 17.0 | 16.4 | 16.7 | 16.3 | 17.0 | 16.5 |
| | (1.8) | (1.8) | (1.6) | (1.6) | (1.8) | (1.8) |
| Age 30–34 | 17.5 | 17.6 | 17.1 | 17.3 | 17.7 | 17.8 |
| | (1.9) | (1.8) | (1.7) | (1.7) | (1.9) | (1.8) |
| Age 35–39 | 16.9 | 16.9 | 16.7 | 16.5 | 17.0 | 17.0 |
| | (1.5) | (1.6) | (1.6) | (1.7) | (1.5) | (1.5) |
| Age 40–44 | 16.1 | 16.5 | 16.0 | 16.4 | 16.1 | 16.5 |
| | (1.7) | (1.7) | (1.8) | (1.9) | (1.6) | (1.7) |
| Number of states | 49 | | 34 | | 15 | |
| Number of counties | 3,108 | | 1,777 | | 1,331 | |
| Total population of women aged 15-44 | 130.7 million | | 96.4 million | | 34.3 million | |

Notes: Population-weighted summary statistics calculated for 3,108 counties in the contiguous United States. Observations of births are annual and cover the time span 2021 to 2024, with 2021–2022 categorized as "Before" Dobbs and 2023–2024 categorized as "After" Dobbs. "Total-ban states" are those enforcing near-total abortion bans for more than one month following Dobbs: Alabama, Arkansas, Idaho, Indiana, Kentucky, Louisiana, Mississippi, Missouri, North Dakota, Oklahoma, South Dakota, Tennessee, Texas, West Virginia, and Wisconsin. To allow for gestation, all explanatory variables—which measure abortion access, economic conditions, and demographics—are calculated using a 6-month lag. Appointment constraints were observed periodically beginning in March 2022, with missing months interpolated before creating an annual average. See text and replication package for additional information. Sources: National Center for Health Statistics (2025); Myers (2025, 2024b); Surveillance, Epidemiology, and End Results Program (SEER) (2025); Bureau of Labor Statistics, Local Area Unemployment Program (BLS) (2025); U.S. Census Bureau (2024).

Table 2: Two-way fixed effects Poisson estimates of the effect of bans, driving distance, and appointment availability on birth rates

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Panel A: Model Coefficients** | | | | | |
| Total ban | 0.0156 | 0.0080 | 0.0102 | | |
| | (0.0028) | (0.0037) | (0.0038) | | |
| | [0.0045] | [0.0047] | [0.0051] | | |
| Distance | | 0.0092 | 0.0088 | 0.0091 | 0.0087 |
| | | (0.0025) | (0.0026) | (0.0031) | (0.0031) |
| | | [0.0025] | [0.0028] | [0.0022] | [0.0023] |
| Distance$^2$ | | -0.0012 | -0.0012 | -0.0013 | -0.0013 |
| | | (0.0004) | (0.0004) | (0.0004) | (0.0004) |
| | | [0.0003] | [0.0004] | [0.0003] | [0.0004] |
| Appointment constraint | | | 0.0090 | | 0.0052 |
| | | | (0.0023) | | (0.0027) |
| | | | [0.0028] | | [0.0029] |
| **Panel B: Marginal Effects** | | | | | |
| Ban increasing distance | | 0.90% | 1.12% | | |
| from 0 to 10 miles | | (0.36) | (0.37) | | |
| | | [0.47] | [0.50] | | |
| Ban increasing distance | | 1.15% | 1.36% | | |
| from 10 to 50 miles | | (0.33) | (0.34) | | |
| | | [0.44] | [0.46] | | |
| Ban increasing distance | 1.57% | 2.06% | 2.17% | | |
| from 50 to 300 miles | (0.28) | (0.30) | (0.31) | | |
| | [0.46] | [0.42] | [0.39] | | |
| Controls | yes | yes | yes | yes | yes |
| State∗Year fixed effects | no | no | no | yes | yes |

Notes: This table presents coefficients from Poisson models of county-level birth rates, with the population of women aged 15-44 defined as an exposure variable. The units of observation are 3,108 counties in the contiguous United States observed over 4 years, from 2021–2024. All models include county and year fixed effects and the following controls, lagged six months to allow for gestation: unemployment rates, poverty rates, and the fraction of the female population age 15 to 44 that falls into detailed age and ethnicity groups, all interacted with year fixed effects. We also control for 6-week gestational age bans on abortion. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level. Panel B presents the estimated marginal effects of bans under three scenarios: distance increased from 0 to 10 miles, 10 to 50 miles, or 50 to 300 miles. These are calculated as $100 \times (\exp(\beta_b + \beta_d \Delta Distance + \beta_{dd} \Delta Distance^2) - 1)$. The average resident of a ban state experiences an increase in distance from approximately 50 miles before the ban to 300 miles after. Sources: See Table 1.

Table 3: Two-way fixed effects Poisson estimates of the effect of total bans, 6-week bans, driving distance to any facility, and the difference in driving distance to any facility and 6-week facilities

| | (1) | (2) | (3) |
|---|---|---|---|
| Total ban | 0.0156 | 0.0084 | |
| | (0.0028) | (0.0038) | |
| | [0.0045] | [0.0052] | |
| 6-week ban | 0.0165 | 0.0208 | |
| | (0.0034) | (0.0049) | |
| | [0.0023] | [0.0052] | |
| Distance | | 0.0092 | 0.0111 |
| | | (0.0026) | (0.0021) |
| | | [0.0026] | [0.0022] |
| Distance$^2$ | | -0.0012 | -0.0014 |
| | | (0.0004) | (0.0004) |
| | | [0.0003] | [0.0003] |
| (Distance6wks − Distance) | | -0.0016 | 0.0088 |
| | | (0.0040) | (0.0032) |
| | | [0.0037] | [0.0019] |
| (Distance6wks − Distance)$^2$ | | 0.0002 | -0.0015 |
| | | (0.0011) | (0.0011) |
| | | [0.0008] | [0.0005] |
| Controls | yes | yes | yes |
| State∗Year fixed effects | no | no | no |

Notes: This table presents coefficients from Poisson models of county-level births, with the population of women aged 15-44 defined as an exposure variable. The units of observation are 3,108 counties in the contiguous United States observed over 4 years, from 2021–2024. All models include county and year fixed effects and the following controls, lagged six months to allow for gestation: unemployment rates, poverty rates, and the fraction of the female population age 15 to 44 that falls into detailed age and ethnicity groups, all interacted with year fixed effects. We also control for 6-week gestational age bans. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level. *Distance* is measured as the driving distance to the nearest abortion facility, including facilities located in states enforcing gestational age bans that limit provision of services. *Distance6wks* is the driving distance to the nearest abortion facility that is not located in a state enforcing a gestational age ban. Hence, (*Distance6wks* − *Distance*) is equal to zero if the nearest facility is not in a 6-week ban state, and otherwise is positive and reflects the additional distance beyond that the nearest facility a person would have to drive to obtain an abortion beyond 6 weeks. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level. Sources: See Table 1.

# Appendices

## Appendix A: State abortion bans

Our starting point for classifying state abortion bans is state policy reviews published and periodically updated by the Center for Reproductive Rights (2025), Guttmacher Institute (2025), KFF (2023), and the New York Times (2022). We also consult the language of specific statutes and judicial decisions, as well as news articles that confirm the dates of enforcement. Our classifications capture the evolution of state policies through January 2025, though the analyses in this paper do not exploit variation occurring after June 2024.

We use the term "total ban" to describe a ban on abortions at all gestational ages with very limited exceptions. All enforced total bans have exceptions to protect the life of the pregnant person. In addition, 5 have exceptions to protect the health of the pregnant person, 3 have exceptions for cases of rape or incest, and 2 have exceptions in cases of fatal fetal anomalies (KFF, 2023). Critics argue that exceptions to preserve a mother's life or health are not feasible in practice due to the lack of specificity of clinical conditions (KFF, 2023).

Since June 2022, 15 states have enforced a total ban for a period of at least one month: Alabama, Arkansas, Idaho, Indiana, Kentucky, Louisiana, Mississippi, Missouri, North Dakota, Oklahoma, South Dakota, Tennessee, Texas, West Virginia, and Wisconsin.[28] In 12 of these states, bans automatically took effect shortly after the Dobbs decision under "trigger laws" passed prior to Dobbs, designed to ban abortion in the event that Roe was ever overturned. In Wisconsin, a de facto ban took effect when all of the state's abortion facilities ceased offering services because they viewed the state as likely to enforce a 19th-century abortion statute as a ban. In two states, Indiana and West Virginia, total bans took effect due to legislative actions following the Dobbs decision.

