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Can policies affect preferences? Evidence from random variation in abortion jurisprudence

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Abstract

Turning to the courts to vindicate rights has often led to resistance and subsequent acceptance. This paper investigates the effects of randomly assigned judges on abortion cases on subsequent legislative actions and shifts in public attitudes in the United States from 1971 to 2004. By examining comprehensive data from appellate and district abortion cases, our analysis reveals three primary findings. First, verdicts in abortion cases are significantly influenced by the judges' biographies. Second, precedents that oppose abortion tend to stimulate legislative actions aimed at restricting access to abortion services. Third, public opinion exhibits a temporary shift against legalized abortion following pro-abortion rulings, particularly in the context of elective abortions. These shifts suggest a pattern of initial resistance followed by gradual acceptance. In general terms, these results contribute towards identifying the origin of norms as a function of judicial decisions.

Keywords: Backlash; expressive law; abortion; norms

JEL classification: *D*72; *K*36; *P*48; *Z*1

1. Introduction

Do policies influence preferences? This is a subject of ongoing debate. In one view, courts serve as "teachers", telling society what is right or wrong (Caldeira and Gibson, 1992). Many survey experiments are consistent with this view. They document that preferences often conform to court rulings.[1]

[1] Survey experiments in different legal areas – affirmative action (Clawson et al., 2001), telecom regulation (Clawson et al., 2001), church–state separation (Unger, 2008), health-care reform

But many observational studies find the opposite. History provides many examples of court decisions eliciting backlash where preferences move in the opposite direction of the court rulings (Bartley, 1969; Dolbeare and Hammond, 1971; Post and Siegel, 2007; Sunstein, 2007). Formal political economy has tried to explain the backlash (Bénabou and Tirole, 2012; Acemoglu and Jackson, 2017). None of the models predicts a temporary backlash followed by acceptance – known as "thermostatic effects" in the political economy (Ura, 2014).

Our study offers a conceptual framework that models the interaction between external factors (such as legal changes) and internal responses (such as public backlash) in shaping behaviors toward abortion. Drawing on the framework of Bénabou and Tirole (2012) for legal compliance, we categorize motivations for following or resisting the law into three types: extrinsic (responding to external pressures), social (influenced by societal norms), and intrinsic (individual beliefs). These categories allow us to understand how different legal regimes, particularly those regulating access to abortion, affect individual actions and broader social attitudes.

We distinguish between two sets of factors: external and internal. External factors are those imposed by the law, such as the ease of accessing abortion services. Internal factors, however, are shaped by individual attitudes towards abortion, influenced by moral, social, and political beliefs. These factors are crucial for understanding how legal changes can provoke both immediate and long-term responses, which we term "thermostatic effects". The interaction between these two sets of factors leads to different behavioral outcomes. For instance, a legal ruling that increases access to abortion (an external factor) may immediately trigger a backlash, as individuals or groups opposed to abortion intensify their resistance through protests, donations, or shifts in political support (an internal factor). However, if the perceived costs of the backlash, such as the effort involved in sustaining protests or organizing opposition, are high relative to the costs of complying with the law, we argue that the backlash will be temporary. Conversely, if the costs of the backlash are low, resistance may persist over time, creating a more durable opposition to the law.

This framework helps explain both the short-term backlash and longer-term shifts in public opinion documented in the literature. For example, after *Roe v. Wade*, studies revealed an immediate backlash from Republicans (Franklin and Kosaki, 1989), yet support for abortion access eventually increased

(Christenson and Glick, 2015), and gay rights (Stoutenborough et al., 2006) – corroborate this view. In particular, Zink et al. (2009) found that the more judges signing on to an opinion or the more precedent there was, the more subjects' preferences were shaped, regardless of whether subjects initially agreed with the opinion.

among broader segments of society (Brickman and Peterson, 2006; Hanley et al., 2012). Extending beyond *Roe v. Wade*, Ura (2014) and Hernandez (2014) also identify a pattern of initial resistance to legal changes, followed by a gradual decay in the backlash as the costs of opposition outweigh the benefits. The framework not only aligns with historical patterns but also offers insights into how legal decisions affect social norms over time. It suggests that while unpopular legal decisions may initially provoke resistance, this resistance can diminish if compliance becomes less costly or if societal norms gradually shift in favor of the law. In essence, legal changes may have both immediate effects on public attitudes and longer-term impacts on societal behavior, with the latter often reflecting an adaptation to the new legal environment.

We focus on Circuit Courts because of their significant role in shaping laws that can drastically influence societal behavior. The 2014 Fifth Circuit Court decision upholding a Texas law, which led to the closure of one-third of abortion clinics, illustrates this influence. This decision had a big impact on access to legal abortions, forcing many women to travel hundreds of miles. Several studies link increased travel distance to fewer abortions (Lindo et al., 2020; Myers and Ladd, 2020; Myers, 2024).[2] Our research draws upon similar cases to investigate how state abortion regulations are shaped by Circuit Court decisions.

To isolate the causal effects of judicial decisions on abortion, the ideal experiment would involve randomly assigning court rulings on this issue. However, in the absence of such randomization, it can be difficult to disentangle the effects of court decisions from broader societal trends, which can also drive the backlash. This paper addresses this challenge by utilizing the random assignment of judges to cases, where their predictable voting

[2]Our conceptual framework assumes that court rulings on state laws influence action costs. Supporting this assumption is a substantial body of empirical research on the impacts of state abortion regulations. According to the Center for Disease Control, roughly one million fetuses are legally aborted in the United States every year (Centers for Disease Control and Prevention, 2013). For 1,000 live births, there are 228 abortions, and for every 1,000 women aged 15–44, there are 14.6 abortions, in 2010. Studies find that state abortion regulations affect various outcomes such as fertility (Levine et al., 1999), reproductive behavior (Klick and Stratmann, 2003), child and adult outcomes (Gruber et al., 1999), and even crime (Donohue and Levitt, 2001, 2020; Foote and Goetz, 2008). The legalization of abortion allowed women to delay motherhood and marriage, leading to significant social changes (Myers, 2017). Many of these studies use variation in when abortion became allowed and find large effects. For example, legalizing abortion accounted for 25 percentage points of the 31-percentage-point drop in murder between 1991 and 1998 (Donohue and Levitt, 2001). We complement this literature by showing that state abortion regulations are affected by the Circuit Court rulings. We posit that this finding complements the analysis of the regulations used in prior studies. In 1970, abortion became legal in five states. But four of the five states are all in one Circuit. Taken together, the evidence points towards the power of court rulings on state laws to influence action costs.

patterns are linked to their biographical characteristics. This randomness in judge assignment provides an opportunity to estimate the causal impact of judicial decisions on both legislative actions and societal attitudes. We construct an instrumental variable (IV) based on the composition of assigned judicial panels. Our analysis confirms that this approach satisfies the exclusion restriction, as the biographical characteristics of judges are unlikely to directly influence societal outcomes. The reasons supporting this assumption will be discussed in more detail later in the paper.

Circuit Courts play a pivotal role in establishing precedents across multiple states, often affecting 4–9 states per jurisdiction. With the Supreme Court reviewing less than 2 percent of Circuit Court cases, these appellate courts act as policymaking bodies. They review District Court decisions and are crucial in the judicial hierarchy. We leverage the inherent random variation in judge assignments across both Circuit and District Courts to conduct our analysis. This dual-layer randomization creates quasi-experimental conditions. At the Circuit Court level, we analyze verdicts based on the panel composition. At the District Court level, we examine how judge assignments influence the presence of Circuit Court cases.

We utilize the varying compositions of these judicial panels as IVs. This approach enables us to estimate the causal impact of Circuit Court rulings and to estimate the impact of pro-abortion rulings relative to the counterfactual of anti-abortion rulings. The counterfactual is anti-abortion ruling because the verdict has to be decided either for or against a party. By examining the panel composition in each case, we can discern the influence of judicial decisions on legal outcomes across a broad number of US states. Leveraging the District Court judge assignment, we can identify another counterfactual, that of any Circuit Court ruling relative to the counterfactual of no ruling. Putting these two estimates together arithmetically, we can observe, for example, if there is a Republican backlash to pro-abortion rulings relative to the counterfactual of no-ruling. The reason we can do this is because the hierarchical court system and two-tiered randomization are analogous to coin flips. Our estimation strategy in the Circuit Courts captures the effect of the heads-or-tails coin flip (pro-abortion versus anti-abortion precedent). Our estimation strategy using the District Courts captures the effect of the existence of the coin flip (pro-abortion precedent versus no decision, and anti-abortion precedent versus no decision).

Our analysis encompasses all abortion-related cases from the Circuit Courts, building upon the datasets initially compiled by Sunstein et al. (2006) and Kastellec (2013). We adopt their methodology to broaden our data collection to include all relevant District Court cases. Additionally, we have integrated judge identities into our dataset, sourcing information from the Administrative Office of the US Courts (AOC) and the Public Access to Court Electronic Records (PACER), specifically for District Court cases.

