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# Measuring the Chilling Effect

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# MEASURING THE CHILLING EFFECT

BRANDICE CANES-WRONE<sup>†</sup> & MICHAEL C. DORF<sup>‡</sup>

*Supreme Court doctrine grants special protection against laws that “chill” protected speech, most prominently via the overbreadth doctrine. The overbreadth doctrine permits persons whose own speech is unprotected to challenge laws that infringe the protected speech of third parties. The Court has not generally applied overbreadth and the other speech-protective doctrines to other constitutional rights even though other rights could also be subject to a chilling effect. The case law simply assumes that the chilling effect only acts on the exercise of speech, and that this justifies treating speech differently from other rights.*

*We tested these assumptions with respect to abortion rights. By comparing abortion rates with state laws over a two-decade-plus period, we found a statistically significant correlation between laws forbidding late-term abortions and the reduction of not only late-term but also “near-late-term” abortions, i.e., abortions in the roughly one month before the period in which abortions are forbidden. That effect persists even after controlling for potentially confounding variables, such as the number of abortion providers and pro-life public opinion. Moreover, the effect is not limited to the year of enactment or associated with failed policy initiatives, suggesting that the impact is due to the law itself rather than associated publicity. These findings are consistent with, and strongly suggestive of, a chilling effect on abortion providers and/or women seeking abortions. This result undermines the implicit assumption that the chilling effect is unique to laws regulating speech and vindicates the general proposition that laws can chill the exercise of constitutional rights beyond their literal coverage.*

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## INTRODUCTION

Supreme Court case law provides robust remedies for parties claiming violations of the right to freedom of speech based on the

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supposition that without such protections, people will self-censor.<sup>1</sup> Even laws that do not directly target particular parties or that do so unconstitutionally may “chill” their exercise of free speech. In economic terms, speech, or rather information, is a public good. An individual speaker, however, does not capture all of the value of speaking, and so she typically will not risk incurring a substantial legal sanction in order to reap the modest reward that comes to her from her speech.<sup>2</sup> The imbalance between risk and reward makes free speech especially subject to overdeterrence.

Although the chilling effect may account for a wide variety of speech-protective constitutional doctrines,<sup>3</sup> it plays an express role in overbreadth cases. The overbreadth doctrine permits litigants whose own conduct is not constitutionally protected to challenge a law on the ground that it chills the exercise of free speech rights by persons not before the court.<sup>4</sup> As a formal matter, such overbreadth challenges can only be brought by parties claiming violations of the right to free speech or, in some slightly broader formulations, First Amendment rights generally.<sup>5</sup> Some commentators argue, however, that the Supreme Court has in fact permitted overbreadth challenges beyond the First Amendment context, including challenges to laws restricting abortion.<sup>6</sup> Doctors receive relatively small personal benefits for performing each additional abortion relative to the stiff criminal penalties that could result from a charge that the abortion did not fall within the bounds of legally permissible circumstances. As a result, laws

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<sup>1</sup> See Daniel A. Farber, Commentary, *Free Speech Without Romance: Public Choice and the First Amendment*, 105 HARV. L. REV. 554, 568 (1991) (“Many First Amendment doctrines reflect the fear that certain laws overdeter speech and thus lead to a suboptimal amount of total information disseminated in society.”); see also *United States v. Williams*, 553 U.S. 285, 292 (2008) (“[T]he threat of enforcement of an overbroad law deters people from engaging in constitutionally protected speech, inhibiting the free exchange of ideas.”).

<sup>2</sup> See Farber, *supra* note 1, at 570 (“Speech is more likely to be chilled than other activities because most of its benefits are not captured by the speaker.”).

<sup>3</sup> See *id.* at 568–79 (using the chilling effect to explain free speech limits on defamation liability, vagueness, overbreadth, time, place, and manner restrictions, hate-speech prohibitions, and more).

<sup>4</sup> See, e.g., *Broadrick v. Oklahoma*, 413 U.S. 601, 612 (1973) (characterizing the First Amendment overbreadth doctrine as an exception to “traditional rules of standing”).

<sup>5</sup> See *United States v. Salerno*, 481 U.S. 739, 745 (1987) (“[W]e have not recognized an ‘overbreadth’ doctrine outside the limited context of the First Amendment.” (citing *Schall v. Martin*, 467 U.S. 253, 269 n.18 (1984))).

<sup>6</sup> See, e.g., Michael C. Dorf, *Facial Challenges to State and Federal Statutes*, 46 STAN. L. REV. 235, 268–79 (1994) (explaining that case law permits overbreadth challenges in more circumstances than those officially recognized); Richard H. Fallon, Jr., *Fact and Fiction About Facial Challenges*, 99 CALIF. L. REV. 915, 946–47 (2011) (“Prior to [2006] virtually all of the abortion cases reaching the Supreme Court involved facial attacks in which the Court accepted this framing of the question presented, without pausing to ask whether the challenger could succeed on an as-applied theory.”).

restricting abortion may chill doctors from performing legal as well as illegal abortions.

The Supreme Court has not made any attempt to detect or measure the chilling effects that ostensibly support its free speech doctrines. Is the chilling effect a real phenomenon? Does it affect only First Amendment rights or other rights as well? After briefly setting forth the doctrinal lay of the land, this Article reports on our efforts to measure the chilling effect of laws that restrict abortion.