We use the term "gestational age ban" to describe a ban on abortions beyond a specified gestational age limit occurring prior to fetus viability, which is roughly 22 to 24 weeks of gestation. To date, gestational age bans have been established at thresholds of 6, 12, 15, and 18 weeks gestation. The 6-week gestational age bans are by far the most restrictive of the pre-viability bans. Because pregnancy is dated from the first day of the last menstrual period (LMP), in a 28-day cycle, fertilization would occur at approximately 14 days gestation, and implantation of the resulting embryo in the uterus would then occur at approximately 20 to 26 days post-fertilization. The earliest a person might expect a positive pregnancy test following fertilization and implantation is approximately 28 days LMP. Hence, at the soonest possible moment, a person might realize that they are pregnant, they are already at 4 weeks gestational age, giving them at most 2 weeks to make a decision regarding the abortion,

[28] This count does not include Arizona, where all abortion providers briefly closed twice in the months following Dobbs as a judicial battle over a pre-Roe abortion ban played out. It also does not include Utah, where a total ban was in effect for 3 days until it was enjoined by court order.

gather resources, and obtain the abortion before the 6-week ban prohibits it. Many pregnant people will have even less time, and some will not know they are pregnant until after 6 weeks. In 2020, 45.3% of abortions occurred at 6 weeks or earlier, and an additional 25.6% occurred at 7–9 weeks gestation (Kortsmit, 2022). Less than 7% of abortions occurred after 13 weeks (Kortsmit, 2022).

Texas became the first state to enforce a gestational age ban when Senate Bill 8 (SB8, the "Texas Heartbeat Act") took effect on September 1, 2021, nearly 10 months before the Dobbs decision.[29] Following Dobbs, 6 additional states–Florida, Georgia, Idaho, Iowa, Ohio, South Carolina, Tennessee–enforced 6-week gestational age bans. Total bans quickly supplanted Idaho and Tennessee's 6-week bans, while Ohio's was enjoined after two months. At present, Florida, Georgia, Iowa, and South Carolina are enforcing 6-week bans. In addition, Nebraska and North Carolina are enforcing 12-week bans, Kansas enforced a 15-week ban until December 2024, which was replaced by a 22-week ban, and Utah is enforcing an 18-week ban.

In addition, 5 states that were not enforcing pre-viability abortion bans are nonetheless considered "hostile" to abortion rights by organizations such as the Guttmacher Institute (2025) and Center for Reproductive Rights (2025). States classified as hostile may have pending litigation determining future enforcement of a ban or be considered likely to enact a ban in the future. In fact, three of the states these organizations were previously classified as hostile in 2022, Florida, Iowa, and South Carolina, now enforce 6-week gestational age bans (Center for Reproductive Rights, 2025).

In the remainder of this appendix, we provide state-by-state information on pre-viability abortion bans and other factors contributing to a characterization as "hostile" or "protected." Table A.1 presents dates of enforcement of pre-viability bans and a summary classification of the state policy environments.

## State-by-state review

### Alabama

Alabama Code §26-23H-4, a trigger law that took effect on 6/24/2022, prohibits abortions at all stages of pregnancy. The ban includes exceptions to prevent the death of the pregnant person, to prevent serious risk to the pregnant person's physical health, and where there is a lethal fetal anomaly.

### Alaska

The Alaska Supreme Court ruled in 1997 that the privacy provision of Alaska's constitution

[29] This law banned abortions after detection of fetal cardiac activity, which typically occurs at about 6 weeks gestation. While critics charged that enforcement of a pre-viability abortion ban was clearly not constitutional under Roe and Casey, and multiple lawsuits challenging the law were filed, the Supreme Court refused to issue an emergency injunction, and the law was enforced until the Dobbs decision, at which point Texas replaced it with a total ban.

protects the right to an abortion (*Valley Hospital Association, Inc. v. Mat-Su Coalition for Choice* 948: 963-73).

**Arizona**
Following the Dobbs decision, there was confusion and uncertainty about whether a total abortion ban dating to Arizona's founding criminal code in 1864 (A.R.S. §§13-3603) was enforceable. Per the facility documentation in the Myers Abortion database, all Arizona abortion facilities ceased providing services on or around 6/24/2022 under threat of enforcement. Most resumed services on or around 7/11/2022 when a judicial ruling blocked enforcement of the law. A lengthy litigation process ensued, and during it, facilities again ceased services between 9/24/2022 and 10/7/2022. On 4/9/2024, the state supreme court upheld the ban (*Planned Parenthood v. Mayes* 254 Arizona 401). At that point, the total ban appeared poised to take effect in May. However, the state legislature acted quickly, passing a bill to repeal the ban that was signed by the governor on 5/1/2024. At that point, the state attorney general announced the ban would not be enforced. Abortion rights proponents then introduced a ballot initiative, and on 11/5/2024, state voters passed an amendment to the state constitution to protect abortion rights.

Separately, the Arizona legislature enacted statute §36-2322, a 15-week gestational age ban, after the Dobbs decision. This law took effect on 9/25/2022. After the voter referendum in November 2024, the Center for Reproductive Rights filed a lawsuit challenging the 15-week ban. On 12/5/2024, the Arizona Attorney General agreed not to enforce the ban while litigation proceeded, stating that it was no longer constitutional under the new amendment.

**Arkansas**
Arkansas Code §5-61-301 to –304, a trigger law that took effect on 6/24/2022, prohibits abortions at all stages of pregnancy. This total ban includes an exception to prevent the death of the pregnant person.

**California**
California statute allows abortion up to fetal viability (HSC §123468). Further, Prop 1 in November 2022 passed by popular vote and clarified the state constitution's right to privacy to include a right to an abortion and contraceptives.

**Colorado**
Colorado has not enacted any restrictions on the gestational age limits at which abortion can be performed. Furthermore, Colorado §§25-6-403, effective April 2022, guarantees a right to abortion in Colorado.

**Connecticut**
Connecticut § 19a-602(a) leaves the decision to have an abortion to a pregnant woman.

**Delaware**
Tit. 24, § 1790 (b) expressly allows abortion up to fetal viability.

**District of Columbia**
D.C. CODE §2-1401.06 recognizes a right to an abortion.

**Florida**
Florida statute §390.0111 established a 15-week gestational age ban effective 7/1/2022. The

law remained in effect during an extended legal battle. On 4/13/2023, Florida's governor signed the "Heartbeat Protection Act" into law, amending Florida's statutes to establish a ban on abortions after fetal cardiac activity is detected, typically at about 6 weeks gestation. This law was not enforced during a period of judicial review, but the 15-week ban remained in effect. On 4/1/2024, the state Supreme Court ruled that the state constitution did not protect a right to abortion and that the bans could take effect (*Planned Parenthood of Southwest and Central Florida v. State of Florida* No. 384 So.3d 67), and the 6-week ban began effective and superseded the 15-week ban on 5/1/2024.

**Georgia**
The Georgia legislature enacted House Bill 481 in 2019, establishing a ban on abortions after fetal cardiac activity is detected. Enforcement of the ban was blocked until after the Dobbs decision, when it took effect on 7/20/2022. During an extensive battle carried in Georgia courts, enforcement was briefly enjoined between 11/15/2022 and 11/21/2022 and again between 9/30/2024 and 10/7/2024.

**Hawaii**
Hawaii §453-16(b) allows abortion until viability.

**Idaho**
In 2020, Idaho enacted §18-622(1)(a), a trigger ban prohibiting abortions at all stages of pregnancy. The law offered no exceptions, but did note that if prosecuted, a physician could rely on a defense that the abortion was necessary to save the life of the pregnant person, and bear the associated burden of proof. In 2021, Idaho enacted a second abortion ban on abortions after 6 weeks gestation that included exceptions to save the life of or to prevent irreversible, permanent bodily damage to the pregnant person. Both bans were scheduled to take effect after Dobbs, but a federal court temporarily enjoined the trigger ban because it conflicted with federal Emergency Medical Treatment and Labor Act (EMTALA) mandates. Meanwhile, the 6-week ban took effect on 8/19/2022 after a federal court upheld Georgia's similar 6-week ban. The state of Idaho appealed the injunction against the total ban, and it was then allowed to take effect on 8/25/2022. In July 2023, Idaho amended the total ban to allow exceptions to save the life of the pregnant person or in cases of rape or incest reported to legal authorities.

**Illinois**
Illinois §775-55/1-25(a) allows abortion until viability.

**Indiana**
Indiana Senate Enrolled Act 1, enacted after Dobbs in a special session of the state legislature on 8/5/2022, makes it illegal to perform an abortion. The ban includes exceptions to preserve the life or health of the pregnant person, in cases of rape or incest, and in cases of severe fetal anomalies. This law was challenged, and its enforcement was enjoined until the state supreme court issued a ruling on 8/1/2023 that it could take effect. The ban took effect on 8/21/2023.

**Iowa**
The Iowa legislature enacted House Bill 481 in 2019, establishing a ban on abortions after fetal cardiac activity is detected. The law was challenged and enjoined until 7/29/2024, when it took effect.

**Kansas**
*Hodes & Nauser, MDsS, P.A. v. Schmidt*, 440 P.3d 461, 502 clarified that the state constitution guarantees a right to an abortion. A ballot measure, H.C.R. 5003, failed that would have changed this in August 2022.