The biographical data of judges, a crucial component of our study, are derived from multiple sources. These include the Appeals Court Attribute Data and the District Court Attribute Data, as well as the Federal Judicial Center. We supplemented these with our own data collection efforts. Our comprehensive dataset covers various aspects of the judges' backgrounds, such as geographical origins, educational history, occupational trajectory, government service roles, military service, religion, race, gender, and political affiliations.

Our empirical framework centers on Circuit judges who are assigned quasi-randomly and subsequently influence policy outcomes. Previous studies, such as Sunstein et al. (2006), have noted discernible voting differences between Democrats and Republicans in Circuit Courts. Notably, public attitudes towards abortion in the United States are also significantly shaped by race and religion (Granberg and Granberg, 1980). In line with these studies, we find that that the odds of establishing a pro-abortion precedent rise by 9 percent with an additional Democrat judge, 17 percent with a White judge, and 12 percent with a non-religious judge on a three-judge panel. Utilizing the quasi-experimental variation in abortion rulings arising from the composition of judicial panels, we find that within two years after an anti-abortion precedent, states within the Circuit are roughly 18 percent more likely to restrict abortion access. The dataset on state regulations comes from Blank et al. (1996).

We next examine abortion attitudes using the General Social Survey (GSS). This has the advantage of asking the identical question on abortion attitudes over several decades. It is the only such dataset and is the same dataset used by prior scholars, which makes for easier comparison. Our findings indicate that pro-abortion precedents trigger a backlash in public attitudes, somewhat more pronounced among Republicans. This group's shift in attitude towards abortion is as significant as the typical difference observed between Republican and Democrat responses in these surveys. This scale of change mirrors the effects observed in an event study by Huq and Mentovich (2015), which focused on the immediate aftermath (within one month) of a Supreme Court ruling. The backlash is not uniform across different types of abortions; it is most substantial for discretionary abortions. Such variability in responses was also noted following the landmark Supreme Court ruling in *Roe v. Wade* (Franklin and Kosaki, 1989). In contrast, there is very little effect, for anyone, of anti-abortion precedents instead of no precedents, while everyone seems to become more anti-abortion in response to pro-abortion precedents, with the effects being somewhat stronger among Republicans.

Importantly, we also find that the backlash is not enduring. Both Republican and Democrat abortion attitudes follow legal precedent after two years. This pattern of a swift backlash followed by rapid decay aligns with time-series analyses of Supreme Court precedents, as noted by Ura (2014). Our study

contributes to the literature on the endogenous response of preferences to policies with causal evidence using naturally occurring variation in a relatively large sample (roughly $N = 400$ Circuit–years), as existing literature predominantly depends on time-series and panel studies, or analyzes policies implemented in a non-random manner.

Further probing heterogeneous effects across different groups, we would like to know if groups respond to precedents (pro- or anti-abortion) likely perceived as illegitimate or incorrectly decided relative to the counterfactual of no precedent. We find suggestive evidence that anti-abortion decisions affect Democrats, while pro-abortion decisions affect Republicans. To put this in quantitative terms: after a pro-abortion decision, Republicans are 20 percent more likely to say yes to "Should it be illegal for a woman to obtain abortion for any reason?" For Republicans, the impact of an anti-abortion decision is negligible. After an anti-abortion decision, Democrats are 9 percent less likely to say yes to "Should it be illegal for a woman to obtain abortion because the family is poor?" For Democrats, the impact of a pro-abortion decision is negligible.

Our paper makes one key contribution. We use the hierarchical nature of the judiciary and the random assignment of judges (Kling, 2006; Maestas et al., 2013; Aizer and Doyle, 2015) to estimate a set of counterfactuals that can address questions such as, what if *Roe v. Wade* was decided in the opposite direction or what if *Roe v. Wade* did not exist as a ruling (Crépon et al., 2013). Notably our study builds on Campbell (2012), which provides a comprehensive examination of how social policies influence mass political behaviors and attitudes, but finds mixed evidence on the effects of policies on attitudes, and thus stresses the need for causal inference. Wheaton (2022) extensively investigates how major US social policy laws over the past 50 years have often resulted in a backlash – where public opinion shifts in the opposite direction of the legislated policy. This finding is significant as it highlights a pervasive phenomenon across various policy areas, from civil rights to gay marriage laws. Wheaton's study offers robust empirical evidence suggesting that such backlashes are not transient. With one exception, Wheaton studies state regulations rather than court rulings.[3] It could be that state regulations being passed through the democratic process give heightened salience to the population about the preferences of others and can mobilize the electorate to vote for different legislators. In contrast, court rulings not being passed through the democratic process require a longer-term strategy, such as the appointment of new judges, and as such the backlash may be more muted.

[3]The exception is Wheaton's analysis of *Roe v. Wade*, whereas Ura (2014) studies all Supreme Court rulings and the latter found a swift backlash followed by rapid decay.

The remainder of the paper is organized as follows. In Section 2, we describe the data. In Section 3, we detail the empirical strategy. In Section 4, we present the impacts of judge identity on abortion rulings. In Section 5, we estimate the effects of abortion precedents. We conclude in Section 6. Details on abortion policies in the United States are given in Online Appendix A.

2. Background and data

2.1. US abortion policy

Several institutional features of the US legal system enable Circuit precedents to shape abortion law. First, the United States has a common law system where judges both apply and make the law. This judicial lawmaking occurs as judges' decisions in current cases become precedents that guide decisions in future cases within the jurisdiction. Second, the Federal Courts system consists of three levels. Litigation, such as a lawsuit asserting that government-mandated waiting periods for an abortion procedure are unenforceable, begins in the District Courts, which are the general trial courts with juries that typically decide *issues of fact*. On appeal, cases go to Circuit Courts, which examine whether the District Court was in error and typically decide *issues of law*; they take facts as given from District Courts, have no juries, and typically only hear cases presenting new legal issues. The 94 District Courts currently receive over 300,000 cases a year and the 12 Circuit Courts 60,000 cases a year, but the Supreme Court hears roughly 100 cases a year. This feature means that Circuit judges create the vast majority of precedents that constitute the law.

Circuit precedents concerning abortion rights and abortion access can act both as policy changes and as statements of values. This creates identification challenges in disentangling cause and effect. Abortion policy in the United States comprises several levels. In the landmark 1973 *Roe v. Wade* case, the US Supreme Court found that constitutional due process rights extend to individual abortions, but any abortion regulation must be balanced with state interests. States may not completely prohibit abortion but have discretion to regulate it, subject to review by the courts. This discretion has led to much variation in abortion policy across states and localities. Laws on whether a woman can get an abortion can be codified in state statutes and local ordinances, as well as in regulations by government agencies. While there is no single comprehensive Federal statute on abortion, a handful of Federal laws target specific components of access to abortions.[4] At the state level,

[4] Among these are: Title X, enacted in 1970, which allocates Federal funding to family planning services for low-income persons but does not directly fund abortions; the Hyde Amendment, enacted in 1976, which bars Medicaid from funding abortions; the Freedom of Access to Clinic

statutory provisions can impose various criteria on women seeking abortions as well as on abortion providers.[5] Other state laws address the public funding of abortions; for example, a majority of states disallow the use of state funds for abortion except when the woman's life is in danger or if the pregnancy was the result of incest or rape.[6] At the local level, cities can impose additional ordinances on abortion access and provision. While governments have discretion in enacting their own abortion laws, they must not conflict with laws of a higher level (e.g., Federal statutes) and they must meet constitutional requirements, which are determined by the courts. A sample of some statutes and subsequent litigation in the courts is provided in Table A.1 in the Online Appendix. To summarize, the Federal Circuit Courts play a prominent role in determining abortion policy by adjudicating legal challenges against government statutes and deciding whether they are enforceable.

A notable feature of US judicial panels relative to many other jurisdictions is the repeated random assignment of judges on every panel. This fact, in combination with newspaper headlines of Circuit Court opinions typically referring to the court and not the identities of the judges on the panel, means that the assignment of judges to a case is unlikely to directly affect socioeconomic outcomes other than through the outcome of the case itself.

These features of the Federal Court system are important in creating random variation in abortion precedents across regions of the United States and over time. Circuit Court decisions form abortion policy by setting legal precedents that become the law of the Circuit and by affirming or invalidating government statutes, ordinances, and regulations. Their injunctions can block enforcement of anti-abortion statutes, thereby ensuring access to abortions. The randomness of the judicial assignment creates wide variation and uncertainty in outcomes even within the same Circuit. Any spillovers whereby circuits are expected to follow other circuits (with some delay) would suggest that the true effect would be larger than what we estimate.

