Post-Roe Planning: The Effect of *Dobbs v. Jackson* on Contraceptive and Sterilization Choices*

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Abstract

In 2022, the Supreme Court's decision in Dobbs v. Jackson Women's Health Organization removed federal protections for abortion, prompting significant changes in reproductive health behaviors. This study examines the impact of the Dobbs ruling on contraceptive and sterilization decisions, comparing states perceived as hostile to abortion with those that were not. Using MarketScan data on millions of employees' use of healthcare, we find that the ruling led to an 11% increase in female sterilization procedures and a 13% increase in male sterilization procedures in abortion-hostile states. Additionally, women in these states shifted from short-acting reversible contraceptives (SARCs) to long-acting reversible contraceptives (LARCs), which are more effective.

Keywords: abortion; contraception; family planning

JEL Codes: J31, J16, J22

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1 Introduction

This paper studies the impact of state-level abortion bans on individuals' contraceptive choices, examining how policy changes influence individuals' decisions to adopt highly effective methods, including sterilization. Recent legal and legislative shifts, particularly following the Supreme Court's decision in *Dobbs v. Jackson Women's Health Organization* (2022), provide a unique context to investigate these effects. By leveraging variation in state-level abortion policies before and after *Dobbs*, this study finds that abortion bans increase the demand for highly effective contraceptive methods among both men and women.

Although federal protections for abortion rights have been in place since the supreme court case of *Roe v. Wade* in 1973, states have been enacting legislation related to abortion for decades. For example, between 2011 to 2013, legislatures in 30 states enacted 205 abortion restrictions, which was more than the total number of abortion restrictions enacted in the entire previous decade.[1] This means that there was a great deal of variation in state-level policy already in place at the time of *Dobbs v. Jackson Women's Health Organization* decision in 2022, when the Supreme Court ruled that the Constitution of the United States does not guarantee a right to abortion, overturning decades of precedence previously set by *Roe v. Wade* (1973) and *Planned Parenthood v. Casey (1992)*. Trigger laws on abortions, or laws that were unenforceable until the overturning of *Roe*, were in place for thirteen states, allowing abortions to be banned automatically or near automatically.

While abortion access is a highly politicized issue, it is also a critical part of maternal healthcare, especially for women experiencing miscarriages or carrying nonviable fetuses. The focus of abortion policy discussions shifted from gestational age limits to concerns about doctors' ability to provide adequate medical care for these women. Given these changes to abortion access, we seek to understand whether the individuals take measures to insure themselves against unplanned or otherwise risky pregnancies in the case that their legal access to abortion is restricted.

To answer this question, we compare how the contraceptive and sterilization choices of people in states hostile to abortion rights and states that retained abortion rights respond to the Dobbs decision. We study the causal impact of the Dobbs decision on short-acting and long-acting contraceptive choices and sterilization choices using a difference-in-differences strategy. Our main data is an individual-level commercial claims panel dataset of both inpatient and outpatient procedures from Merative MarketScan from 2021 to 2022. We aggregate this individual-level claims data to the state and month-year level to assess the percentage of enrollees who get a given procedure for that state and month-year, and use those procedure rates as our outcome. Because we want to understand how threats to reproductive rights affect people's decisions around

[1] "A Surge of State Abortion Restrictions Puts Providers-and the Women They Serve-in the Crosshairs" (Guttmacher Institute, 2024).

contraception and sterilization, states considered hostile to abortion rights – which impose harsher abortion restrictions following the Dobbs decision – are our treated states, while states that retained abortion rights are our control states.

MarketScan data come from a set of employers who share the insurance billing codes of insured employees and their covered dependents and partners. This sample is representative of insured Americans, but is not a sample selected based on their predicted usage of abortions.[2] We believe it is interesting to study how this group responds to abortion bans, especially in light of a changing focus in public debate on concerns about doctors' ability to provide adequate medical care for women experiencing pregnancy complications.

From our main analysis, we find that the Dobbs decision was associated with a 0.004 percentage point increase (11%) in female sterilization procedures and a 0.007 percentage point increase (13%) in male sterilization procedures in states hostile to abortion rights relative to control states. We also find that women shifted from SARC use to LARC use in states hostile to abortion post-Dobbs. Our findings are suggestive that the Dobbs decision had an impact on pregnancy prevention among individuals living in states hostile to abortion.

We make contributions to two main bodies of literature. First, we contribute to research on how people insure themselves against undesired outcomes. The topic of "defensive investments" has been studied within the environmental literature, for instance, looking at how people choose to invest in air purifiers with the chance of pollution in the future (Deschênes et al. (2017)), families' bottled water consumption in response to drinking water violations (Zivin et al. (2011)), and homeowners' takeup of flood insurance based on their perceived flood risk (Petrolia et al. (2013)). Less is known about how people make these decisions within the realm of reproductive health, which we aim to do here. Most closely related to this paper, Pennington and Venator (2024) examine the impact of elections which threatened abortion access on women's contraception choices, finding that in the 2014 to 2020 period, reproductive policy uncertainty caused women to switch to more effective but less preferred birth control, such as IUDs. Our paper expands upon their findings in three ways. First, our paper exploits the landmark Dobbs decision rather than focusing on the 2016 presidential election. Second, our paper also uses a nationally-representative panel dataset of claims beyond patients of Planned Parenthood clinics. Unlike Pennington and Venator (2024), we find weak evidence of an effect of Dobbs on women's choice of birth control methods, which may be due to women having already adapted to the potential loss of legal abortion access by 2022, or because of differences between women using employer-sponsored insurance and those relying on Planned Parenthood for contraception. Finally, our study examines male and female sterilization as a birth control method. As the risks of genetic defects and miscarriage increase with age (Magnus et al., 2019; Frederiksen et al., 2018), restricted abortion access

[2]This is in notable contrast to other studies focused on the Planned Parenthood population, for example Bailey et al. (2023).

might have a particularly salient effect on older couples, who also are more likely to rely on sterilization methods as their preferred form of contraception.[3]