**Kentucky**
The Kentucky legislature enacted a trigger ban in 2019. The ban, codified as §311.772, took effect on 6/24/2022. The ban includes exceptions to preserve the life or health of the pregnant person.

**Louisiana**
The Louisiana legislature enacted a trigger ban in 2006, making it among the first states to do so. The ban, codified as §§40.87.7-8 and 40:1061, took effect on 6/24/2022. The ban includes exceptions to preserve the life or health of the pregnant person.

**Maine**
Maine §22-1598 ensures the right to an abortion up to viability.

**Maryland**
Maryland §20-209 ensures the right to an abortion up to viability.

**Massachusetts**
The decision in *Moe v. Secretary of Administration and Finance* ruled that abortion is protected under the due process clause of the state constitution. In addition, Gen. Laws ch. 112, § 12L. ensures a right to an abortion.

**Michigan**
Michigan statute §333.17015 allows abortion with informed consent up to the point of viability. Article I §28 of the Michigan state constitution protects the right to an abortion.

**Minnesota**
The Minnesota Supreme Court ruled in 1995 that the state constitution protects a right to abortion (*Doe v. Gomez* 542 N.W.2d 17). In January 2023, the governor signed the Protect Reproductive Options Act into law, affirming Minnesotans' fundamental right to make independent decisions about their own reproductive health, including the right to obtain an abortion.

**Mississippi**
The Mississippi legislature enacted a trigger ban in 2007, making it among the first states to do so. The ban, codified as §41-41-45, took effect on 7/7/2022. The ban includes exceptions to preserve the life of the pregnant person or in cases of rape or incest reported to law enforcement.

**Missouri**
The Missouri legislature enacted a trigger ban in 2019, codified as §188.017. This ban took effect on 6/24/2022. The ban includes exceptions to preserve the life of the pregnant person. In November 2024, Missouri voters approve an amendment to the state constitution to protect abortion rights. On 12/23/2024, the state Supreme Court held that the abortion

ban was unconstitutional following this amendment and enjoined the bans (Comprehensive Health of Planned Parenthood Great Plains et al. v. Missouri, No. 2416-CV31931). Planned Parenthood subsequently resumed services in February of 2025, but had to cease services again on 5/27/2025 the Missouri Supreme Court invalidated the lower court's ruling on technical grounds and reinstated the ban. On 7/3/2025, the lower court again blocked enforcement of the ban, and Planned Parenthood announced it would resume services on 7/7/2025.

**Montana**
Montana's Supreme Court held in 1999 that the state's constitutional protections for privacy extend to the right to access to abortion (*Armstrong v. State* 296 Mont. 361). Montana statute (§50-20-603) prohibits abortions beyond 20 weeks gestation, but this law was enjoined and ultimately struck down in 2024 (*Planned Parenthood of Montana v. State of Montana* No. DV-21-999). In 2023, the state legislature enacted Senate Bill 154 to redefine the constitutional right to privacy to exclude the right to abortion. But in 2024, Montana voters amended the state constitution to expressly provide a right to abortion.

**Nebraska**
The Nebraska governor signed a 12-week abortion ban (L.B. 574, 108th Leg.) into effect on 5/22/2023, and it became effective immediately. In November 2024, Nebraska voters rejected a ballot initiative to protect abortion and enshrine the 12-week abortion ban in the state constitution (Article 1, §31).

**Nevada**
Nevada voters ratified a law (§442.250) in 1990 that expressly protects the right to abortion before 24 weeks. In November 2024, Nevada voters approved an amendment to the state constitution to protect abortion rights, but this will require a second vote to be implemented.

**New Hampshire**
New Hampshire's legislature enacted a ban on abortions after 24 weeks codified as §329-34 and effective 1/1/2022. No law expressly allows or prohibits pre-viability abortion. The Center for Reproductive Rights characterizes this state as "not protected," a status that is intermediate between "protected" and "hostile" and shared by only two other states (New Mexico and Virginia). Similarly, the Guttmacher Institute characterizes New Hampshire as having "some restrictions." We characterize New Hampshire as protected for our limited purpose of describing changes in abortions and births across three groupings of states. We encourage other researchers to critically evaluate whether this characterization is appropriate for their analytical purposes.

**New Jersey**
New Jersey's Supreme Court determined in 1982 that the state constitutional right to privacy extends to abortion (*Right to Choose v. Byrne* 91NJ287). In 2022, the state legislature also enacted Senate Bill 49, establishing a right to abortion.

**New Mexico**
New Mexico's legislature repealed the state's pre-Roe abortion ban (§30-5-1(c), repealed by S.B. 10, 55th Legislature). No law expressly allows or prohibits pre-viability abortion, and the state's supreme court determined whether the state's constitution protects abortion.

The Center for Reproductive Rights characterizes this state as "not protected," a status that is intermediate between "protected" and "hostile" and shared by only two other states (New Hampshire and Virginia). However, given the state's recent history of repealing abortion restrictions, the Guttmacher Institute characterizes New Mexico as protective of abortion rights. We adhere to Guttmacher's characterization.

**New York**
The New York legislature enacted statutory protections for abortion in 2019 (§2599). In 2024, New York voters passed a state ballot initiative to enshrine abortion rights in the state constitution.

**North Carolina**
North Carolina's legislature enacted a suite of abortion restrictions effective 7/1/2023. These included a 12-week gestational age ban (§90-21.81).

**North Dakota**
In 2007, North Dakota's legislature enacted HB 1466, a trigger ban that was one of the first in the country. When the state attempted to enforce the ban following the Dobbs decision, it was initially struck down because it did not provide exceptions to preserve the life or health of the mother. The state legislature then amended the ban to add these exceptions, and it was allowed to take effect on 4/23/2023. The law was again challenged, and on 9/12/2024, the state Supreme Court determined that the state constitution protects a right to abortion, invalidating the law (*Access Independent Health Services v. Wrigley* No. 08-2022-CV-1608). However, the state has repealed the ruling, and as of February 2024, no facilities in North Dakota are publicly advertising abortion services.

**Ohio**
In April 2019, Ohio's legislature enacted a ban on abortions performed after the detection of fetal cardiac activity (Ohio Rev. Code Ann. § 2919.195), which typically takes place at about 6 weeks gestation. A court issued a preliminary injunction against enforcement, which a district court then dissolved on 6/24/2022 following the Dobbs decision. A 6-week gestational age ban, therefore, took effect on 6/24/2022. Enforcement was temporarily enjoined effective 9/14/2022, and the ban was subsequently struck down on 10/24/2024 (*Preterm-Cleveland v. Yost* No. A2203203 Ct. C.P. Ohio). Furthermore, on 11/7/2023, voters in Ohio approved Issue 1, a constitutional amendment to protect reproductive decision-making. As a result of this series of events, the Center for Reproductive Rights' characterization of Ohio evolved from hostile to protective. The Guttmacher Institute characterizes the state as having "some abortion restrictions." We characterize Ohio as "hostile" for our limited purpose of describing changes in abortions and births between 2021 and 2024 across three groupings of states. We encourage other researchers to critically evaluate whether this characterization is appropriate for their analytical purposes.

**Oklahoma**
Oklahoma's legislature enacted a trigger ban in 2021 designed to make its pre-Roe ban (§861) take effect immediately following a reversal of Roe. This ban, which only includes an exception to preserve the life of the pregnant person, took effect on 6/24/2022. However, even prior to this ban taking effect, Oklahoma had begun enforcing pre-viability bans. On 5/3/2022, Senate Bill 1503, modeled on Texas SB8, created private citizen enforcement of a

6-week ban, making abortions after six weeks prohibitively costly. On 5/26/2022, this was replaced with a total abortion ban.

**Oregon**
Oregon repealed its pre-Roe abortion ban in 1983. In 2023, it enacted statutory provisions to codify abortion as a right (§435.305).

**Pennsylvania**
Pennsylvania does not include express constitutional or statutory protections for abortion. The current Pennsylvania governor is supportive of abortion, but the state also has many restrictions in place, and the state legislature has attempted to enact more in recent years. The Center for Reproductive Rights characterizes Pennsylvania as "hostile" and Guttmacher Institute as "restrictive."

**Rhode Island**
Rhode Island enacted statutory protections for abortion (§23-4.13-2) in 2019.

**South Carolina**
South Carolina enacted a trigger ban in 2021 (§§ 44-41-610 et seq.) designed to ban abortions after the detection of fetal cardiac activity. This ban was in effect from 6/24/2022 to 8/17/2022, when the state supreme court issued a temporary injunction pending review. Ultimately, on 1/5/2023, the state supreme court issued an opinion striking down the law on the grounds that it violated a right to privacy protected by the state constitution (Planned Parenthood S. Atl. v. South Carolina, No. 28127). In response to this ruling, the state legislature revised the law in 2023. Enforcement was immediately enjoined pending resolution of this challenge, but the law was ultimately upheld and took effect on 8/23/2023 (*Planned Parenthood South Atlantic v. South Carolina*, No. 2023-000896).