Turning to abortion preferences, the subject of our analysis, between 1973 and 2006, 56 percent of individuals said "Yes" in response to "Should it be *illegal* for a woman to obtain abortion because she does not want more children", 55 percent responded "Yes" for "Woman is single", 60 percent responded "Yes" for "any reason", 17 percent responded "Yes" for "Pregnancy is a result of rape", 19 percent responded "Yes" for "High chance of child's

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Entrances Act of 1994, which made it a Federal crime to block individuals' access to clinics; and the Partial Birth Abortion Ban Act of 2003, which bans late-term abortions.

[5]Examples include requiring parental consent or notification for minors (36 states), gestational limits that forbid abortions after a specified period into a pregnancy (38 states), and imposing specific licensing requirements on clinics and physicians.

[6]An overview of state-level abortion laws is available at http://www.guttmacher.org/statecenter/spibs/spib_OAL.pdf.

defect", and 10 percent responded "Yes" for "Mother's health is endangered" (see Table A.2 in the Online Appendix). Figure A.1 presents variation in abortion attitudes over time with an index (an average of answers to questions about the legality of abortions in different circumstances), which has remained relatively stable since 1978.

2.2. Legal data

To effectively leverage the Federal Court system random variation in abortion precedents across regions of the United States and over time, we collect four legal datasets. Our first dataset comprises the universe of Circuit rulings on abortion cases from 1971 to mid-2004, a total of 145 rulings, collected by Sunstein et al. (2006) and Kastellec (2013). They collected their data using a Lexis search for "core-terms (abortion) and date aft 1960 and constitutional" and "abortion and constitution!". The authors coded each case as either "pro-choice", favoring abortion rights and stronger protections from anti-abortion protest methods, or "pro-life". The cases largely consist of challenges to state statutes, local ordinances, or other government policies regulating abortion access. Examples include parental notification or consent requirements for minors seeking abortions,[7] prohibitions on state funding for abortions,[8] and "partial-birth" abortion bans.[9] A small portion of the cases represent challenges to restrictions on anti-abortion protesting.[10]

Our second dataset comprises the universe of District rulings on abortion cases. We follow the method of Sunstein et al. (2006) and Kastellec (2013) to collect all District Court cases. Our third dataset is collected from the AOC and PACER filings on District Court cases, which allows us to merge judge identities.[11] We use this administrative data for additional randomization checks. Our fourth legal dataset comprises biographical characteristics of judges, which come from several sources: the Appeals Court Attribute Data, the District Court Attribute Data,[12] the Federal Judicial Center, and our own data collection. Altogether we have information on judges' geographical

[7] See, for example, *Akron Center for Reproductive Health, Inc. v. City of Akron*, 651 F.2d 1198 (6th Cir., 1981); *Manning v. Hunt*, 119 F.3d 254 (4th Cir., 1997); *Planned Parenthood Of Northern New England v. Heed*, 390 F.3d 53 (1st Cir., 2004).

[8] See, for example, *D R v. Mitchell*, 645 F.2d 852 (10th Cir., 1981); *State of New York v. Sullivan*, 889 F.2d 401 (2nd Cir., 1989).

[9] See, for example, *Carhart v. Stenberg*, 192 F.3d 1142 (8th Cir., 1999); *Rhode Island Medical Society v. Whitehouse*, 239 F.3d 104 (1st Cir., 2001).

[10] See, for example, *Cheffer v. Reno*, 55 F.3d 1517 (11th Cir., 1995); *U.S. v. Gregg*, 226 F.3d 253 (3rd Cir., 2000).

[11] Note that 16 years of PACER data are available on open source sites for 33 Districts. We used PACER data to obtain judge identities that are missing in the AOC data.

[12] See http://www.cas.sc.edu/poli/juri/attributes.html.

history, education, occupational history, governmental positions, military service, religion, race, gender, and political affiliations. Raw data on religion come from Goldman (1999).[13] We followed their approach and filled in missing data by searching transcripts of Congressional confirmation hearings and other official or news publications on Lexis. We collect these data because religion predicts abortion attitudes in the United States (Granberg and Granberg, 1980). Judges whose religion remained missing or unknown were coded as having no publicly known religious affiliation.

2.3. Data on outcomes

We are interested in three key outcomes to measure the impact of abortion rulings. For impacts on media, we collated mentions of Circuit Court precedents in articles from the major newspaper for the city in which each Circuit Court resides. These are: *The Boston Globe*, *New York Times*, *Philadelphia Inquirer*, *Richmond Times Dispatch*, *Times-Picayune*, *Cincinnati Post*, *Chicago Tribune*, *St. Louis Post-Dispatch*, *San Francisco Chronicle*, *Denver Post*, *Atlanta Journal and Constitution*, and *The Washington Post*. We collected data from 1979 to 2010 from NewsBank.[14]

To study the impacts on laws and regulations, a commonly used database on state laws provides an index on abortion restrictions. This index includes, for example, mandatory delay, bans on using Medicaid to fund abortion, and requiring parental notification (Blank et al., 1996).[15] Sub-indicators for specific laws are coded as the share of the year in which the law is binding. The overall index is the average of sub-indicators.

Next, we use the GSS with US State identifiers.[16] The GSS is an annual individual-level survey from 1973 to 1994 (except for 1979, 1981, and 1992), and biannually after 1994. For each year, the GSS randomly selects a cross-sectional sample of 1,500–3,000 residents who are at least 18 years old. The GSS provides responses from around 1,500 respondents for each survey year between 1973 and 1992, and around 2,900 respondents per survey year

[13] Additional data on religion are available at http://courseweb.stthomas.edu/gcsisk/religion.study.data/cover.htm. Missing data are collected by our own news searches following their method of searching for wedding announcements or funerals.

[14] We used the search term: "abortion in All Text and appellate or circuit in All Text and judgment or 'court ruling' in All Text not 'Supreme Court' in All Text not state near10 appellate in All Text".

[15] For example, a number of states have used state funds to pay for Medicaid abortions for low-income women since the passage of the Hyde Amendment prohibited Federal funding. Other examples include parental consent or notification laws for teenagers seeking abortions.

[16] See http://publicdata.norc.org:41000/gssbeta/index.html. The purchased version of the GSS contains state identifiers.

Table 1. Summary statistics at Circuit–year level (1971–2004).

Number of judges	11.30
	(4.626)
Number of abortion panels per Circuit–year	0.357
	(0.605)
Proportion of Circuit–years with abortion panels	0.294
	(0.456)
Proportion of pro-abortion decisions when case is present	0.548
	(0.473)
Actual number of Democrat appointees per seat	0.461
	(0.326)
Actual number of secular appointees per seat	0.167
	(0.267)
Actual number of Republican × non-White appointees per seat	0.0178
	(0.0749)
Actual number of in-state BA × Black appointees per seat	0.0245
	(0.0891)
Expected number of Democrat appointees per seat	0.436
	(0.161)
Expected number of secular appointees per seat	0.160
	(0.156)
Expected number of Republican × non-White appointees per seat	0.0168
	(0.0380)
Expected number of in-state BA × Black appointees per seat	0.0231
	(0.0404)
Number of Circuit–years	398

from 1994 to 2006. The GSS asks a variety of questions on abortion attitudes. These questions are on the legality of abortions in different circumstances. We aggregate responses into an index, where higher values correspond to reduced support for abortion. We construct demographic controls such as age, gender, educational attainment, and race. As standard in the literature, we also use survey weights provided by GSS in our regressions.

2.4. Summary statistics

Table 1 reports summary statistics on characteristics of judges and cases. A total of 117 Circuit–years of the 398 Circuit–years in our time period experienced at least one abortion precedent. A Circuit–year had on average over 11 active judges from which three judges are randomly drawn per case. The average Circuit–year experienced 0.36 abortion precedents. Among the Circuit–years with any abortion precedents, 55 percent of the precedents were pro-abortion. In an average Circuit–year, 46 percent of the judges in the pool were Democrats, and 17 percent were classified as secular. These categories

are not mutually exclusive, as some judges may fall into both groups. As shown in Table A.2 in the Online Appendix, during these years around 90 percent of GSS respondents believed that a woman should be able to obtain a legal abortion if her health is seriously endangered by the pregnancy, while only 40 percent believe so if the woman wants an abortion for any reason.