The second literature we contribute to is understanding the effect of the Dobbs decision. Given the significance of the Dobbs decision, researchers have been investigating the direct effects of the policy on abortion, fertility, and maternal health. Based on the Monthly Abortion Provision Study conducted by the Guttmacher Institute, an estimated 1,037,000 abortions were occurred in 2023, which is an 11% increase from 2020, when the last comprehensive estimates were available.[4] At the same time, on fertility, Dench et al. (2023) found that states with abortion bans experienced an average increase in births of 2.3% relative to states where abortion was not restricted. And finally, given the recency of the Dobbs decision, research on the causal impacts of the decision on maternal health are still being evaluated. Early studies have found that post-Dobbs, women have been denied access to otherwise available medications, such as methotrexate, out of fear that the drugsâ off-label abortifacient uses could expose the health care providers to legal ramifications (Reddy et al., 2023). Additionally, it has been documented that women with high-risk pregnancies have been sent home and developed sepsis rather than be given care due to providers first having to determine whether the abortions are "medically necessary" and therefore legally permissible in some states (MacDonald et al., 2022). With these potential health risks to pregnant women, it is important to understand how these policy changes factor into their contraceptive decisions, ultimately influencing fertility and abortion rates, which is the goal of this paper.

The remainder of the paper proceeds as follows. Section 2 provides institutional background on reproductive policies and contraceptive methods. Section 3 describes the MarketScan data used for the analyses. Section 4 presents the empirical strategy and Section 5 discusses the results. Finally, Section 6 concludes.

2 Institutional Background

2.1 Reproductive Policies

Although the Affordable Care Act, passed in 2010, was not explicitly a reproductive policy, it has been broadly interpreted to include contraception methods as part of its coverage of preventative services which led to a rise in contraceptive use (Chuang et al., 2024). With this change, the effective out-of-pocket cost for insurance enrollees for FDA-approved forms of contraception fell to $0.[5] Becker and Polsky (2015) estimated

[3]This is based on a study conducted by the National Survey of Family Growth in 2018, which is discussed in more detail in Section 2.

[4]The Monthly Abortion Provision Study, conducted by the Guttmacher Institute, collects data on procedural and medication abortions provided at brick-and-mortar health facilities (such as clinics or doctorâs offices), as well as medication abortions provided via telehealth and virtual providers in the United States.

[5]According to a press release from the Center for Medicare and Medicaid Services, most plans are required to offer coverage of birth control with no out-of-pocket cost.

that after the passage of the Affordable Care Act, the average out-of-pocket savings per contraceptive user was $248 for the intrauterine device and $255 annually for the oral contraceptive pill, with these reductions in total out-of-pocket spending on contraceptives likely to be most salient for women with private health insurance.

At the same time, the advance of the progressive agenda in 2010 was met by a wave of GOP support that sought to pare back reproductive rights. As mentioned previously, there were a total of 338 abortion restrictions passed from 2010, following the midterm elections when Republicans swept the elections at both a local and federal level, to 2016, when President Donald Trump was elected. These restrictions gave traction for the anti-abortion movement and ultimately culminated with the landmark Dobbs v. Jackson Women's Health Organization decision.

While the official decision release occurred on June 24, 2022, an unsanctioned draft of Justice Samuel Alito's majority opinion on the case was leaked by Politico on May 2, 2022.[6] This became nationwide news, with some news sources positing that the leaked decision solidified the official decision to overturn *Roe*. With the Dobbs decision, about twenty-four states had policies in place that were hostile to abortion rights, detailed in Figure A1, that made it much harder and, in many cases, nearly impossible to get an abortion.

For some people, this trajectory of policy changes around abortion was interpreted as a signal of the weakening of reproductive rights in general. In fact, as of 2024, a survey of public opinion found that one in five people consider the right to use contraception a "threatened right likely to be overturned."[7] Currently, the right to contraception has been protected by two historic Supreme Court cases: *Griswold v. Connecticut* (1965) and *Eisenstadt v. Baird* (1972). The former case established that the constitutional right to privacy included the right of married people to obtain contraceptives, while the ladder expanded this right to unmarried people.[8] Given the Dobbs decision, Congress proposed the Right to Contraception Act to protect the right to obtain and use contraceptives, which passed in the House in July, 2022 but not the Senate. The act was reintroduced in 2023, but this time it did not pass in the House or the Senate.[9] This trajectory of policy changes concerning reproductive rights motivates us to understand how this political context impacts people's contraceptive and sterilization choices.

[6] "Supreme Court has voted to overturn abortion rights, draft opinion shows" (Politico, 2022).

[7] "KFF Health Tracking Poll March 2024: Abortion in the 2024 Election and Beyond" (KFF, 2024)

[8] " The Right to Contraception: State and Federal Actions, Misinformation, and the Courts" (KFF, 2024)

[9] The bills respectively can be found on the congressional archive under *H.R. 8373 - Right to Contraception Act* (Congress 2022) and *H.R. 4121 - Right to Contraception Act* (Congress, 2023).

2.2 Contraception

Long-Acting Reversible Contraception

We focus on Long-Acting Reversible Contraception, which include intrauterine devices (IUDs) and subdermal contraceptive implants. Below, we detail their effectiveness, insertion process, mechanisms of action, and potential side effects.

IUDs are over 99% effective in preventing pregnancy and, depending on the type of IUD (e.g. hormonal, non-hormonal), can last for anywhere between three to twelve years. IUDs are inserted through the vagina and cervix and into the uterus. This is typically a short outpatient procedure that can be completed within an hour.[10] IUDs have different mechanisms of action depending on the type they are. Hormonal IUDs work through slowly emitting low dosages of the hormone progestin that inhibit ovulation and thicken the cervical mucus, which prevent sperm from passing through the cervical canal, and thereby, preventing pregnancy. They are effective after seven days from insertion. The copper IUD, on the other hand, is effective immediately upon insertion and its primary mechanism of action is impairing sperm migration by releasing copper ions. Copper IUDs can also be used as emergency contraception within five days of unprotected sexual intercourse (Friedman and Oluronbi, 2019). Once IUDs are removed, fertility typically returns immediately.