**South Dakota**
South Dakota enacted a trigger ban (§22-17-5.1) in 2021 that made performing an abortion a felony except in cases to save the life of the mother. The last took effect on 6/24/2022.

**Tennessee**
Tennessee's constitution was amended in 2014 to preclude the protection of abortion rights. Tennessee enacted a trigger ban in 2019 (§39-15-213) that took effect on 8/25/2022. The following year, the Tennessee legislature also enacted House Bill 2263, which included a 6-week gestational age ban. Enforcement of this 6-week ban was enjoined, but a court allowed it to take effect on 6/28/2022 following Dobbs. It was superseded by the total abortion back on 8/25/2022. This total ban includes exceptions to preserve the life or health of the pregnant person.

**Texas**
Texas Senate Bill 8, which took effect on September 1, 2021, marked the first enforcement of a pre-viability abortion ban in the months leading up to Dobbs. The law allowed private citizens to sue anyone suspected of assisting an abortion that occurred after the detection of fetal cardiac activity, which occurs at about six weeks of pregnancy. Texas also enacted a trigger ban, codified as §§170A.001-7, which took effect on 8/25/2022. But all of the state's abortion providers ceased services immediately on 6/24/2022 after Dobbs, out of

concern they would be prosecuted under a separate pre-Roe abortion ban that had not been repealed. A state district court issued a restraining order blocking enforcement of this pre-Roe ban on 6/28/2022, but on appeal, the Texas Supreme Court granted a stay, effectively lifting the restraining order on 7/1/2022 (*Whole Woman's Health v. Paxton*, No. 22-0527). In summary, abortion was effectively banned on the date of the Dobbs decision, save for a three-day window from 6/28/2022 to 7/1/2022. Texas is classified as enforcing a six-week ban from 9/1/2021 through 6/23/2022, a total ban from 6/24/2022-6/28/2022, a 6-week ban from 6/29/2022-7/1/2022, and a total ban from 7/1/2022 forward.

**Utah**
Utah's legislature enacted a trigger ban in 2020, codified as §76-7a-201. This total ban briefly took effect between 6/24/2022 and 6/27/2022 before a temporary restraining order was issued, followed by a preliminary injunction (*Planned Parenthood Association of Utah v. Utah*, No. 220903886, July 11, 2022). This injunction was affirmed by the state Supreme Court on 8/1/2024, pending further review by the lower courts. Utah is enforcing a ban on abortions at 18 weeks (§§76-7-302) that took effect on 6/26/2022.

**Vermont**
The Vermont legislature enacted comprehensive abortion rights legislation in 2019 (§9493). These protections were further strengthened in November 2022 when voters approved Proposal 5, which enshrines reproductive freedom in the Vermont constitution.

**Virginia**
Virginia's legislature repealed multiple abortion restrictions in 2020, including a mandatory waiting period and supply-side regulations. No law expressly allows or prohibits pre-viability abortion. The Center for Reproductive Rights characterizes this state as "not protected," a status that is intermediate between "protected" and "hostile" and shared by only two other states (New Hampshire and New Mexico). Similarly, the Guttmacher Institute characterizes Virginia as having "some restrictions." We characterize Virginia as protected for our limited purpose of describing changes in abortions and births across three groupings of states. We encourage other researchers to critically evaluate whether this characterization is appropriate for their analytical purposes.

**Washington**
Washington law includes long-standing statutory protections of abortion rights (§9.02.110).

**West Virginia**
In the months and weeks leading up to Dobbs, West Virginia's attorney general issued a series of contradictory statements about potential enforcement of the state's 19th-century enforcement ban, and the state's sole abortion facility closed on 6/24/2022, citing concerns over enforcement action. The attorney general issued a memorandum on 6/29/2022 confirming that he regarded the state's 1849 abortion ban as in effect. Providers at the abortion facility filed for relief, and a state court granted a preliminary injunction on 7/20/2022 (*Women's Health Center of West Virginia v. Miller* No. 22-C-556, Jul. 20, 2022. West Virginia's sole abortion facility resumed services about a week after the injunction was issued. The legislature then called a special session to enact a new total ban, which was signed by the governor and took effect on 9/16/2022, codified as §16-2R-3. The ban includes exceptions to preserve the life or health of the pregnant person, for cases of rape or incest, and

for fatal fetal anomalies. West Virginia is classified as enforcing a total abortion ban from 6/24/2024 through 7/20/2022, and again from 9/13/2022 forward.

**Wisconsin**
Wisconsin's 1849 abortion ban was never repealed, and Wisconsin's abortion facilities began to close a month prior to the Dobbs decision, citing the risk of enforcement of an 1849 pre-Roe criminal abortion ban. After a lower court ruled it was not enforceable, the facilities began to reopen on 9/18/2023. The Supreme Court issued a ruling on 7/1/2025 affirming the lower court's ruling. We classify Wisconsin as enforcing a total ban between 6/24/2022 and 9/18/2023.

**Wyoming**
Wyoming enacted a trigger ban in 2022 (H.B. 92, 66th Leg. amending Wyo. Stat. Ann. §35-6-102). Just hours after the ban took effect on 7/27/2022, a judge issued an injunction blocking enforcement (*Johnson v. State*, No. 18732). On 3/21/2023, the legislature enacted another total abortion ban, codified as §35-6-102, but it was enjoined and struck down prior to taking effect.

Table A.1: Summary of pre-viability abortion bans

| State | Classification | Enforcement Dates |
|---|---|---|
| Alabama | Total ban | 6/24/2022–present |
| Alaska | Protected | |
| Arizona | Hostile | 15-week ban 9/25/2022–12/5/2024. Facilities also closed 6/24/2022–7/11/2022 & 9/24/2022–10/7/2022 due to perceived enforcement risks. |
| Arkansas | Total ban | 6/24/2022–present |
| California | Protected | |
| Colorado | Protected | |
| Connecticut | Protected | |
| Delaware | Protected | |
| District of Columbia | Protected | |
| Florida | 6-week ban | 15-week ban 7/1/2022–4/30/2024; 6-week ban 5/1/2024–present |
| Georgia | 6-week ban | 7/20/2022–11/15/2022; 11/21/2022–9/30/2024; 10/7/2024–present |
| Hawaii | Protected | |
| Idaho | Total ban | 6-week ban 8/19/2022–8/24/2022; Total ban 8/25/2022–present |
| Illinois | Protected | |
| Indiana | Total ban | 8/21/2023–present |
| Iowa | 6-week ban | 7/29/2024–present |
| Kansas | Protected | |
| Kentucky | Total ban | 6/24/2022–present |
| Louisiana | Total ban | 6/24/2022–present |
| Maine | Protected | |
| Maryland | Protected | |
| Massachusetts | Protected | |
| Michigan | Protected | |
| Minnesota | Protected | |
| Mississippi | Total ban | 7/7/2022–present |
| Missouri | Hostile | Total ban 6/24/2022–12/23/2024; 5/27/2025–7/3/2025 |
| Montana | Protected | |
| Nebraska | 12-week ban | 5/22/2023–present |
| Nevada | Protected | |
| New Hampshire | Protected | |
| New Jersey | Protected | |
| New Mexico | Protected | |
| New York | Protected | |
| North Carolina | 12-week ban | 7/1/2023–present |
| North Dakota | Hostile | Total ban 4/23/2023–9/12/2024 |
| Ohio | Protected | 6-week ban enforced 6/24/2022–10/24/2022. We characterize the state as "hostile" until 11/7/2023, when voters approved a constitutional amendment to protect abortion rights. |
| Oklahoma | Total ban | 6-week ban 5/3/2022–5/25/2022; Total ban 5/26/2022–present. |
| Oregon | Protected | |
| Pennsylvania | Protected | |
| Rhode Island | Protected | |
| South Carolina | 6-week ban | 6/24/2022–8/17/2022; 8/23/2023–present |
| South Dakota | Total ban | 6/24/2022–present |
| Tennessee | Total ban | 6-week ban 6/28/2022-8/24/2022; total ban 8/25/2022–present |
| Texas | Total ban | 6-week ban 9/1/2021–6/23/2022; total ban 6/24/2022–6/28/2022; 6-week ban 6/29/2022–7/1/2022; total ban 7/2/2022–present |
| Utah | 18-week ban | Total ban 6/24/2022–6/27/2022; 18-week ban 6/26/2022–present |
| Vermont | Protected | |
| Virginia | Protected | |
| Washington | Protected | |
| West Virginia | Total ban | 6/24/2024–7/20/2022; 9/13/2022–present |
| Wisconsin | Hostile | Total ban 6/24/2022–9/18/2023 |
| Wyoming | Hostile | |

Notes: Table provides dates of contemporary enforcement of pre-viability abortion bans. The classification column characterizes policies at the time of writing in November 2025. Where this classification differs from that represented in Figure 1, it is because policies differed in December 2022.