3. Specification

3.1. Set-up: simple ordinary least-squares estimation

We begin with a simple approach that assumes that abortion court decisions from the US Circuit Courts are exogenous. In such a scenario, we would expect the following regression to identify the relationship between judicial decisions on abortion and outcomes such as state abortion regulations or individual abortion preferences. The ordinary least-squares (OLS) regression takes the following form:

$$Y_{ict} = \beta_0 + \beta_1 \text{Law(pro-abortion)}_{ct} + \beta_2 \text{Presence-of-case}_{ct} + \beta_3 C_c + \beta_4 T_t + \beta_5 X_{ict} + \beta_6 W_{ct} + \varepsilon_{ict}. \quad (1)$$

Here, Y_{ict} can be measures of abortion attitudes in individual i in Circuit c at time t. $\text{Law(pro-abortion)}_{ct}$ measures the fraction of abortion court rulings in Circuit c that are pro-abortion at time t. The presence of a case, $\text{Presence-of-case}_{ct}$, is a binary variable indicating whether there is any relevant precedent. It is defined as $1[M_{ct\text{-}n} > 0]$, where M is the number of abortion decisions in Circuit c at time t. Note that because M is typically 1 or 0, $\text{Law(pro-abortion)}_{ct}$ is mostly capturing the effect of a pro-abortion ruling. The remaining variables comprise a vector of Circuit and location-by-time characteristics, which includes year and Circuit fixed effects. W_{ct} describes the composition of the pool of judges in the Circuit c at time t that are available to be assigned to the cases. Depending on the outcome being analyzed, X_{ict} would comprise covariates related to that outcome. As the analysis is of an individual's abortion attitudes, the covariates can be age and gender, educational attainment, state, and race (each of which each enter the regression specification as dummies, except for age). Another OLS regression that is of interest is

$$Y_{ict} = \beta_0 + \beta_1 \text{Law(pro-abortion)}_{ct} + \beta_2 \text{Presence-of-case}_{ct} + \beta_3 C_c + \beta_4 T_t + \beta_5 S_s + \beta_6 W_{ct} + \varepsilon_{ict}. \quad (2)$$

Here, Y_{ict} is the measure of state regulations for state s in Circuit c at time t. As the analysis is of state regulations, the covariate related to the outcome is S_s, state fixed effects.

While the OLS approach allows us to explore the relationship between judicial decisions and outcomes, it is likely to yield biased results. The key issue is that judicial rulings may not be exogenous; they could be influenced by underlying societal trends, political pressures, or other unobserved factors that also affect the outcomes we are studying. For example, a court's decision might reflect prevailing public opinions or political climates within a Circuit, leading to omitted variable bias.

To address this potential endogeneity, we employ an IV approach. The IV method allows us to isolate the causal impact of judicial decisions by using an instrument that is correlated with the treatment variable Law(pro-abortion)$_{ct}$ but uncorrelated with the error term ε_{ict}.

3.2. Instrumental variable framework

Our IV framework starts with the assumption that abortion cases in the US Circuit Courts are effectively randomly assigned to judges. We exploit the random judge assignment process to predict the emergence of pro-abortion rulings based on the observable judge characteristics.

Our IV for Law(pro-abortion)$_{ct}$ uses judges' biographical characteristics. To keep a running example in mind, we explain the IV with Democrat-appointed judges. The IV captures the assignment of Democrats to abortion cases in Circuit c at time t. Let the number of Democrats assigned to abortion panels be denoted by N_{ct}. We define

$$p_{ct} = \frac{N_{ct}}{M_{ct}} * \mathbf{1}\left[M_{ct\text{-}n} > 0\right],$$

where M_{ct} represents the total number of cases in a Circuit–year; thus p_{ct} is zero when there are no cases to align with Law$_{ct}$ also being zero. Our identification assumption is

$$\mathbf{E}\left[\frac{N_{ct}}{M_{ct}}\varepsilon_{ict}\middle|\mathbf{E}\left(\frac{N_{ct}}{M_{ct}}\right), 1\left[M_{ct} > 0\right]\right] = 0.$$

In Online Appendix C, we provide randomization checks. Furthermore, the coefficients on the leads serve as additional checks for randomization.

The biographical characteristics of judges are unlikely to directly influence societal outcomes, thus satisfying the exclusion restriction. This condition is likely met due to three key reasons: (1) news reports of Circuit Court opinions usually highlight the court itself, not the individual judges; (2) Circuit Courts handle thousands of cases annually, so the biographical details of judges in a particular case are unrelated to those of judges in other cases; and (3) the final ruling's pro- or anti-abortion stance is the most salient aspect of the precedent. Empirical support from Badawi and Chen (2017) shows no market reaction to

judge identities in the Delaware Court of Chancery, which handles corporate cases closely monitored by the market. Violations of the exclusion restriction are thus likely to be minimal.

To implement our approach, we use party, race, and religion as basic instruments, which we label as "Naïve". Additionally, we use the LASSO method to select instruments (Belloni et al., 2012).[17] All two-stage least-squares (2SLS) estimates use the limited information maximum likelihood (LIML) estimator due to its small sample properties. We also provide an LIML estimate using all the instruments and a visualization of different 2SLS estimates derived from the top 50 judicial characteristics that exhibit high instrument strength.

The coefficient on Law(pro-abortion)$_{ct}$ captures the effect of pro-abortion versus anti-abortion precedent, the sum of the coefficients on Law(pro-abortion)$_{ct}$ and Presence-of-case$_{ct}$ captures the effect of pro-abortion precedent versus no precedent, and the coefficient on Presence-of-case$_{ct}$ captures the effect of anti-abortion precedent versus no precedent. It is worth mentioning that if we limit our analysis to Circuit–years with cases, we only estimate the effect of Law(pro-abortion)$_{ct}$. If we count the number of pro-abortion (+1) and anti-abortion (−1) cases when constructing Law(pro-abortion)$_{ct}$, then we also set the coefficient on Presence-of-case$_{ct}$ to be 0. However, our specification can differentiate between pro-abortion, anti-abortion, and a benchmark that assumes no precedent.

Turning to Presence-of-case$_{ct}$, our IV leverages prior research that shows the demographic characteristics of district judges are associated with reversal rates in Circuit Courts of Appeals (Haire et al., 2003; Steinbuch, 2009; Barondes, 2010; Sen, 2015). Expected reversal rates could thus encourage litigants to pursue an appeal. District Courts assign one judge to a case randomly or rotationally (Bird, 1975; Taha, 2009).[18] Waldfogel (1995) reports one District Court using three separate randomization wheels, whereby each wheel corresponds to the anticipated case length. Related cases (i.e., cases where one decision will substantially resolve all), if filed within a few weeks time, may be consolidated. Waldfogel (1995) reports that plaintiffs can argue

[17] We select instruments among the available biographical characteristics including party affiliation, race, gender, religion, holding a BA degree from an institution within the state, and ABA ratings – the Standing Committee on the Federal Judiciary of the American Bar Association publishes evaluations of nominees to the lower Federal courts and judges perceived as high quality may be less likely to be influenced by their biographical characteristics. We include interactions of all mentioned variables. The characteristics are defined as dummies. Some characteristics, such as Black and non-White (which includes Hispanics and Asians), are included as separate dummies.

[18] Cases being returned on remand from the Courts of Appeals are not randomly assigned. We do not use remanded cases in our dataset.

the case is related to another pending case; if the judge agrees, the cases will be consolidated. In that study, 8 percent of filed cases were accepted as related in 1991 in the Southern District of New York.[19] For the handful of District cases that do overlap such that they are consolidated, we assume the decisions about case relatedness occur in a manner exogenous to judge assignment.

To instrument for Presence-of-case$_{ct}$, we construct a composite of the assigned district judges across District cases within a Circuit. Cases are filed in district court d within Circuit c at time t. We introduce w_{ct} as the weighted average of the judicial characteristics assigned to District cases filed across these District Courts, where the weights are proportional to the number of District cases filed. We define

$$w_{ct} = \frac{\sum_{d=1}^{J_c} K_{cdt} * (L_{cdt}/K_{cdt})}{\sum_{d=1}^{Jc} K_{cdt}},$$

where J_c is the number of District Courts (ranging from 5 to 13) within Circuit c, K_{cdt} denotes the number of cases filed in District Court d within Circuit c at time t, and L_{cdt} denotes the number of judges with a particular characteristic assigned to cases. Note that the weight K_{cdt} cancels in the numerator, which means effectively we are looking at the number of judges assigned to abortion cases across all districts within a Circuit divided by the number of District Court cases in that year. The rules of appellate procedure mandate appeals to be filed within 30 days of the District decision. Because Circuit cases take on average eight months to resolve (Chen, 2024), we construct w_{ct} using District cases from the current and previous year. We use LASSO to select amongst biographical features.

Due to random assignment being at the Circuit–year level, clustering standard errors yields roughly identical results whether clustering at the Circuit or the Circuit–year level (Barrios et al., 2012). Barrios et al. (2012) show that random assignment of treatment addresses serial and spatial correlation across treatment units. We further check our results using randomization inference that assigns the legal variation to another Circuit and the robustness of our results to using wild bootstrap. Note that our specification assumes that cases in a Circuit are more likely to affect outcomes within the Circuit. Hoekstra (2000) suggests that local media are more likely to report on cases in

[19] In another District Court, if a clerk identifies and two judges agree that a new civil case is related to another open civil case, they will be consolidated in the interests of justice or judicial economy. The clerk brings the possible connection to the attention of the judge of the new case, who then confers with the judge of the earlier case to determine whether they are in fact related cases. Consolidation would only occur for relatively high-frequency case types. In our interviews, one District told us that random assignment occurs within 24 hours of a case filing, which is handled in the order of its arrival.

their community and that local residents are more likely to be aware of those cases than cases in other jurisdictions. Using the newspaper data described previously, we find a positive relationship between the number of abortion decisions and the number of newspaper mentions.