Subdermal contraceptive implants are over 99% effective in preventing pregnancy and can last for up to five years. These implants are matchstick-size rods that are inserted under the skin typically on the upper arm. Like IUDs, the implant procedure is typically quick and performed in an outpatient setting. Once inserted, the implant functions similarly to hormonal IUDs, releasing progestin that inhibits ovulation and thickening the cervical mucus to prevent pregnancy (Bucciero and Parda-Chlebowicz, 2018). Implants are effective immediately if inserted within five days of a person's menstrual cycle or effective after seven days at any other time. Like IUDs, once removed, fertility also returns immediately.

LARCs can be appealing methods of contraception due to the ease of the procedure and the convenience compared to other methods, such as vaginal rings, patches, injections, and oral contraceptives. Additionally, because LARCs remain effective for multiple years after initial insertion, they are often higher efficacy than the aforementioned methods because they are considered "set it and forget it" methods, greatly reducing the possibility for human error (i.e. forgetting to get a new ring, patch, etc). However, LARCs do also come with potential side effects, with the most common being unpredictable or irregular menstrual bleeding (Stark et al., 2022).

[10] In order to be exhaustive in our analysis, we filtered both outpatient and inpatient procedures for all contraceptive and sterilization diagnosis and procedure codes. This is discussed in more detail in Section 3.

Short-Acting Reversible Contraception

In addition to LARCs, we also consider short-acting reversible contraception. This includes injectible contraception, oral contraceptive pills, contraceptive patches, and vaginal rings following the guidelines shared by the Office of Population Affairs, which we discuss further in Section 3.

Permanent Contraception

In our analysis, we include both female and male sterilization procedures, which are both considered permanent methods of contraception and are both generally outpatient procedures.[11] For female sterilization, there are two methods: a tubal ligation, in which the fallopian tubes are cut or removed, or a hysterectomy, in which the uterus is removed. Tubal ligations tend to carry less health risks than hysterectomies and reduce the risk of developing ovarian or fallopian tube cancers. For male sterilization, the primary procedure is a vasectomy, which cuts the flow of sperm to semen. About 80% of vasectomies are performed in the office with local anesthesia alone. Compared to female sterilization, vasectomy is more efficacious, lower cost, and has lower rates of complications (Shih et al., 2011).

Based on a study by the National Survey of Family Growth in 2018, patterns for permanent contraception use varied with age, education, and income.[12] They found that the percentage of contraceptive users who relied on sterilization increased with age, where the rate was less than 10% for users aged 15 to 30 years, 46% for users aged 40 to 44 years, and 61% for those aged 45 to 49 years. Additionally, the percentage of contraceptive users aged 15 to 44 years who chose female sterilization was higher at lower levels of income and education and the use of partner vasectomy was highest among users with an income of at least 300% of the federal poverty level and those with a college degree. However, these trends are changing, with vasectomies becoming more common with a relative increase of 26% from 2014 to 2021 for privately insured men (Huang et al., 2023).

In general, for users of contraceptives aged 15 to 49, 16% relied on LARCs and 36% relied on some form of permanent contraception, such as tubal ligations or partner vasectomy. In the same study group, female permanent contraception was the most common method used at 28%, followed by oral contraceptives at 21%, and male condoms and IUDs at 13% each. Although female sterilization and oral contraceptives have been the two most popular methods since 1982, there have been shifts in the other forms of contraception, including an increase in the number of women who use LARCs.

[11] While sterilization procedures can be reversed, the general consensus in the medical literature is to consider them as permanent contraception.

[12] "Contraceptive Use in the United States by Method" (Guttmacher Institute, 2021)

3 Data

To identify women who have gotten SARCS or LARCs, and individuals who have undergone sterilization procedures, we use proprietary healthcare claims data from Merative MarketScan. MarketScan contracts with large employers, health plans, and government and public organizations to produce a longitudinal dataset of enrollment, encounters, and claims data across inpatient, outpatient, and prescription drug services from these firms' employees and dependents.

For our analysis, we focus on female enrollees aged 18 to 45 years and male enrollees aged 18 years or older, who have had inpatient or outpatient claims with International Classification of Diseases (ICD-10) or Current Procedural Terminology (CPT)/Healthcare Common Procedure Coding System (HCPCS) codes related to LARCs, including intrauterine devices and implants, or sterilization procedures.[13] We filter the claims data for these procedures following the ICD-10 and CPT/HCPCS codes compiled by the Office of Population Affairs, from the U.S. Department of Health & Human Services.[14] The MarketScan data also provides up to five diagnosis and procedure codes for inpatient and outpatient services, so we search across all fields in the inpatient and outpatient claims for a match. We do not consider prescriptions for hormonal birth control because we observe only whether these birth control methods are prescribed and not whether they are filled. As a consequence, we focus on inpatient and outpatient claims to capture patients' initiative to seek out these services. Finally, for enrollees with multiple service dates associated with the same ICD-10 or CPT/HCPCS code, we select the earliest service date recorded in order to reflect the date closest to when an enrollee made the choice to pursue that specific family planning method.

We use MarketScan data from 2021 to 2022. Because the latest claims data we have access to is the end of 2022, we are only able to observe about seven months of the post-period. As a consequence, our results may not reflect the full effect of the Dobbs decision if people's reactions to the policy change are delayed. In light of this limitation, we consider our results a preliminary view of the effect of the Dobbs decision leak and plan to update our estimates with the availability of later data from MarketScan.

4 Empirical Strategy

For our analysis, we create a panel dataset aggregating individual claims to a state and month-year level. Our outcome of interest is the percentage of procedures. Because we want to capture individuals' decisions in anticipation of possible reproductive changes, our treatment date is the date of the *leaked* Dobbs decision,

[13] We also considered prescriptions written for LARCs, however, due to the significantly smaller sample, chose to focus primarily on inpatient and outpatient claims for LARCs.