# Appendix B: Alternative specifications and additional results

## B.1 Alternative specifications for Table 2

In subsection 7.1, we allude to various alternative specifications of our primary models. These include the following robustness checks for Table 2:

- Table B.1 reports results of specifications at the monthly rather than yearly level, where each month births depend on policies and controls from six months ago.
- Table B.2 reports results of specifications omitting economic control variables from the models.
- Table B.3 reports results of specifications omitting economic and demographic controls from models.
- Table B.4 reports results of the primary specification estimated for a sample that excludes Texas.
- Table B.5 reports results of alternative specifications to the Poisson. The outcome is the natural logarithm of the birth rate, and the model is estimated with WOLS, where the weights are the population of women aged 15-44.
- Table B.6 reports results of alternative specifications to the Poisson. The outcome is the natural logarithm of the birth rate, and the model is estimated with OLS but excluding counties with less than 1,000 women of reproductive age; less than 1% of this population across the US.

Each of these tables can be directly compared to the primary estimates in Table 2 to demonstrate how the results vary according to these alternative specifications and sample selection criteria. While column (1) results vary quite a bit across specifications, where bans exhibit anywhere from a 0.18% increase in births when estimated by OLS (Table B.6) to a 1.68% increase in births when estimated by WLS (Table B.5), findings on the effect of distance are much more consistent. For instance, based on the results in Column 2 of Table 2, we report in the paper that the average ban increases births by 2.06%. Using the alternative specifications and samples here, the smallest estimated effect is 1.03% if we exclude Texas from the analysis (Table B.4). This smaller effect is in keeping with the fact that Texas exhibits some of the largest distance increases in the country, and distance is a mediator of bans. The results of the remaining alternative specifications are also in keeping with the primary results, ranging from a 1.05% increase in births (Table B.6) to a 2.15% increase in births (Table B.5).

The results for models that add appointment availability (Column 3), controls for state-by-year fixed effects (Column 4), and state-by-year fixed effects and controls for appointment availability (Column 5) are similarly robust across specifications, especially in the effect distance has on birth outcomes.

Finally, we also estimated a version of column (2) of Table 2 in which we adopt a semi-parametric approach to estimating distance, replacing distance and its square with a set of indicators categorizing distance:

$$E\left[births_{c,s,t} \mid \cdot\right] = \exp\Big(\beta_b\, ban_{s,t-1} + \beta_{d50}\, I(50 < dist_{c,s,t-1} \leq 100) + \beta_{d100}\, I(100 < dist_{c,s,t-1} \leq 150) + \beta_{d150}\, I(50 < dist_{c,s,t-1} \leq 200) + \beta_{d200}\, I(200 < dist_{c,s,t-1} \leq 250) + \beta_{d250}\, I(250 < dist_{c,s,t-1}) + \beta_a\, appt_{c,s,t-1} + \beta_{b6}\, 6week\ ban_{c,s,t-1} + \boldsymbol{x}'_{c,s,t-1}\boldsymbol{\gamma} + \ln(pop_{c,s,t}) + \upsilon_c + \upsilon_t\Big). \quad (3)$$

Here, the estimated effect of a ban that does not increase distance by more than 50 miles is $\beta_b$, while that of a ban that increases distance to more than 250 miles is $\beta_b + \beta_{d250}$.

Figure B.1 presents the estimated effects of a ban that does not increase distance by more than 50 miles ($\beta_b$), increases distance by 50–100 miles ($\beta_b + \beta_{d50}$), and so on. We observe that the estimated effects of bans increase in distance, but at a decreasing rate. Both the magnitudes of the effects and the shape of the implied gradient are quite similar to those in Figure 5, supporting the conclusions in the paper.

## B.2 Placebo-in-time analyses

To further assess the validity of the common trends assumption, we perform a placebo-in-time exercise based on the results in column 2 of Table 2.

Figure B.2 presents placebo analyses in time based on the model used in Column 2 of Table 2. In this placebo-in-time exercise, we run a falsification test in which we assign the explanatory variables in our analysis to earlier periods in time and re-estimate our model on births in these earlier periods, starting in 2013–2016. We then estimate the marginal effects of a ban that increases distance from 50-300 miles using these placebo treatments. For example, the marker corresponding to the years 2013-2016 was estimated by comparing observed births in 2013-2016 but imposing the distance from each county to the nearest abortion facility and ban status in 2013, 2014, 2015, and 2016 to be the distances and ban status in these counties in 2021, 2022, 2023, and 2024, respectively. As we can observe, the largest effect on births of a ban that increases distance from 50 to 300 miles is the observed effect when distance actually changed pre-to post-Dobbs in 2021-2022, compared to 2023-24. In the remaining year-pair comparisons, the estimated effects on births are smaller, which supports the validity of our findings. While there are more statistically significant effects than we would expect by chance, it is worth noting that we are conducting these placebos on states that were actively shifting their abortion policies to be more restrictive in the run-up to Dobbs.

## B.3 Alternative approaches to exploring dynamic treatment effects

In subsection 7.3, we rely on Synthetic Difference-in-Differences (SDiD) specifications to explore potentially dynamic treatment effects, concluding that there is no evidence that the effects of bans changed substantially in 2024. Here we presented several robustness checks for the DiD results as well as an alternative approach based on an expansion of Table 2.

First, we estimate three alternative SDiD specifications for comparison to the results in Figure 8:

- Figure B.3 reports results of a specification that includes Wisconsin as a ban state rather than excluding it from the analysis. All Wisconsin abortion facilities closed in response to Dobbs and the threatened enforcement of a 19th-century abortion ban, but then resumed services in September 2023 after a judicial ruling enjoined enforcement. In our primary analysis, we exclude Wisconsin. In this alternative approach, we classify it as a ban state and include it as a ban state.
- Figure B.4 reports results of a specification that uses the level birthrate (births per 1,000 women aged 15-44) rather than the log birthrate.
- Figure B.5 reports results of a specification that uses the level birthrate and includes Wisconsin as a ban state.

These results are substantively the same as those reported in Figure 8 and all support the view that abortion bans resulted in a sustained increase in births relative to states that protected abortion access.

Second, we expand the results in Table 2 to account for potentially dynamic effects. Rather than estimating a single model pooling all two post-Dobbs years, we estimate two separate models—one for each post period. These results are presented in Panels A and B of Table B.7. In both panels, the pre-Dobbs period consists of the two years 2021–2022. Panel A includes a single post-Dobbs year (2023), and Panel B includes a single post-Dobbs year (2024). The last row in each panel presents the estimated effect of a total abortion ban that increases distance from 50 miles before the ban to 300 miles after, roughly corresponding to the average ban. Panel C provides p-values for tests of differences between the marginal effects estimated in Panels A and B, obtained with cluster bootstrap Wald tests based on 1,000 bootstrap runs.

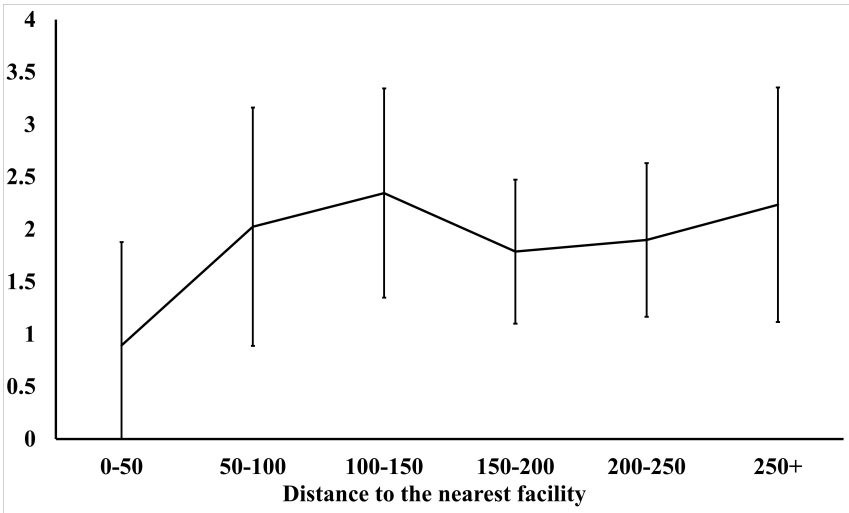
In most cases, the estimated effects in 2023 were a bit larger in magnitude than those in 2024. For example, Column 2 shows that the average abortion ban increased births by 2.52% ($p < 0.01$) in 2023, compared to 1.44% ($p < 0.01$) in 2024. However, each set of estimates is sufficiently imprecise that the differences between the two sets of estimates are not statistically significant (using county-clustered standard errors), save for in Column 2 (difference= 1.08($p < 0.05$).