4. The effect of judge identity on court outcomes

Table 2 shows that political affiliation, race, and religion are predictive of judges' abortion precedents. Succinctly put, switching from an all-Republican to an all-Democrat panel raises the likelihood of a pro-abortion precedent by 29 percent and switching from an all-minority to an all-White panel increases the probability by 51 percent (Column 4).[20] Using LASSO, we find that being a Democrat and being secular are relevant characteristics, as are being a minority Republican or a Black judge with a bachelor's degree from within the state, both of whom tend to vote against abortion. When the predictors are used separately, the F-statistic ranges from 8 to 16 (Columns 4–8). Combining these predictors by using the predicted value $\widehat{\text{Law(pro-abortion)}}_{ct}$ as an instrument for $\text{Law(pro-abortion)}_{ct}$ significantly increases the first-stage F-statistic (Kuersteiner and Okui, 2010). Weighting the regressions by the number of precedents in a Circuit–year would also significantly increase the F-statistic.[21]

Table 3 shows these judicial patterns are also found in the population. Consistent with previous research (Granberg and Granberg, 1980), race and religion are strongly linked to abortion attitudes in the US population. Additionally, anti-abortion attitudes are more prevalent among non-White Republicans and among Republicans who were born and reside in the same state. In the GSS, the variable "in-state" (whether the respondent lives in the same state where they grew up) is the closest proxy for an in-state BA degree in the judicial biography data.

Turning to the District Courts, we find that District Court cases assigned judges with prior congressional counsel experience are approximately 33 percent more likely to be appealed (see Table 4). Cases assigned judges born in the 1920s and with other federal experience are 7 percent more likely to be appealed. One reason for certain judges to be appealed more often may be that

[20] The difference in the judge-level sample size between Columns 1 and 5 (326 versus 325) is due to the lack of data for one judge on whether the BA degree is from within the state.

[21] The instruments selected by LASSO are relatively stable across the inclusion or exclusion of controls. There are some differences for the state law outcomes, as the GSS is population-representative, while the state law dataset gives more weight to sparsely populated regions. Nonetheless, the demographic characteristics selected by LASSO remain intuitively reasonable, such as Evangelical Republicans, Black Catholics, and Minority Catholics.

Table 2. First stage: pro-abortion precedent and judicial politics, race, and religion

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Democrat	0.165***	0.227*	0.375**	0.288*	0.179***	0.240**	0.298*	0.221
	(0.0469)	(0.107)	(0.125)	(0.144)	(0.0411)	(0.108)	(0.143)	(0.152)
Secular	0.0744	0.228	0.366	0.379	0.0667	0.209	0.323*	0.301
	(0.0530)	(0.143)	(0.207)	(0.245)	(0.0556)	(0.128)	(0.169)	(0.184)
Non-White	0.0127	−0.171	−0.453**	−0.512**				
	(0.0942)	(0.160)	(0.162)	(0.177)				
Republican × non-White					0.0787	0.256	−1.052**	−1.261**
					(0.224)	(0.572)	(0.429)	(0.422)
In-state BA × Black					−0.171	−0.900***	−1.259***	−1.002**
					(0.157)	(0.176)	(0.269)	(0.346)
N	326	142	44,897	44,897	325	142	44,897	44,897
R^2	0.0318	0.0395	0.640	0.646	0.0347	0.0680	0.671	0.674
F-statistic	11.89	2.232	8.327	4.982	7.761	9.674	15.51	16.26
Pro-abortion measure	Judge vote	Panel vote	% pro-abortion	% pro-abortion	Judge vote	Panel vote	% pro-abortion	% pro-abortion
Controls	No	No	No E(x)	Yes	No	No	No E(x)	Yes
Analysis level	Judge	Panel	GSS	GSS	Judge	Panel	GSS	GSS

Note: First-stage regressions at different levels of data aggregation. The outcome variable is: for judge level, the outcome variable is judge vote (1 if pro-abortion); for panel level, the three-judge panel decision; for GSS level, the share of pro-abortion decisions in a given Circuit–year. Controls are omitted at the judge and panel level, but included at the GSS level, where we always include a control for the presence of a case as well as fixed effects for Circuit and year. In additions, Columns 4 and 8 control for expected proportion of panel judges with the analyzed characteristics. Heteroskedasticity-robust standard errors are in parentheses. Standard errors are clustered at the Circuit–year level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table 3. Relationship between anti-abortion attitudes and demographic characteristics in GSS

	Index					
	(1)	(2)	(3)	(4)	(5)	(6)
Democrat	−0.00168					−0.0149***
	(0.00503)					(0.00472)
Secular		−0.208***				−0.205***
		(0.00602)				(0.00589)
Non-White			0.0685***			0.0645***
			(0.00664)			(0.00643)
Republican × non-White				0.0899***		
				(0.0171)		
Republican × in-state					0.0886**	
					(0.0286)	
Observations	32,982	32,982	32,982	32,982	887	32,982

Notes: The dependent variable is an index of abortion attitudes, created as an average of answers to questions about the legality of abortions in different circumstances. Larger values of the index correspond to greater support for making abortion illegal. The biographical characteristics correspond to instruments used in the main model. Variable "in-state" is the best proxy for in-state BA degree found in the GSS – whether the respondent lives in the same state where they grew up. All models include Circuit and year fixed effects. Standard errors are clustered on Circuit–year level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table 4. First stage: presence of an appeal in Circuit Courts and judicial biographical characteristics in Districtcases

	(1)	(2)
Prior congressional counsel	0.380***	0.335***
	(0.0832)	(0.0972)
Democrat × high ABA Score	−0.0231	−0.0218
	(0.0232)	(0.0251)
Republican × age<40 when appointed	0.00676	−0.0120
	(0.101)	(0.0963)
Born in 1920s × other federal exp.		0.0675**
		(0.0287)
N	44,897	44,897
R^2	0.300	0.309
F-statistic	25.81	19.83
Controls	FE	FE
Analysis level	GSS	GSS

Notes: First-stage regressions at the GSS level – the presence of a Circuit case in a given Circuit–year regressed on the share of District cases with a particular judge biographical characteristic. We control for Circuit and year fixed effects and expected proportion of District cases with the analyzed judge characteristics. Heteroskedasticity-robust standard errors are in parentheses. Standard errors are clustered at the Circuit–year level. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

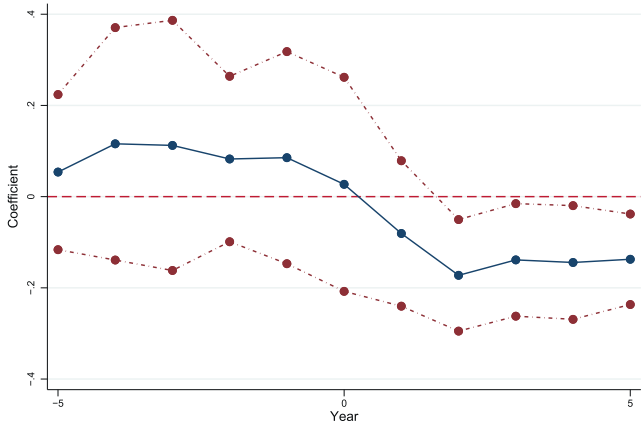
their decisions might be perceived as more political and easier to be reversed. As a robustness check, we examine estimates of the effects of Circuit rulings with and without using this District Court instrument.

5. Estimating the impact of abortion precedents

5.1. State abortion regulations

Figure 1 illustrates the impact of pro-abortion court precedents on state regulations that restrict abortion access. Specifically, it shows how the likelihood of states implementing restrictive abortion regulations, such as mandatory delays, Medicaid payment bans, and parental notification requirements, changes following a pro-abortion court ruling. The analysis uses a model where the state regulation index, which measures the level of abortion restrictions (with lower values indicating fewer restrictions), is regressed on whether a pro-abortion precedent was set in the Circuit Court. The figure demonstrates that within two years after a pro-abortion decision, states are approximately 18 percentage points less likely to maintain these restrictive regulations compared with what would be expected if an anti-abortion precedent had been set instead. The effect is observed immediately, becomes

Figure 1. Pro-abortion precedent impact on state regulations restricting abortion



Notes: This figure displays the estimated impact of pro-abortion precedents on state regulations that restrict abortion. The *y*-axis represents the change in the state regulation index, where lower values indicate fewer restrictions. Each point on the graph corresponds to the impact of a precedent set in that year, with Period 0 indicating the same-year effect and Period 1 indicating the effect of the previous year's precedent. The dashed lines represent 95 percent confidence intervals. The corresponding regression is a single-lag model in which contemporaneous outcome variable (state law index) is regressed on the law variable and presence of a case. Counterfactual is anti-abortion precedent. Instruments are Democrat, secular, and non-White judge characteristics.

statistically significant by the second year, and remains significant thereafter. This finding suggests that states do not just mechanically react to legal changes but substantially adapt their abortion laws in response to pro-abortion precedent.[22]

The magnitude of this effect suggests that the states' responses transcend mere "mechanical" reactions to legal challenges that typically result in the rejection and termination of existing regulations. If it were merely mechanical, we would expect a coefficient of approximately 8 percentage points, calculated by dividing 12 Circuits by 50 states and further dividing by three for the three types of regulations considered. Instead, the observed broader compliance with the pro-abortion precedent across all states within the affected Circuit indicates a more substantive adaptation to judicial influences. It is worth noting that an extensive empirical literature has examined the impact of state abortion regulations. Our results speak against a large political economy literature that argues that court rulings have no effect (Rosenberg, 1993).