[14] The guidelines can be found at the provided link. Given that the OPA was focused on contraceptive care for women, to identify sterilization procedures for men (vasectomies), we follow (Pierson et al., 2024).

May 2, 2022, rather than the official Supreme Court decision on June 24, 2022. Accordingly, we also use enrollees' first recorded service date for a given procedure to best approximate the date they made the actual contraceptive choice.

To estimate the causal effect of the Dobbs decision leak on contraception and sterilization choices, we estimate a difference-in-differences (DID) specification of the following form:

$$y_{st} = \alpha + \beta_1 \mathbb{I}\{t \geq \text{May 2022}\} + \beta_2 D_s + \delta(D_s \times \mathbb{I}\{t \geq \text{May 2022}\}) + \lambda_s + \lambda_t + \varepsilon_{st} \tag{1}$$

where y_{st} is the outcome of interest for state s at month-year t, $\mathbb{I}\{t \geq \text{May 2022}\}$ is an indicator variable for being in the post-period, and D_s is an indicator variable for state s having policies that are hostile to abortion rights. We include state fixed effects λ_s and month-year fixed effects λ_t. We cluster our standard errors at the state level because that is our level of variation. The coefficient of interest is δ which is the causal effect of the Dobbs decision leak on states hostile to abortion after the Dobbs decision leak, had the Dobbs decision leak not happened. This coefficient is identified by comparing the outcomes in states hostile to abortion after the Dobbs decision leak to outcomes in states hostile to abortion before the leak and to control states.

We also include the results for an event study to estimate the effects of the leaked Dobbs decision at different time periods, with the following equation:

$$y_{st} = \sum_{\tau \neq -1} \delta_\tau D_s + \lambda_s + \lambda_t + \varepsilon_{st} \tag{2}$$

with y_{st} and D_s being the same as Equation 1 and δ_τ being the effect of the Dobbs decision leak on the outcome τ months from the treatment. The treatment time is normalized to $\tau = 0$ and we exclude $\tau = -1$ as the base period. Again, we include state and time fixed effects, λ_s and λ_t respectively, and cluster by state. The coefficients of interests are δ_τ for all τ in the post period.

Both the DID and the event study rely on two key identifying assumptions: no anticipation and parallel trends. The first assumption of no anticipation assumes that the average outcome in states hostile to abortion before the Dobbs decision leak would have been the same had the Dobbs decision leak actually not happened. This concerns the validity of the estimated counterfactual. This assumption would be violated if enrollees in states hostile to abortion heard that there would be reproductive changes before the treatment date, and altered their behavior. For this reason, we chose to use the Dobbs decision leak, which foreshadowed an overturning of *Roe*, rather than the official decision date a little over a month later as mentioned previously. The second assumption is of parallel trends, which asserts that the treated and

control states would have progressed similarly over time had the treatment not occurred. In other words, we assume that the counterfactual for the states hostile to abortion would have had the same difference from the states that were not hostile to abortion over time in the absence of the Dobbs decision leak.

Next, we assess the possibility of the parallel trends assumption holding in two ways: first, by looking at the mean procedure rates for LARCs and sterilizations over time for treated and control states in Appendix Figures A2, A3, A4 and second, more formally, by presenting the event study plots which we discuss more in Section 5. The first set of graphs in Appendix Figures A2, A3, A4 serve to provide a visual summary of the difference in procedure rates for treated and control states, but because the graphs present a *mean* procedure rate for different state types, it may not capture whether there is a true statistical difference between all the states with trigger laws compared to all the states without them. To formally assess pre-trends, we turn to the event study plots in Figure 1. For LARCs and male sterilizations in Figure 1(a) and Figure 1(c), the difference in procedure rates between the two types of states indicate that there are little to no pre-trend patterns. However, female sterilizations in Figure 1(b) does show evidence of pre-trends which suggests that the selection of treatment and control states need improvement. What these sets of analysis suggest is that the parallel trends assumption might be more likely to hold looking at treated and control for SARC, LARC procedures and male sterilizations, but not for female sterilization procedures. We discuss the possible changes to make to our analysis to remedy this in Section 6.

Another potential concern with our panel is missing data. For all years and months in our sample except for 2022, we have complete data for all states. However, for 2022, MarketScan does not have any claims or enrollees from Delaware and Vermont. Because of this, we have an unbalanced panel for our analysis. The concern with unbalanced data is whether the data are missing randomly, or if they are systematically missing, potentially bias our results. The states with missing data represent a relatively small share of the U.S. population. According to MarketScan's user guide, some state indicators in their data are suppressed in an effort to preserve the anonymity of their data contributor pool, impacting states with smaller populations more often. This could be an issue for our results if state population, or another unobservable characteristic of these missing states, were correlated with the procedure rates. However, the decision for companies to share their data with MarketScan as a vendor likely do not depend on the percentage of their enrollees who get LARCs and sterilization procedures and therefore, these missing states likely do not bias our estimates.

Finally, the last potential limitation of this approach is how we construct our counterfactual. Because the Dobbs decision was on a federal level, all states were technically treated. Thus, it is a challenge finding a true counterfactual where states that have been impacted by the Dobbs decision can be compared to states that have *not* been affected by Dobbs. We choose states hostile to abortion as proxies for states where reproductive rights are more under threat than states hostile to abortion to compare how people in states

under different legislation make their contraceptive and sterilization choices. While states without trigger laws were also subject to the federal ruling of the Dobbs decision, their usefulness as a counterfactual also depends in part on whether the ruling made those states more likely to instate an abortion ban. By setting up our treatment and control states as described, we implicitly assume that states that retained abortion rights are ones where reproductive rights are less threatened.