## B.4 Alternative specifications for Table 3

Table 3 presents results of models that more fully specify the effects of a 6-week gestational age ban by adding the additional distance people must travel beyond the nearest abortion facility to reach a facility not subject to a 6-week gestational age ban. In Table B.8, we report an alternative version of this specification estimated at the monthly rather than yearly level, lagging controls by

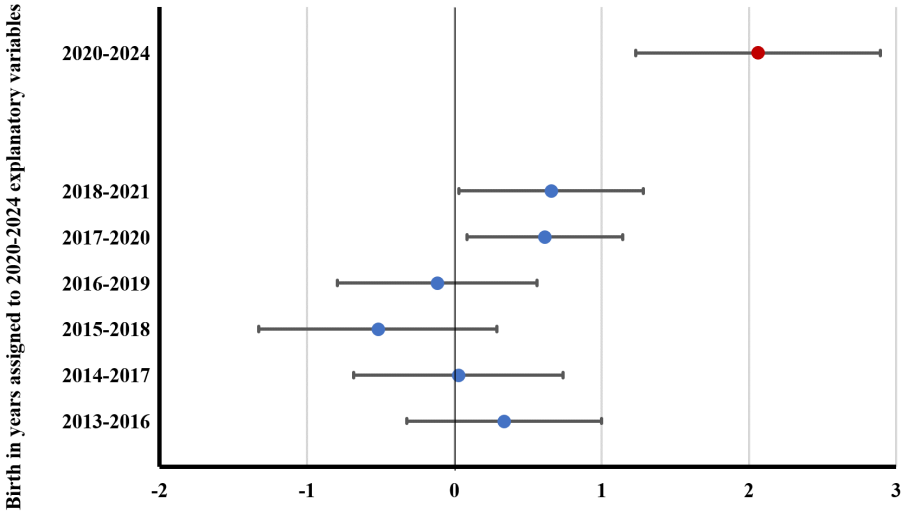
6 months to account for gestation. The results are extremely similar, supporting the conclusions offered in the paper.

Figure B.1: Alternative to Figure 5 obtained from semi-parametric models



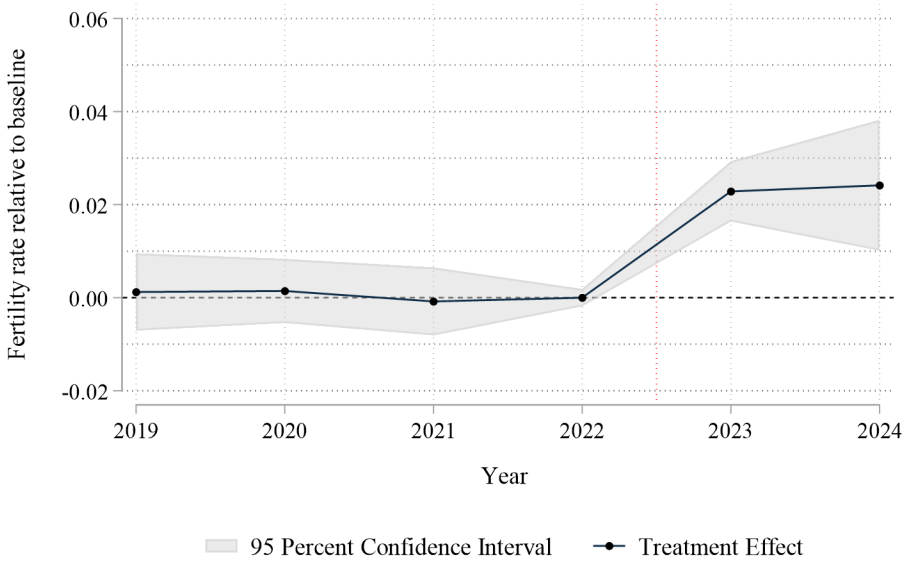

Notes: The markers represent estimates from a Poisson model corresponding to column 2 of Table 2, but replacing *Distance* and $Distance^2$ with indicator variables categorizing distance to the nearest abortion facility into bins represented on the x-axis. The omitted category is $Distance \leq 50$ miles. See Table 2 for more details.

Figure B.2: Placebo in time estimates for main specifications



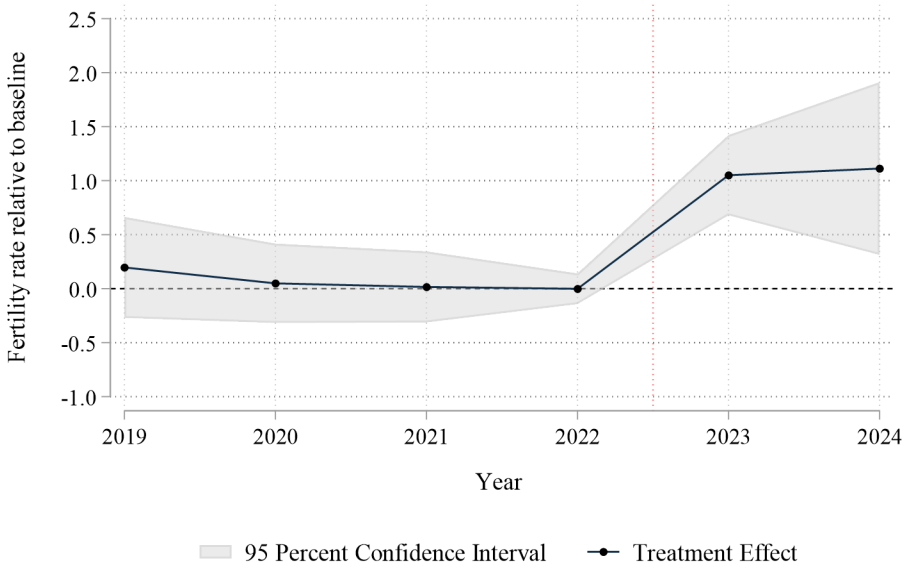

Notes: In this placebo-in-time exercise, we run a falsification test in which we assign the explanatory variables in our analysis to earlier periods in time and re-estimate our model on births. The red marker at the top reproduces our primary finding for comparison purposes, illustrating the estimated effect of a total ban that increased distance from 50 to 300 miles based on the results in Column 2 of Table 2. Each blue marker illustrates the estimated marginal effects of the same treatment, but based on a model in which the explanatory variables were shifted to an earlier four-year period, as represented on the y-axis. We cluster the standard errors at the state level to produce 95% confidence intervals represented by capped bars.

Figure B.3: Alternative Figure 8 results estimated with Wisconsin included in the ban states



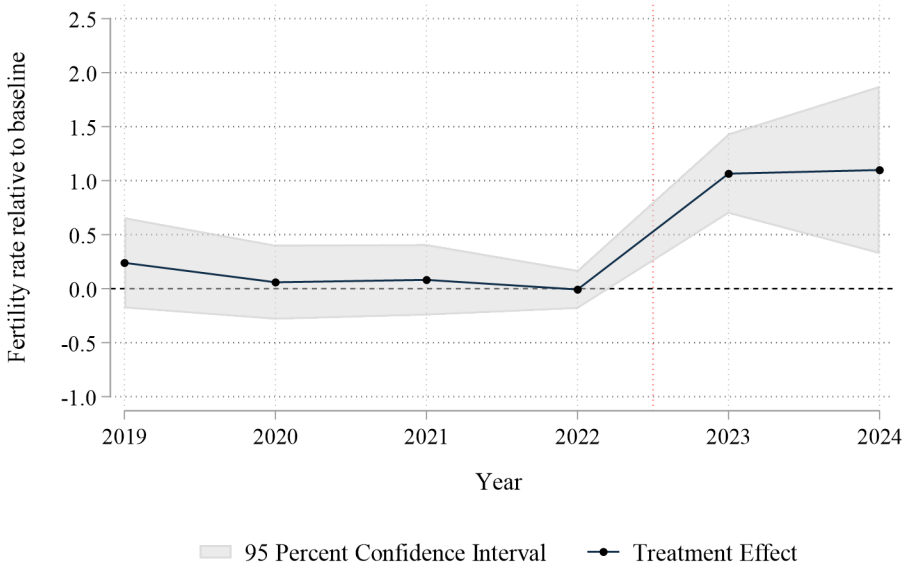

Notes: Compare to Figure 8. The ban states include Wisconsin, where abortion facilities resumed services in September 2023.

Figure B.4: Alternative Figure 8 results estimated with level birthrates as the outcome rather than log birthrates




Notes: Compare to Figure 8. The outcome is defined as births per 1,000 women aged 15-44 rather than the log of birthrates.

Figure B.5: Alternative Figure 8 results estimated with Wisconsin included in the ban states using level birthrates as the outcome rather than log birthrates




Notes: Compare to Figure 8. The outcome is defined as births per 1,000 women aged 15-44 rather than the log of birthrates. The ban states also include Wisconsin, where abortion facilities resumed services in September 2023.