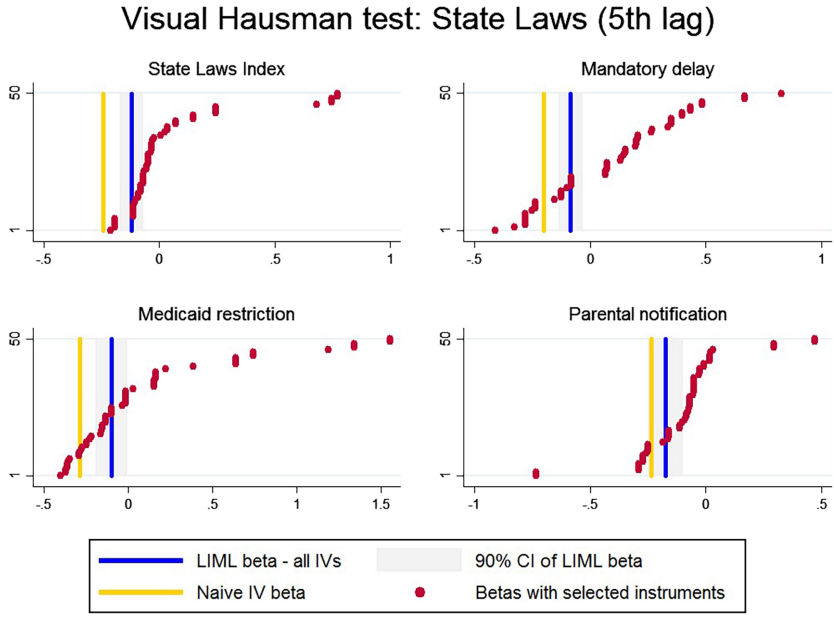
We check if our results are due to the handful of panel compositions of cases. In the context of 2SLS, the Hausman test has a specific application involving the comparison of 2SLS estimates obtained using different sets of instruments for the same endogenous regressors. This process begins by selecting two potentially valid sets of instruments, each of which should be correlated with the endogenous variable but not with the error term, to ensure their validity. The model is first estimated using the first set of instruments to generate one set of 2SLS estimates. It is then re-estimated using a second set of instruments to obtain another set of 2SLS estimates.

The crux of the Hausman test in this scenario is to compare these two sets of estimates. If both sets of instruments are valid and the model is correctly specified, then the estimates should be consistent across the different instrument sets. This application of the Hausman test is important as it serves as a robustness check in empirical analyses, particularly in validating the causal interpretation of estimated relationships. By demonstrating that results are consistent across different sets of plausible instruments, we can more confidently assert the reliability of the findings and the causal effects estimated by the 2SLS method.

We perform 2SLS estimations for each judicial composition among the top 50 with the most statistically significant first-stage instruments. These results are depicted in Figure 2, where the effect on parental notification laws is most prominent in the lower-right panel. Similarly, the LIML estimates in Table 5 demonstrate the strongest impact on parental notification. Further robustness checks like these are provided in Online Appendix D.

[22] Figure 1 displays the coefficients of regressions on Law(pro-abortion)$_{ct}$ in a single-lag model in which the contemporaneous outcome variable (state law index) is regressed on Law(pro-abortion)$_{ct}$ and Presence-of-case$_{ct}$.

Figure 2. Alternative impacts of pro-abortion precedent on restrictive state regulations five years later



Notes: The yellow lines indicate the Naïve 2SLS estimates. The blue lines indicate the LIML estimates (which use all the biographical characteristics), and the shaded gray area around the blue line is the LIML confidence interval. The red dots indicate alternative estimates using other biographical characteristics whose first-stage F-statistics in Circuit–year level regressions yield the top 50 F-statistics controlling for $\mathbf{E}(p_{ct})$.

Building on these findings, we next demonstrate that pro-abortion and anti-abortion precedents exert opposite effects compared with the baseline of no precedent. As shown in Column 3 of Table 6, pro-abortion precedents lower the state law index by 0.067, while anti-abortion precedents raise it by 0.053. These results support the approach of categorizing pro- and anti-abortion decisions as +1 and −1, respectively, in empirical analyses of cumulative laws, consistent with Ura (2014) and Hernandez (2014).

5.2. Abortion attitudes

In this subsection, we study the impact of abortion rulings on abortion attitudes. Table 7 and Table D.1 in the Online Appendix show that Republicans[23] have

[23] We label as Republicans the GSS respondents who identify themselves as strong or leaning Republicans (and not as Independent).

Table 5. Pro-abortion precedent impact on state regulations restricting abortion five years later

	State laws index	p-value	Mandatory delay	p-value	Medicaid restriction	p-value	Parental notification	p-value
OLS	−0.0749***	0.000599	−0.0729***	0.00344	−0.0422	0.205	−0.110***	0.00675
Naïve	−0.241***	0.00409	−0.201**	0.0215	−0.286***	0.00541	−0.236	0.124
LIML	−0.119***	0.0000269	−0.0849***	0.00405	−0.0956*	0.0782	−0.174***	0.0000681
LASSO	−0.218***	0.00868	−0.407***	0.00464	−0.122	0.261	−0.125	0.208
N	1,224		1,224		1,224		1,224	

Notes: The restrictive state regulations index is the average of indicators for: mandatory delay required; ban on using Medicaid to fund abortion; and parental notification required. The main independent variable is pro-abortion precedent in the Circuit–year. Counterfactual is anti-abortion precedent. Law variable is instrumented in rows 2–4 with judicial characteristics (i.e., share of judges with given characteristic on abortion panels). Regressions control for Circuit and year fixed effects. We also control for probabilities of being assigned a judge with these characteristics. Naïve instruments are Democrat, secular, and non-White judicial characteristics. LASSO instruments are the following judicial characteristics: Republican × Evangelical; Catholic × Black; Catholic × non-White. The p-values are based on standard errors clustered by Circuit–year. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table 6. Impact of pro-abortion precedent versus no precedent versus anti-abortion precedent on state regulations five years later

	OLS (1)	Naïve IV (2)	LIML (3)	LASSO (4)	*N* (5)
Restrictive state regulations index					1,224
Law(pro-abortion)	−0.075***	−0.122*	−0.121***	−0.137***	
p-value	0.001	0.059	0	0	
Present	0.031*	0.247	0.053***	0.104	
p-value	0.071	0.457	0.006	0.277	
Law + Present	−0.044**	0.126	−0.067***	−0.033	
p-value	0.010	0.709	0	0.762	

Notes: Restrictive state regulations index is the average of indicators for: mandatory delay required; ban on using Medicaid to fund abortion; and parental notification required. Main independent variable is pro-abortion precedent in the Circuit–year. "Present" is presence of a precedent, $1[M_{ct\text{-}n} > 0]$, where M is the number of cases (typically 0 or 1). Law(pro-abortion)$_{ct}$ is the share of pro-abortion precedents (but typically it is 0 or 1, a single verdict). If there are no cases, Law(pro-abortion)$_{ct}$ is set to 0. The law variable is instrumented in Columns 1–3 with judicial characteristics. "Law(pro-abortion)" captures the effect of pro-abortion precedents relative to anti-abortion precedents. "Law + Present", the sum of two coefficients, captures the effect of pro-abortion precedents relative to no precedent. "Present" captures the effect of anti-abortion precedents relative to no precedent. Regressions control for Circuit and year fixed effects. We also control for probabilities of being assigned a judge with these characteristics. Naïve instruments are Democrat, secular, and non-White judicial characteristics. LASSO instruments are the following judicial characteristics: Republican × Evangelical; Catholic × Black; Catholic × non-White. The presence of an appeal is instrumented for with District IVs. LIML uses the entire available instruments set. The *p*-values are based on standard errors clustered by Circuit–year. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table 7. Impact of pro-abortion precedents compared with anti-abortion precedents on anti-abortion attitudes