5 Results

Table 1 below presents results of our baseline DID specification, described in Equation 1. The Dobbs decision triggered sterilization procedures for some men and women. Column 4 indicates that states hostile to abortion post-Dobbs saw a 0.004 percentage point increase (11%) in female sterilization procedures. Column 5 indicates that male sterilizations increased by 0.007 percentage points (13%) as a result of state-level abortion policies post-Dobbs. Overall, the the Dobbs decision leak had no effect on the propensity to consult a doctor concerning birth control (column 3), but it seems to have driven a substitution from less effective forms of birth control (SARCs, column 2) to more effective forms of birth control (LARCs, column 1).

Table 1: Birth Control in States Hostile to Abortion, Post Dobbs Ruling Leak

	(1) LARC	(2) SARC	(3) All Hormonal Female	(4) Sterilization Female	(5) Sterilization Male	(6) Sterilization Male Emp.
Post × Hostile	0.011*	-0.019*	-0.009	0.004*	0.007***	0.009***
	(0.006)	(0.010)	(0.012)	(0.002)	(0.002)	(0.002)
Control Mean	0.445	0.322	0.733	0.036	0.054	0.060
Observations	996	996	996	996	996	996
R-Squared	0.88	0.87	0.90	0.74	0.74	0.73
Adjusted R-Squared	0.87	0.86	0.89	0.72	0.73	0.71

Note: The outcome variable is 100 times the rate of policy holders consulting a doctor about the indicated form of birth control in a given period (columns 1-3), or undergoing a a sterilization procedure (columns 4-6), as indicated. We use consultations rather than prescriptions in our main specification in order to focus on new users, and to make LARC and SARC rates comparable. Standard errors clustered at the state level are in parentheses.

These differences are unlikely to reflect differential trends in states with hostile to abortion relative to other states, since they emerge only post-Dobbs. We present the month-by-month differences in all outcomes in the event-study below in Figure 1. In all cases, there is no evidence that the main results reported in Table 1 are driven by changes between the groups ion the pre-Dobbs leak period.

We next turn to understanding the characteristics of those whose birth control choices are most responsive

to changes in abortion law. Subfigures (e) and (f) of Figure 1 splits the event study for male policy holders into two groups: males with a partner and males without a partner.[15] We see that male employees with wives drive the sterilization response, which is consistent with men taking on some of the increased burden on the household associated with a unplanned pregnancy. The smaller response of men without wives on their heath insurance policy is difficult to disentangle—some may have wives using a different form of health insurance, others may be single, and others may have partners whom they are not married to.

In Figure 2 below, we see that women between 25 and 35 drive the increased usage of LARCs post-Dobbs, consistent with this group being most likely to have an abortion nationwide.[16] For both young women and women later in their reproductive window, we see that abortion bans lead to higher rates of sterilization. The increase in male sterilization occurs for those aged 25-45, but not among younger or older men.