Table B.1: Alternative Table 2 results using monthly instead of yearly observations

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Panel A: Model Coefficients** | | | | | |
| Total ban | 0.0134 | 0.0041 | 0.0045 | | |
| | (0.0026) | (0.0033) | (0.0033) | | |
| | [0.0042] | [0.0041] | [0.0041] | | |
| Distance | | 0.0105 | 0.0105 | 0.0104 | 0.0103 |
| | | (0.0023) | (0.0024) | (0.0028) | (0.0029) |
| | | [0.0024] | [0.0025] | [0.0025] | [0.0025] |
| Distance$^2$ | | -0.0013 | -0.0013 | -0.0015 | -0.0015 |
| | | (0.0003) | (0.0003) | (0.0004) | (0.0004) |
| | | [0.0003] | [0.0003] | [0.0003] | [0.0003] |
| Appointment constraint | | | 0.0052 | | 0.0023 |
| | | | (0.0020) | | (0.0022) |
| | | | [0.0025] | | [0.0024] |
| **Panel B: Marginal Effects** | | | | | |
| Ban increasing distance | | 0.52% | 0.55% | | |
| from 0 to 10 miles | | (0.32) | (0.32) | | |
| | | [0.40] | [0.40] | | |
| Ban increasing distance | | 0.80% | 0.84% | | |
| from 10 to 50 miles | | (0.29) | (0.29) | | |
| | | [0.39] | [0.38] | | |
| Ban increasing distance | 1.35% | 1.92% | 1.94% | | |
| from 50 to 300 miles | (0.26) | (0.28) | (0.29) | | |
| | [0.43] | [0.40] | [0.37] | | |
| Controls | yes | yes | yes | yes | yes |
| State∗Year fixed effects | no | no | no | yes | yes |

Notes: Alternative specification of Table 2 in which counties are observed monthly rather than annually. All controls are lagged six months to allow for gestation. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level. We also present the estimated marginal effects of bans under three scenarios: distance increased from 0 to 10 miles, 10 to 50 miles, or 50 to 300 miles. These are calculated as $100 \times (\exp(\beta_b + \beta_d \Delta Distance + \beta_{dd} \Delta Distance^2) - 1)$. The average resident of a ban state experiences an increase in distance from approximately 50 miles before the ban to 300 miles after.

Table B.2: Alternative Table 2 results removing controls for poverty and unemployment

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Panel A: Model Coefficients** | | | | | |
| Total ban | 0.0150 | 0.0083 | 0.0103 | | |
| | (0.0024) | (0.0034) | (0.0035) | | |
| | [0.0041] | [0.0047] | [0.0051] | | |
| Distance | | 0.0078 | 0.0074 | 0.0058 | 0.0054 |
| | | (0.0026) | (0.0027) | (0.0033) | (0.0032) |
| | | [0.0026] | [0.0031] | [0.0026] | [0.0027] |
| Distance$^2$ | | -0.0010 | -0.0010 | -0.0009 | -0.0009 |
| | | (0.0004) | (0.0004) | (0.0004) | (0.0004) |
| | | [0.0004] | [0.0004] | [0.0004] | [0.0004] |
| Appointment constraint | | | 0.0075 | | 0.0048 |
| | | | (0.0023) | | (0.0027) |
| | | | [0.0026] | | [0.0027] |
| **Panel B: Marginal Effects** | | | | | |
| Ban increasing distance | | 0.91% | 1.11% | | |
| from 0 to 10 miles | | (0.33) | (0.34) | | |
| | | [0.46] | [0.50] | | |
| Ban increasing distance | | 1.12% | 1.31% | | |
| from 10 to 50 miles | | (0.30) | (0.31) | | |
| | | [0.42] | [0.44] | | |
| Ban increasing distance | 1.51% | 1.93% | 2.02% | | |
| from 50 to 300 miles | (0.24) | (0.29) | (0.29) | | |
| | [0.41] | [0.36] | [0.35] | | |
| Controls | yes | yes | yes | yes | yes |
| State∗Year fixed effects | no | no | no | yes | yes |

Notes: Alternative specification of Table 2 in which the controls exclude county-level poverty and unemployment, but still include demographics interacted with year fixed effects. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level. We also present the estimated marginal effects of bans under three scenarios: distance increased from 0 to 10 miles, 10 to 50 miles, or 50 to 300 miles. These are calculated as $100 \times (\exp(\beta_b + \beta_d \Delta Distance + \beta_{dd} \Delta Distance^2) - 1)$. The average resident of a ban state experiences an increase in distance from approximately 50 miles before the ban to 300 miles after.

Table B.3: Alternative Table 2 results removing controls for poverty, unemployment, and demographics

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Panel A: Model Coefficients** | | | | | |
| Total ban | 0.0154 | 0.0097 | 0.0122 | | |
| | (0.0030) | (0.0036) | (0.0038) | | |
| | [0.0068] | [0.0053] | [0.0059] | | |
| Distance | | 0.0053 | 0.0049 | 0.0040 | 0.0036 |
| | | (0.0030) | (0.0029) | (0.0038) | (0.0038) |
| | | [0.0036] | [0.0034] | [0.0019] | [0.0018] |
| Distance$^2$ | | -0.0006 | -0.0006 | -0.0007 | -0.0006 |
| | | (0.0004) | (0.0004) | (0.0004) | (0.0004) |
| | | [0.0004] | [0.0004] | [0.0002] | [0.0002] |
| Appointment constraint | | | 0.0081 | | 0.0054 |
| | | | (0.0027) | | (0.0029) |
| | | | [0.0038] | | [0.0029] |
| **Panel B: Marginal Effects** | | | | | |
| Ban increasing distance | | 1.02% | 1.27% | | |
| from 0 to 10 miles | | (0.35) | (0.38) | | |
| | | [0.53] | [0.59] | | |
| Ban increasing distance | | 1.17% | 1.41% | | |
| from 10 to 50 miles | | (0.33) | (0.35) | | |
| | | [0.53] | [0.58] | | |
| Ban increasing distance | 1.56% | 1.79% | 1.91% | | |
| from 50 to 300 miles | (0.37) | (0.31) | (0.37) | | |
| | [0.69] | [0.72] | [0.70] | | |
| Controls | yes | yes | yes | yes | yes |
| State∗Year fixed effects | no | no | no | yes | yes |

Notes: Alternative specification of Table 2 in which the controls exclude county-level poverty and unemployment as well as demographic controls, all of which were interacted with year fixed effects. Controls still include 6-week gestational age bans. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level. We also present the estimated marginal effects of bans under three scenarios: distance increased from 0 to 10 miles, 10 to 50 miles, or 50 to 300 miles. These are calculated as $100 \times (\exp(\beta_b + \beta_d \Delta Distance + \beta_{dd} \Delta Distance^2) - 1)$. The average resident of a ban state experiences an increase in distance from approximately 50 miles before the ban to 300 miles after.

Table B.4: Alternative Table 2 results removing Texas from the sample

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Panel A: Model Coefficients** | | | | | |
| Total ban | 0.0082 | 0.0042 | 0.0054 | | |
| | (0.0031) | (0.0037) | (0.0038) | | |
| | [0.0032] | [0.0041] | [0.0044] | | |
| Distance | | 0.0112 | 0.0123 | 0.0083 | 0.0080 |
| | | (0.0038) | (0.0038) | (0.0044) | (0.0044) |
| | | [0.0047] | [0.0054] | [0.0049] | [0.0050] |
| Distance$^2$ | | -0.0025 | -0.0027 | -0.0006 | -0.0004 |
| | | (0.0009) | (0.0008) | (0.0011) | (0.0011) |
| | | [0.0010] | [0.0011] | [0.0015] | [0.0016] |
| Appointment constraint | | | 0.0063 | | 0.0057 |
| | | | (0.0027) | | (0.0029) |
| | | | [0.0031] | | [0.0031] |
| **Panel B: Marginal Effects** | | | | | |
| Ban increasing distance | | 0.53% | 0.67% | | |
| from 0 to 10 miles | | (0.36) | (0.37) | | |
| | | [0.40] | [0.42] | | |
| Ban increasing distance | | 0.81% | 0.98% | | |
| from 10 to 50 miles | | (0.33) | (0.35) | | |
| | | [0.36] | [0.40] | | |
| Ban increasing distance | 0.82% | 1.03% | 1.24% | | |
| from 50 to 300 miles | (0.31) | (0.38) | (0.41) | | |
| | [0.32] | [0.31] | [0.35] | | |
| Controls | yes | yes | yes | yes | yes |
| State∗Year fixed effects | no | no | no | yes | yes |

Notes: Alternative specification of Table 2 in which Texas is excluded from the sample. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level. We also present the estimated marginal effects of bans under three scenarios: distance increased from 0 to 10 miles, 10 to 50 miles, or 50 to 300 miles. These are calculated as $100 \times (\exp(\beta_b + \beta_d \Delta Distance + \beta_{dd} \Delta Distance^2) - 1)$. The average resident of a ban state experiences an increase in distance from approximately 50 miles before the ban to 300 miles after.