	OLS (1)	Naïve IV (2)	LIML (3)	LASSO (4)	*N* (5)
Republicans					
Z-score index	0.110**	0.456**	0.127**	0.176***	2,000
p-value	0.038	0.016	0.023	0.009	
Simple average index	0.048**	0.216**	0.056**	0.089***	2,000
p-value	0.041	0.014	0.025	0.004	
Democrats					
Z-score index	0.087	0.123	0.111**	0.048	2,601
p-value	0.135	0.310	0.045	0.538	
Simple average index	0.040	0.058	0.051**	0.023	2,601
p-value	0.131	0.293	0.043	0.520	

Notes: Dependent variables are abortion attitudes recorded in the GSS answers to questions related to whether the respondent believes abortion for certain reasons should be illegal. Main independent variable is pro-abortion precedent in the Circuit–year. Counterfactual is anti-abortion precedent. The law variable is instrumented in Columns 2–4 with judicial characteristics. Regressions control for age and gender of the respondent and Circuit and year fixed effects. We also control for probabilities of being assigned a judge with these characteristics. Naïve instruments are Democrat, secular, and non-White judicial characteristics. LASSO instruments are the following judicial characteristics: Democrat; secular; non-White Republican; and Black judges with an in-state BA degree. LIML uses the entire available instruments set. Because the GSS is not annual, models use subsample restricted to Circuit–years with at least one case. The upper panel (Columns 1–4) uses the sample of GSS respondents who declare identification with the Republican Party; the lower panel uses respondents identifying with the Democrat Party. The *p*-values are based on standard errors clustered by Circuit–year. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table 8. Impact of pro-abortion versus no versus anti-abortion precedent on anti-abortion attitudes

	OLS (1)	Naïve IV (2)	LIML (3)	LASSO (4)	*N* (5)
Republicans					
Z-score index					6,317
Law(pro-abortion)	0.049	0.267*	0.048	0.132*	
p-value	0.317	0.053	0.391	0.067	
Present	−0.065*	−0.076	−0.065	−0.051	
p-value	0.080	0.476	0.101	0.625	
Law + Present	−0.016	0.191*	−0.017	0.082	
p-value	0.645	0.071	0.655	0.302	
Simple average index					6,317
Law(pro-abortion)	0.021	0.124**	0.020	0.064*	
p-value	0.338	0.048	0.419	0.051	
Present	−0.026	−0.034	−0.026	−0.025	
p-value	0.113	0.478	0.140	0.584	
Law + Present	−0.005	0.090*	−0.006	0.038	
p-value	0.726	0.063	0.727	0.280	
Democrats					
Z-score index					9,092
Law(pro-abortion)	0.112***	−0.002	0.116**	0.015	
p-value	0.006	0.981	0.011	0.831	
Present	−0.036	−0.079	−0.038	−0.037	
p-value	0.217	0.294	0.204	0.619	
Law + Present	0.076**	−0.081	0.077**	−0.022	
p-value	0.012	0.311	0.017	0.731	
Simple average index					9,092
Law(pro-abortion)	0.049***	−0.003	0.052***	0.007	
p-value	0.006	0.943	0.009	0.821	
Present	−0.016	−0.038	−0.017	−0.020	
p-value	0.224	0.256	0.190	0.541	
Law + Present	0.034**	−0.041	0.035**	−0.013	
p-value	0.012	0.250	0.014	0.647	

Notes: Dependent variables are abortion attitudes recorded in the GSS answers to questions related to whether the respondent believes abortion for certain reasons should be illegal. The main independent variable is pro-abortion precedent in the Circuit–year. "Present" is the presence of a precedent, $1[M_{ct\text{-}n} > 0]$, where M is the number of cases (typically 0 or 1). Law(pro-abortion)$_{ct}$ is the share of pro-abortion precedents (but typically it is 0 or 1, a single verdict). If there are no cases, Law(pro-abortion)$_{ct}$ is set to 0. The law variable is instrumented with judicial characteristics. "Law(pro-abortion)" captures the effect of pro-abortion precedents relative to anti-abortion precedents. "Law + Present", the sum of two coefficients, captures the effect of pro-abortion precedents relative to no precedent. "Present" captures the effect of anti-abortion precedents relative to no precedent. Regressions control for age and gender of the respondent and Circuit and year fixed effects. We also control for probabilities of being assigned a judge with these characteristics. Naïve instruments are Democrat, secular, and non-White judicial characteristics. LASSO instruments are the following judicial characteristics: Democrat; secular; non-White Republican; and Black judges with an in-state BA degree. LIML uses the entire available instruments set. Model is not restricted to Circuit–years with at least one case in order to estimate "Present". Columns 1–4 in the upper panel use the sample of GSS respondents who declare identification with the Republican Party, and the lower panel is respondents identifying with the Democrat Party. The *p*-values are based on standard errors clustered by Circuit–year. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Table 9. Impact of pro-abortion precedent on anti-abortion attitudes two years later

	OLS (1)	Naïve IV (2)	LIML (3)	LASSO (4)	*N* (5)
Republicans					
Z-score index	−0.012	−0.333**	−0.012	−0.028	2,004
p-value	0.824	0.025	0.829	0.768	
Simple average index	−0.006	−0.154**	−0.006	−0.008	2,004
p-value	0.804	0.021	0.811	0.836	
Democrats					
Z-score index	0.037	−0.071	0.036	−0.122**	2,751
p-value	0.419	0.509	0.416	0.035	
Simple average index	0.016	−0.039	0.015	−0.062**	2,751
p-value	0.429	0.391	0.426	0.012	

Notes: Dependent variables are abortion attitudes recorded in GSS answers to questions related to whether the respondent believes abortion for certain reasons should be illegal. Main independent variable is pro-abortion precedent in the Circuit–year. Counterfactual is anti-abortion precedent. The law variable is instrumented in Columns 2–4 with judicial characteristics. Regressions control for age and gender of the respondent and Circuit and year fixed effects. We also control for probabilities of being assigned a judge with these characteristics. Naïve instruments are Democrat, secular, and non-White judicial characteristics. LASSO instruments are the following judicial characteristics: Democrat; secular; non-White Republican; and Black judges with an in-state BA degree. LIML uses the entire available instruments set. Because the GSS is not annual, models use the subsample restricted to Circuit–years with at least one case. Columns 1–4 in the upper panel use the sample of GSS respondents who declare identification with the Republican Party, and the lower panel uses respondents identifying with the Democrat Party. The *p*-values are based on standard errors clustered by Circuit–year. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

a somewhat more pronounced increase in anti-abortion attitudes in response to pro-abortion precedents, especially for "Should it be illegal for a woman to obtain abortion for any reason?" The magnitudes are roughly equivalent to the differential between Republicans and Democrats. The effects are observed individually for "does not want more children", "woman is single", "family is poor", "pregnancy is a result of rape", but not for "high chance of child's defect" and "mother's health is endangered". This would be consistent with the finding of Franklin and Kosaki (1989) of backlash over "discretionary" abortions. Democrats are generally less significantly affected than Republicans across the different estimates.

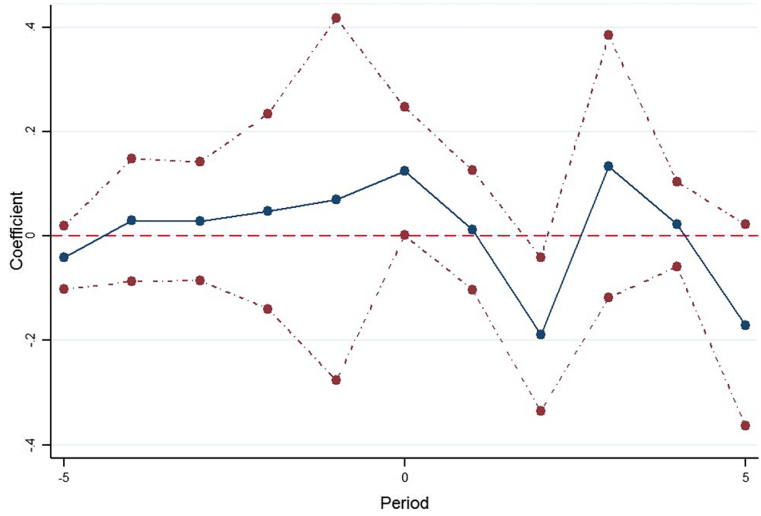
Our analysis suggests that Republicans respond to pro-abortion precedents but not to anti-abortion precedents in specific cases. Column 2 of Table 8 indicates that on average across all reasons, a pro-abortion precedent makes Republicans more likely to oppose abortion for this reason by roughly 12 percent and this is almost entirely due to pro-abortion precedent versus no precedent (compare 0.124 to 0.09). However, Table D.2 reveals that for the question, "Should it be illegal for a woman to obtain an abortion for any reason?", Republicans are roughly 21 percent more likely to oppose

Table 10. Impact of pro-abortion versus no versus anti-abortion precedent on anti-abortion attitudes two years later