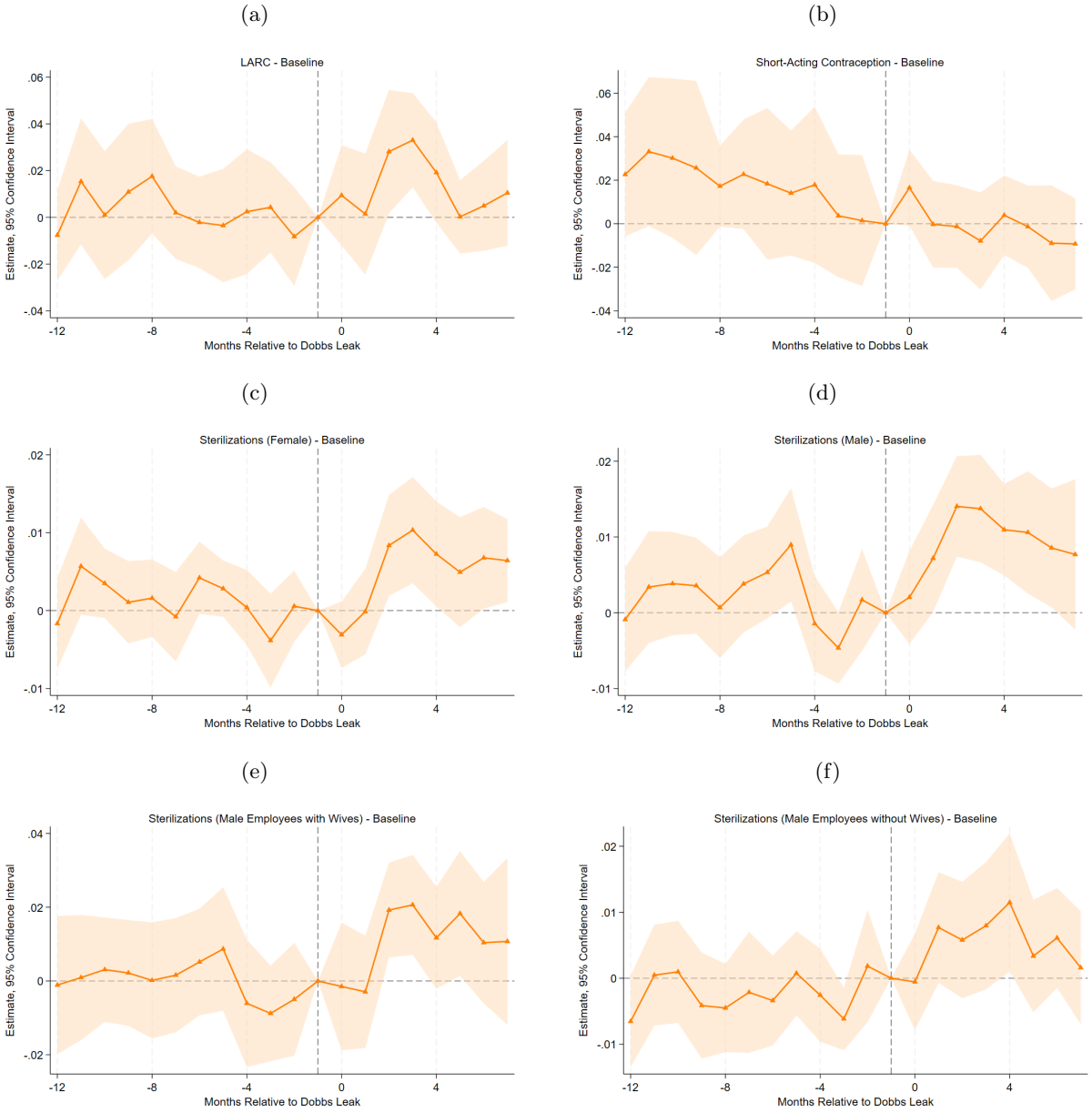
6 Conclusion

In this paper, we provide some early evidence on the effect of the Dobbs decision on LARC and sterilization procedure rates for states with trigger laws. We found that the Dobbs decision led to a 11% increase in female sterilization procedures and a 13% increase in male sterilization procedures, but a limited effect on the propensity to consult a doctor about hormonal birth control.

[15] Column (5) in Table 1 includes male policy holders as well as males who are partners of policy-holders, while column (6), labeled "male emp," restricts to males who are themselves policy holders. There is some suggestive evidence in Table 1 that males who are partners or dependents of policy-holders are less likely to be sterilized and more responsive to abortion law compared to male employee policy holders.

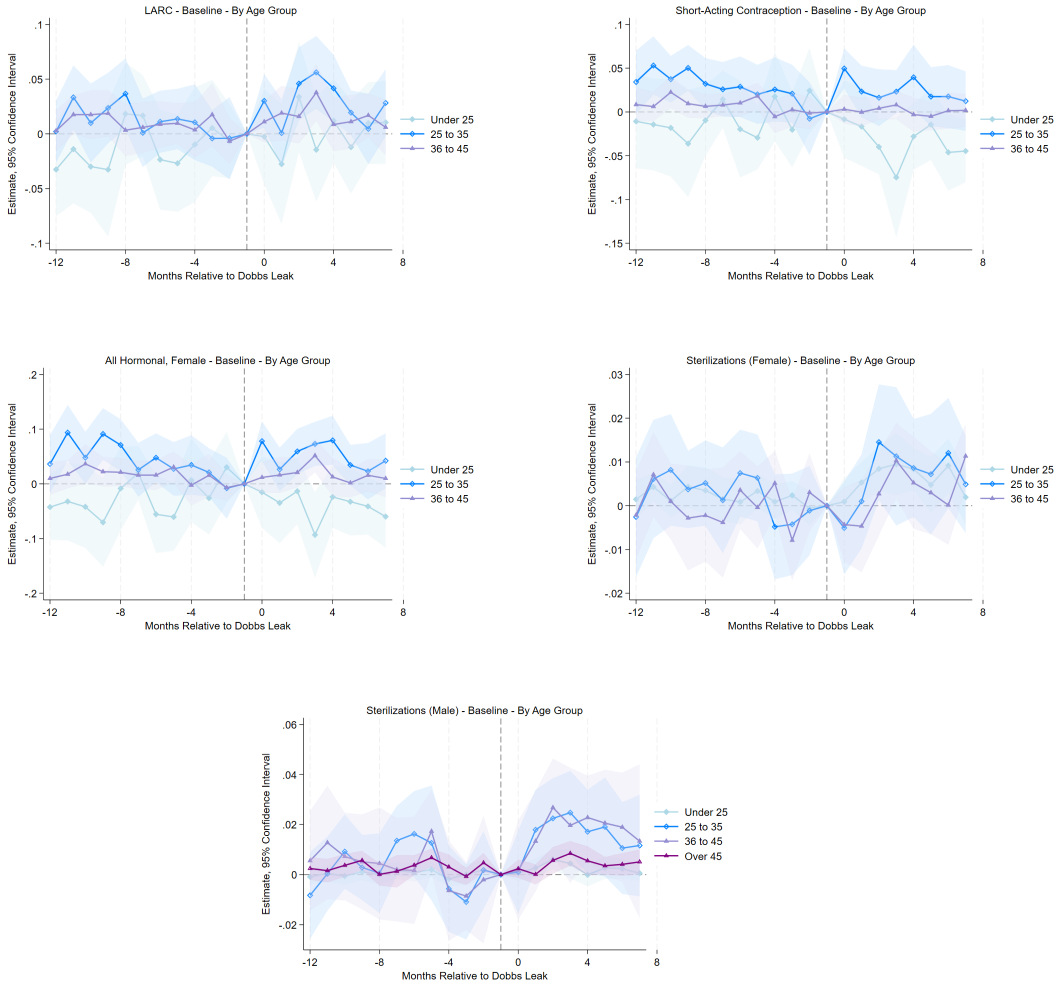
[16] See `https://www.statista.com/statistics/659048/legal-abortions-per-1000-women-in-the-us-by-age/`.

Figure 1: Event Study Coefficient Plots



Note: The base category for these event studies is the month before the Dobbs decision leak, or April, 2022. The graphs report the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on states hostile to abortion for time τ, from Equation 2. The regressions are weighted by number of enrollees and the standard errors are clustered on the state level and both state and time fixed effects are included.

Figure 2: Heterogeneity in Impact of Bans by Age



Note: This figure shows the relationship between months since the Dobbs leak in treatment vs. control states broken down by form of contraception and age. The base category for these event studies is the month before the Dobbs decision leak, or April, 2022. The graphs report the estimate of the coefficient of interest, δ_τ, which is the effect (in percentage points) of the Dobbs decision leak on states hostile to abortion for time τ, from Equation 2. The regressions are weighted by number of enrollees and the standard errors are clustered on the state level and both state and time fixed effects are included.

References

Bailey, M. J., V. W. Lang, A. Prettyman, I. Vrioni, L. J. Bart, D. Eisenberg, P. Fomby, J. Barber, and V. Dalton (2023, June). How costs limit contraceptive use among low-income women in the u.s.: A randomized control trial. Working Paper 31397, National Bureau of Economic Research.