Table B.5: Alternative Table 2 results using population weighted least squares

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Panel A: Model Coefficients** | | | | | |
| Total ban | 0.0168 | 0.0092 | 0.0114 | | |
| | (0.0029) | (0.0037) | (0.0038) | | |
| | [0.0045] | [0.0048] | [0.0052] | | |
| Distance | | 0.0091 | 0.0087 | 0.0093 | 0.0089 |
| | | (0.0026) | (0.0026) | (0.0031) | (0.0031) |
| | | [0.0026] | [0.0029] | [0.0022] | [0.0022] |
| Distance$^2$ | | -0.0012 | -0.0012 | -0.0013 | -0.0013 |
| | | (0.0004) | (0.0004) | (0.0004) | (0.0004) |
| | | [0.0003] | [0.0004] | [0.0003] | [0.0003] |
| Appointment constraint | | | 0.0093 | | 0.0051 |
| | | | (0.0024) | | (0.0027) |
| | | | [0.0028] | | [0.0029] |
| **Panel B: Marginal Effects** | | | | | |
| Ban increasing distance | | 1.01% | 1.23% | | |
| from 0 to 10 miles | | (0.36) | (0.37) | | |
| | | [0.47] | [0.50] | | |
| Ban increasing distance | | 1.25% | 1.46% | | |
| from 10 to 50 miles | | (0.33) | (0.34) | | |
| | | [0.44] | [0.45] | | |
| Ban increasing distance | 1.68% | 2.15% | 2.25% | | |
| from 50 to 300 miles | (0.29) | (0.31) | (0.31) | | |
| | [0.45] | [0.41] | [0.38] | | |
| Controls | yes | yes | yes | yes | yes |
| State∗Year fixed effects | no | no | no | yes | yes |

Notes: Alternative specification of Table 2 in which, rather than utilizing a Poisson specification, the model is estimated using population-weighted least squares with the log of birth rates as an outcome. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level. We also present the estimated marginal effects of bans under three scenarios: distance increased from 0 to 10 miles, 10 to 50 miles, or 50 to 300 miles. These are calculated as $100 \times (\exp(\beta_b + \beta_d \Delta Distance + \beta_{dd} \Delta Distance^2) - 1)$. The average resident of a ban state experiences an increase in distance from approximately 50 miles before the ban to 300 miles after.

Table B.6: Alternative Table 2 results using Ordinary Least Squares, dropping counties with less than 1,000 women of reproductive age

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Panel A: Model Coefficients** | | | | | |
| Total ban | 0.0018 | -0.0039 | -0.0031 | | |
| | (0.0033) | (0.0044) | (0.0045) | | |
| | [0.0040] | [0.0043] | [0.0044] | | |
| Distance | | 0.0111 | 0.0115 | 0.0097 | 0.0099 |
| | | (0.0046) | (0.0047) | (0.0058) | (0.0059) |
| | | [0.0041] | [0.0044] | [0.0047] | [0.0048] |
| Distance$^2$ | | -0.0015 | -0.0016 | -0.0017 | -0.0017 |
| | | (0.0007) | (0.0007) | (0.0009) | (0.0009) |
| | | [0.0007] | [0.0007] | [0.0007] | [0.0007] |
| Appointment constraint | | | 0.0036 | | -0.0026 |
| | | | (0.0033) | | (0.0041) |
| | | | [0.0046] | | [0.0050] |
| **Panel B: Marginal Effects** | | | | | |
| Ban increasing distance | | -0.28% | -0.19% | | |
| from 0 to 10 miles | | (0.42) | (0.43) | | |
| | | [0.42] | [0.44] | | |
| Ban increasing distance | | 0.02% | 0.11% | | |
| from 10 to 50 miles | | (0.37) | (0.38) | | |
| | | [0.42] | [0.44] | | |
| Ban increasing distance | 0.18% | 1.05% | 1.15% | | |
| the average amount across ban states | (0.33) | (0.46) | (0.48) | | |
| from 50 to 300 miles | [0.40] | [0.51] | [0.57] | | |
| Controls | yes | yes | yes | yes | yes |
| State∗Year fixed effects | no | no | no | yes | yes |

Notes: Alternative specification of Table 2 in which, rather than utilizing a Poisson specification, the model is estimated using (unweighted) ordinary least squares with the log of birth rates as an outcome. We omit counties with fewer than 1,000 female residents at 15–44 due to the high level of variance in the outcome in these small counties, which account for less than 1% of the national population of women of reproductive age. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level. We also present the estimated marginal effects of bans under three scenarios: distance increased from 0 to 10 miles, 10 to 50 miles, or 50 to 300 miles. These are calculated as $100 \times (\exp(\beta_b + \beta_d \Delta Distance + \beta_{dd} \Delta Distance^2) - 1)$. The average resident of a ban state experiences an increase in distance from approximately 50 miles before the ban to 300 miles after.

Table B.7: Alternative Table 2 results estimating separate models for the 2023 (Panel A) and 2024 (Panel B) post-Dobbs periods

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Panel A: 2021-22 and 2023** | | | | | |
| Total ban | 0.0188 | 0.0046 | 0.0058 | | |
| | (0.0030) | (0.0041) | (0.0042) | | |
| | [0.0052] | [0.0050] | [0.0053] | | |
| Distance | | 0.0134 | 0.0129 | 0.0105 | 0.0103 |
| | | (0.0027) | (0.0027) | (0.0033) | (0.0033) |
| | | [0.0027] | [0.0031] | [0.0026] | [0.0026] |
| Distance$^2$ | | -0.0015 | -0.0015 | -0.0015 | -0.0014 |
| | | (0.0004) | (0.0004) | (0.0004) | (0.0004) |
| | | [0.0004] | [0.0004] | [0.0004] | [0.0004] |
| Appointment constraint | | | 0.0060 | | 0.0035 |
| | | | (0.0028) | | (0.0033) |
| | | | [0.0028] | | [0.0036] |
| Marginal effect of the average ban | 1.89% | 2.52% | 2.62% | | |
| | (0.31) | (0.31) | (0.32) | | |
| | [0.53] | [0.36] | [0.34] | | |
| **Panel B: 2021-22 and 2024** | | | | | |
| Total ban | 0.0124 | 0.0113 | 0.0138 | | |
| | (0.0036) | (0.0047) | (0.0049) | | |
| | [0.0046] | [0.0057] | [0.0057] | | |
| Distance | | 0.0032 | 0.0035 | 0.0068 | 0.0066 |
| | | (0.0032) | (0.0032) | (0.0029) | (0.0039) |
| | | [0.0028] | [0.0030] | [0.0026] | [0.0029] |
| Distance$^2$ | | -0.0006 | -0.0007 | -0.0011 | -0.0011 |
| | | (0.0005) | (0.0005) | (0.0004) | (0.0005) |
| | | [0.0004] | [0.0004] | [0.0004] | [0.0005] |
| Appointment constraint | | | 0.0085 | | 0.0059 |
| | | | (0.0032) | | (0.0033) |
| | | | [0.0036] | | [0.0034] |
| Marginal effect of the average ban | 1.25% | 1.44% | 1.80% | | |
| | (0.37) | (0.41) | (0.46) | | |
| | [0.46] | [0.51] | [0.54] | | |
| **Panel C: Difference in marginal effects between 2023 and 2024** | | | | | |
| Difference in marginal effects between 2023 and 2024 | 0.64% | 1.08% | 0.82% | | |
| | ( 0.34) | ( 0.38) | ( 0.43) | | |
| | [0.52] | [0.54] | [0.57] | | |
| Controls | yes | yes | yes | yes | yes |
| State∗Year fixed effects | no | no | no | yes | yes |

This table reports an alternative specification of Table 2. Rather than estimating a single model pooling all two post-Dobbs years, we estimate two separate models—one for each post period. In both panels, the pre-Dobbs period consists of the two years 2021–2022. Panel A compares the pre-Dobbs period to 2023 as the post-Dobbs period. Panel B compares the pre-Dobbs period to 2024. The last row in each panel presents the estimated effect of a total abortion ban that increases distance from 50 miles before the ban to 300 miles after, roughly corresponding to the average ban. Panel C provides p-values for tests of differences between the marginal effects estimated in Panels A and B, obtained with cluster bootstrap Wald tests based on 1,000 bootstrap runs.

Table B.8: Alternative Table 3 results using monthly instead of yearly observations

| | (1) | (2) | (3) |
|---|---|---|---|
| Total ban | 0.0134 | 0.0040 | |
| | (0.0026) | (0.0034) | |
| | [0.0044] | [0.0044] | |
| 6-week ban | 0.0136 | 0.0151 | |
| | (0.0025) | (0.0042) | |
| | [0.0020] | [0.0044] | |
| Distance | | 0.0103 | 0.0110 |
| | | (0.0023) | (0.0019) |
| | | [0.0024] | [0.0023] |
| Distance$^2$ | | -0.0012 | -0.0013 |
| | | (0.0003) | (0.0003) |
| | | [0.0003] | [0.0003] |
| Difference between any and 6-week clinic | | -0.0003 | 0.0083 |
| | | (0.0031) | (0.0024) |
| | | [0.0032] | [0.0019] |
| Difference between any and 6-week clinic$^2$ | | 0.0003 | -0.0009 |
| | | (0.0006) | (0.0006) |
| | | [0.0005] | [0.0004] |
| Controls | yes | yes | yes |
| State∗Year fixed effects | no | no | no |

Notes: Alternative specification of Table 3 in which counties are observed monthly rather than annually. All controls are lagged six months to allow for gestation. Standard errors in parentheses are clustered at the county level, while those in square brackets are clustered at the state level.