	OLS (1)	Naïve IV (2)	LIML (3)	LASSO (4)	*N* (5)
Republicans					
Z-score index					6,317
Law(pro-abortion)	−0.050	−0.426**	−0.038	−0.244***	
p-value	0.336	0.012	0.583	0.001	
Present	0.073*	−0.034	0.066	−0.117	
p-value	0.099	0.730	0.222	0.167	
Law + Present	0.023	−0.459***	0.028	−0.360***	
p-value	0.492	0.001	0.429	0	
Simple average index					6,317
Law(pro-abortion)	−0.023	−0.188**	−0.017	−0.103***	
p-value	0.329	0.012	0.578	0.001	
Present	0.031	−0.020	0.028	−0.059	
p-value	0.115	0.637	0.244	0.106	
Law + Present	0.008	−0.208***	0.011	−0.162***	
p-value	0.562	0.001	0.491	0	
Democrats					
Z-score index					9,092
Law(pro-abortion)	0.017	−0.058	0.022	−0.010	
p-value	0.654	0.653	0.634	0.878	
Present	−0.019	−0.088	−0.021	−0.097	
p-value	0.508	0.157	0.502	0.114	
Law + Present	−0.002	−0.146	0	−0.108	
p-value	0.955	0.189	0.997	0.114	
Simple average index					9,092
Law(pro-abortion)	0.009	−0.030	0.011	−0.012	
p-value	0.592	0.600	0.597	0.682	
Present	−0.010	−0.042	−0.011	−0.045*	
p-value	0.450	0.124	0.458	0.082	
Law + Present	−0.001	−0.071	0	−0.057*	
p-value	0.966	0.136	0.996	0.055	

Notes: Dependent variables are abortion attitudes recorded in the GSS answers to questions related to whether the respondent believes abortion for certain reasons should be illegal. The main independent variable is pro-abortion precedent in the Circuit–year. "Present" is the presence of a precedent, $1[M_{ct\text{-}n} > 0]$, where M is the number of cases (typically 0 or 1). Law(pro-abortion)$_{ct}$ is the share of pro-abortion precedents (but typically it is 0 or 1, a single verdict). If there are no cases, Law(pro-abortion)$_{ct}$ is set to 0. The law variable is instrumented with judicial characteristics. "Law(pro-abortion)" captures the effect of pro-abortion precedents relative to anti-abortion precedents. "Law + Present", the sum of two coefficients, captures the effect of pro-abortion precedents relative to no precedent. "Present" captures the effect of anti-abortion precedents relative to no precedent. Regressions control for age and gender of the respondent and Circuit and year fixed effects. We also control for probabilities of being assigned a judge with these characteristics. Naïve instruments are Democrat, secular, and non-White judicial characteristics. LASSO instruments are the following judicial characteristics: Democrat; secular; non-White Republican; and Black judges with an in-state BA degree. LIML uses the entire available instruments set. Model is not restricted to Circuit–years with at least one case in order to estimate "Present". Columns 1–4 in the upper panel use the sample of GSS respondents who declare identification with the Republican Party, and the lower panel uses respondents identifying with the Democrat Party. The *p*-values are based on standard errors clustered by Circuit–year. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Figure 3. Impulse response: anti-abortion attitudes of Republicans in response to pro-abortion rulings



Notes: Higher values of the anti-abortion attitude index indicate stronger beliefs that abortions should be illegal. All coefficients come from a single-lag model in which a contemporaneous outcome variable (state law index) was regressed on the law variable and presence of a case. Counterfactual is anti-abortion precedent. Instruments are Democrat, secular, and non-White judge characteristics. Period 0 indicates the coefficient on the same-year precedent. Period 1 indicates the coefficient on the last year's precedent. The 95 percent confidence intervals are presented as dashed lines.

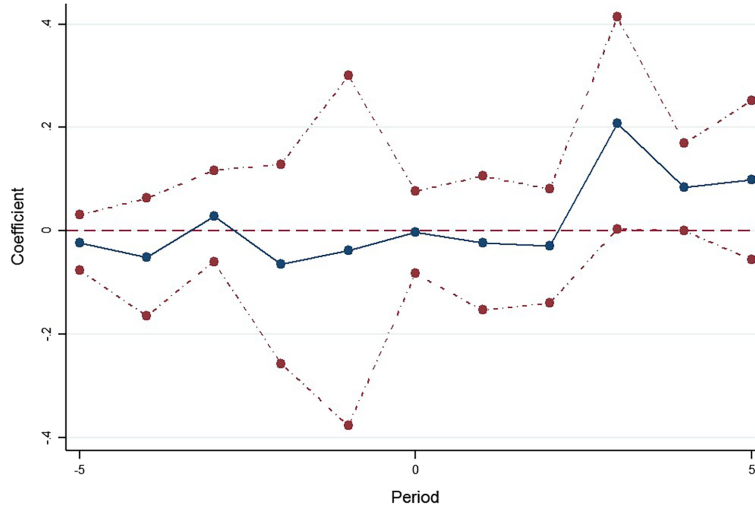
abortion following a pro-abortion precedent – again, driven primarily by the difference between pro-abortion precedents and no precedents (0.205 versus 0.171).

There is very little effect, for anyone, of anti-abortion precedents instead of no precedents. For one case, Democrats increase their pro-abortion attitudes by 8.7 percent when faced with an anti-abortion precedent regarding the question, "Should it be illegal for a woman to obtain an abortion because the family is poor?" compared with no precedent. However, for discretionary reasons such as any reason and desired fertility, Democrats also show a backlash. The conclusions appear robust to alternative specifications as shown in Online Appendix D. Notably, across different estimates, we cannot reject that the effects for Democrats and Republicans are statistically similar.

5.3. Medium-run impact

Within two years, persuasive effects of the law emerge in Tables 9 and D.5, as indicated by the shift in the sign of attitude point estimates. Multiple specifications consistently show persuasive effects: after a pro-abortion

Figure 4. Impulse response: anti-abortion attitudes of Democrats in response to pro-abortion rulings



Notes: Higher values of the anti-abortion attitude index indicate stronger beliefs that abortions should be illegal. All coefficients come from a single-lag model in which a contemporaneous outcome variable (state law index) was regressed on the law variable and presence of a case. Counterfactual is anti-abortion precedent. Instruments are Democrat, secular, and non-White judge characteristics. Period 0 indicates the coefficient on the same-year precedent. Period 1 indicates the coefficient on the last year's precedent. The 95 percent confidence intervals are presented as dashed lines.

precedent, individuals are less likely to hold anti-abortion views two years later. Additional sensitivity analyses in Online Appendix D reinforce these findings.

When distinguishing between pro-abortion and anti-abortion precedents, Tables 10 and D.6 indicate that pro-abortion precedents lead Republicans to adopt more pro-abortion attitudes two years later. This effect can be seen from the coefficient on Law(pro-abortion)$_{ct}$, which generally equals the sum of the coefficients for Law(pro-abortion)$_{ct}$ and Presence-of-case$_{ct}$. Figures 3 and 4 indicate minimal persistent backlash effects among Democrats and Republicans over the following five years.

6. Conclusion

The impact of laws on societal values is critical for two primary reasons. First, empirical evidence helps us discern between conflicting theoretical perspectives on legal effects. Second, it informs judges who assess judicial precedents through cost–benefit analyses (Posner, 1998) or who seek to

align their decisions with public opinion (Breyer, 2006). Understanding these dynamics underpins policy arguments, making it essential to examine the dual effects of backlash and expressive influence on attitudes and behaviors.

Our conceptual framework, drawing on prior empirical studies (Franklin and Kosaki, 1989; Brickman and Peterson, 2006; Hanley et al., 2012; Ura, 2014), elucidates these dynamics. Backlash in attitudes can counteract legal precedents on abortion access. Over time, laws can reshape behaviors, leading to persuasive effects if the affected population's behavior shifts significantly. This framework resonates with Justice Ruth Bader Ginsburg's caution regarding overly ambitious legal changes that incite significant, lasting backlash, suggesting that gradual change fosters more enduring persuasion.

To substantiate this framework, we present causal evidence leveraging the random assignment of US Federal judges and their influence on geographically local precedents. We show that abortion precedents affect states' abortion regulations that are associated with subsequent fertility, reproductive choices, child outcomes, adult outcomes, and crime (Gruber et al., 1999; Levine et al., 1999; Donohue and Levitt, 2001; Klick and Stratmann, 2003; Ananat et al., 2009).

Furthermore, analyzing preferences shows that abortion precedents trigger a backlash through some polarization in attitudes. In certain cases, the impact of an abortion precedent can double the average partisan divide between Republicans and Democrats. Nevertheless, persuasive effects emerge within two years, and generally Republicans and Democrats react similarly to abortion rulings. This evidence aligns with our framework, illustrating that judicial precedents on contentious issues can provoke an initial backlash but ultimately serve a "teacher" role, guiding society on what is considered right or wrong (Caldeira and Gibson, 1992).

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Supporting information

Additional supporting information can be found online in the supporting information section at the end of the article.

Online appendix
Replication files

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