Becker, N. V. and D. Polsky (2015, July). Women saw large decrease in out-of-pocket spending for contraceptives after aca mandate removed cost sharing. *Health Affairs 34*(7), 1204â1211.

Bucciero, M. and M. Parda-Chlebowicz (2018). *Contraception: Overview*, pp. 33â57. Springer New York.

Chuang, C. H., C. S. Weisman, G. Liu, S. Horvath, D. L. Velott, A. Zheng, and D. L. Leslie (2024, January). Impact of the affordable care act on prescription contraceptive use and costs among privately insured women, 2006â2020. *Womenâs Health Issues 34*(1), 7â13.

Dench, D., M. Pineda-Torres, and C. K. Myers (2023). The effects of the dobbs decision on fertility. *SSRN Electronic Journal*.

Deschênes, O., M. Greenstone, and J. S. Shapiro (2017, October). Defensive investments and the demand for air quality: Evidence from the nox budget program. *American Economic Review 107*(10), 2958â2989.

Frederiksen, L. E., A. Ernst, N. Brix, L. L. BraskhÃžj Lauridsen, L. Roos, C. H. Ramlau-Hansen, and C. K. Ekelund (2018, March). Risk of adverse pregnancy outcomes at advanced maternal age. *Obstetrics amp; Gynecology 131*(3), 457â463.

Friedman, J. and R. A. Oluronbi (2019). *Types of IUDs and Mechanism of Action*, pp. 29â39. Springer International Publishing.

Huang, Z., M. J. Hyman, and O. A. Raheem (2023, September). Trends in the vasectomy rate among privately insured men aged 18â64 in the united states between 2014 and 2021. *Urology 179*, 80â86.

MacDonald, A., H. B. Gershengorn, and D. C. Ashana (2022, November). The challenge of emergency abortion care following the dobbs ruling. *JAMA 328*(17), 1691.

Magnus, M. C., A. J. Wilcox, N.-H. Morken, C. R. Weinberg, and S. E. HÃ¥berg (2019, March). Role of maternal age and pregnancy history in risk of miscarriage: prospective register based study. *BMJ*, l869.

Pennington, K. and J. Venator (2024, May). Reproductive policy uncertainty and defensive investments in contraception. *NBER Summer Institute*.

Petrolia, D. R., C. E. Landry, and K. H. Coble (2013, March). Risk preferences, risk perceptions, and flood insurance. *Land Economics 89*(2), 227â245.

Pierson, B. C., A. Banaag, M. L. Janvrin, and T. P. Koehlmoos (2024, May). Vasectomy incidence in the military health system after the reversal of roe v. wade. *International Journal of Impotence Research*.

Reddy, S., M. Saxon, N. Verdecias, R. Biviji, R. Don, E. Kizer, and S. Mishra (2023). Parallel crisis by state lines: the unintended consequences of dobbs in health care. *Clin Med 5*, 1051–13.

Shih, G., D. K. Turok, and W. J. Parker (2011, April). Vasectomy: the other (better) form of sterilization. *Contraception 83*(4), 310â315.

Stark, E. L., A. M. Gariepy, and M. Son (2022, October). What is long-acting reversible contraception? *JAMA 328*(13), 1362.

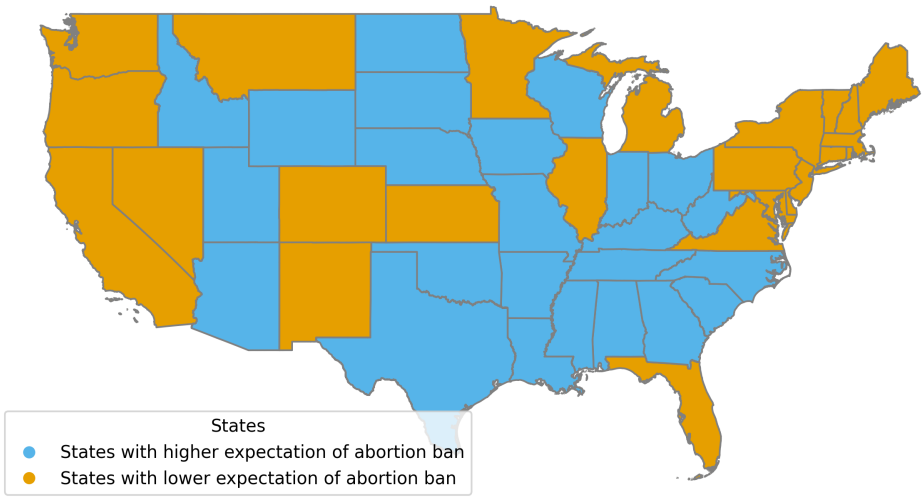
Zivin, J. G., M. Neidell, and W. Schlenker (2011, May). Water quality violations and avoidance behavior: Evidence from bottled water consumption. *American Economic Review 101*(3), 448â453.

A Appendix

Appendix Table A1: Summary table of panel data used for regressions, shown by procedure

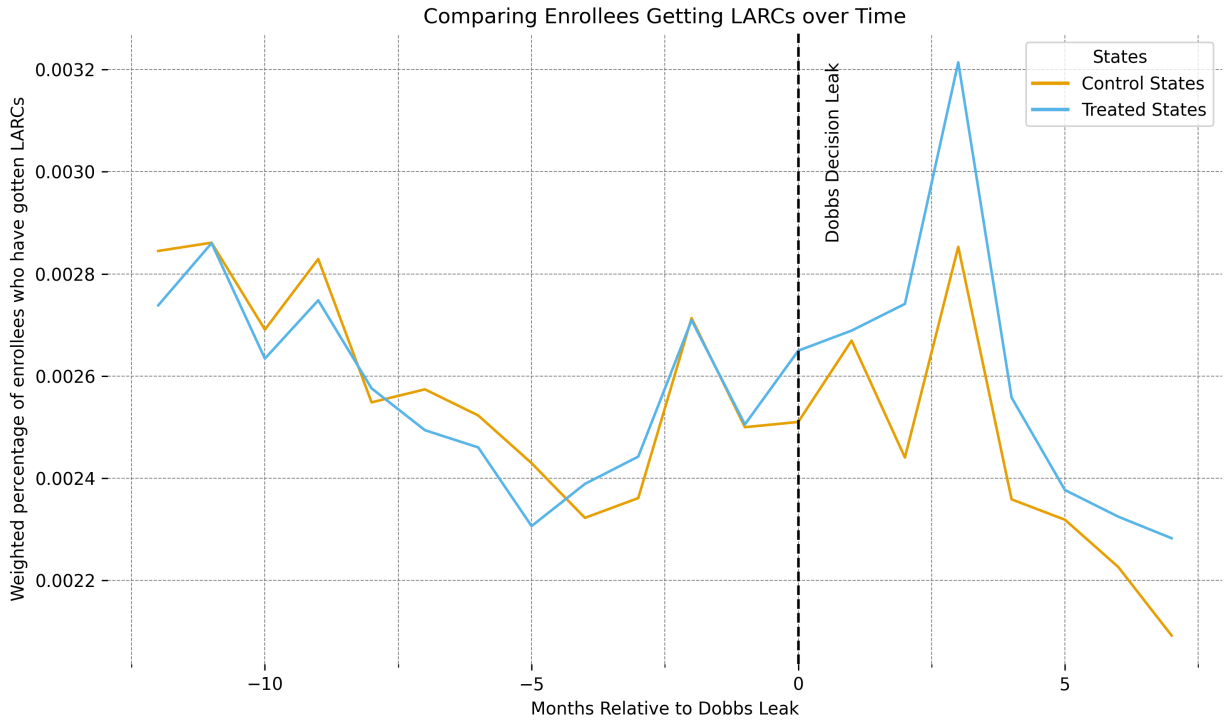
	LARCs	SARCs	Sterilization (F)	Sterilization (M)	Sterilization (M, with wives)	Sterilization (M, without wives)
Number of enrollees in a given state and month-year with procedures	294	258	28	65	33	19
Total number of enrollees in a given state and month-year	72,097	72,097	72,097	115,702	33,652	45,796
Percentage of enrollees in a given state and month-year with procedure	0.4%	0.4%	0.04%	0.06%	0.1%	0.04%

Appendix Figure A1: Map of treated and control states

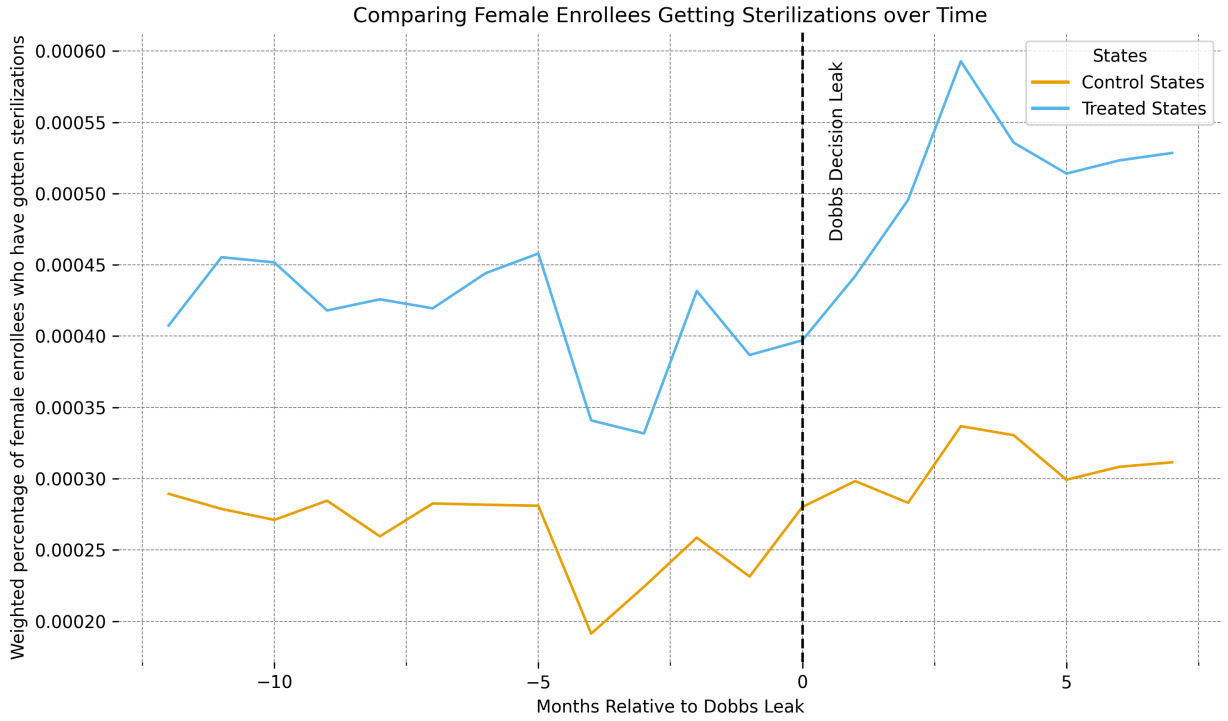


Note: The states where there was a reasonable expectation that abortion would be severely limited, restricted, or banned were Alabama, Arizona, Arkansas, Georgia, Idaho, Indiana, Iowa, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, West Virginia, Wisconsin, and Wyoming. We define states with higher (and lower) expectation of abortion bans following data on abortion policies gathered by the *Center for Reproductive Rights*. We used the Wayback Machine to view their classification of states in 2022, two months after the Dobbs decision passed.

Appendix Figure A2: Weighted mean percentage of enrollees getting LARCs over time



Appendix Figure A3: Weighted mean percentage of female enrollees getting sterilizations over



Appendix Figure A4: Weighted mean percentage of male enrollees getting sterilizations over time