We chose abortion rights rather than free speech rights for this study in order to test the uniqueness claim in the Court's jurisprudence: Finding a chilling effect for abortion would undercut the tacit assumption that free speech rights are uniquely subject to being chilled.<sup>7</sup> Conversely, a negative finding would either support the uniqueness claim or undercut the claim that *any* rights, including First Amendment rights, are subject to a substantial chilling effect. In either event, the analysis will shed light on the scope of the chilling effect. In addition, while we are not so naïve as to discount the substantial role played by conflicting values in judicial evaluation of abortion laws, continuing uncertainty over the standard for evaluating abortion challenges suggests that the Court might be receptive to empirical evidence if and when it revisits these questions.<sup>8</sup>

Candor requires us to acknowledge that our focus on abortion rights also reflects our assessment of the available data. To measure a chilling effect on speech would require us to measure the amount or quality of speech both before and after the enactment of a law restricting speech. But so far as we could ascertain, such data have not yet been collected and attempting to do so would raise difficult measurement questions.<sup>9</sup> By contrast, for the last four decades, various states have enacted numerous abortion-related restrictions, and during that time, substantial data have also been collected on abortion rates. We employ the variation across states to analyze whether laws

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<sup>7</sup> The Court has not, to our knowledge, stated that other rights are not vulnerable to a chilling effect but, by confining the overbreadth doctrine to free speech cases, the doctrine tacitly treats free speech as especially vulnerable. See *Dombrowski v. Pfister*, 380 U.S. 479, 486 (1965) (“Because of the sensitive nature of constitutionally protected expression, we have not required that all of those subject to overbroad regulations risk prosecution to test their rights.”).

<sup>8</sup> See *Gonzales v. Carhart*, 550 U.S. 124, 167–68 (2007) (noting but declining to resolve longstanding tension in prior cases over the standard for assessing facial challenges to abortion restrictions and rejecting the instant facial challenge on the facts before the Court).

<sup>9</sup> In their intriguing contribution to this symposium, Professors Ho and Schauer tackle a related problem by looking at voting—a form of expression for which data do exist. Daniel E. Ho & Frederick Schauer, *Testing the Marketplace of Ideas*, 90 N.Y.U. L. REV. 1160 (2015).

restricting abortion have a chilling effect on constitutionally protected abortions that do not fall within the scope of the regulations.

Using data collected by the Centers for Disease Control and Prevention (CDC), the Guttmacher Institute, and our own research into state legal materials, we tested whether the enactment of a state law restricting late-term abortions affected the early-term, mid-term, late-term, and overall abortion rate in that state. We found that late-term abortion restrictions reduce not only late-term abortions, but also “near-late-term” abortions, i.e., abortions in the roughly one-month period before the period in which abortions are forbidden. Controlling for various other possible causes leads us to conclude that a chilling effect is the most likely explanation.

## I

### LEGAL BACKGROUND

Concurring in a 1952 ruling that invalidated an Oklahoma loyalty oath for public employees,<sup>10</sup> Justice Felix Frankfurter first identified what has become known as the “chilling effect”: A substantial number of persons subject to an overbroad law will not engage in constitutionally protected speech for fear that they will be prosecuted under the law. They self-censor because they are chilled by the law, even though the law is invalid, at least as applied to them.<sup>11</sup> The Supreme Court’s overbreadth doctrine is the clearest doctrinal response to the chilling effect. It allows an exception to the general rule forbidding litigants from raising the rights of third parties: A litigant whose own conduct is not constitutionally protected may challenge a law as overbroad on the ground that it chills the exercise of free speech rights by persons not before the court.<sup>12</sup>

Academic commentators disagree about the justification for, and scope of, the overbreadth doctrine. Henry Monaghan argues that the overbreadth doctrine does not rest on the chilling-effect rationale at all; in his view, everyone has a constitutional right to be judged by a constitutionally valid rule of law, and so the overbreadth doctrine simply reflects the fact that the Constitution forbids overly broad laws.<sup>13</sup> Although they agree with much of Monaghan’s analysis, other

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<sup>10</sup> *Wieman v. Updegraff*, 344 U.S. 183, 191 (1952).

<sup>11</sup> *Id.* at 195 (Frankfurter, J., concurring) (“[I]nhibition of freedom of thought, and of action upon thought, in the case of teachers . . . has an unmistakable tendency to chill that free play of the spirit which all teachers ought especially to cultivate and practice; it makes for caution and timidity in their associations by potential teachers.”).

<sup>12</sup> See *Broadrick v. Oklahoma*, 413 U.S. 601, 612 (1973) (characterizing the First Amendment overbreadth doctrine as an exception to “traditional rules of standing”).

<sup>13</sup> Henry Paul Monaghan, *Overbreadth*, 1981 SUP. CT. REV. 1, 4–14.

commentators disagree with his conclusion. For instance, one of the authors of this Article contends that Monaghan's account neither explains the source of the ostensible right to be judged by a valid rule nor reconciles it with the practice of severing invalid parts and applications of laws.<sup>14</sup> Richard Fallon notes that case law does in fact rest the overbreadth doctrine on the chilling effect, at least in part.<sup>15</sup> Fallon has also argued that overbreadth and other facial constitutional challenges are much more common in practice than the Supreme Court formally recognizes.<sup>16</sup> Although they disagree about the particulars, Monaghan, Fallon, and Dorf have all offered justifications that, if accepted, extend the rationale for the overbreadth doctrine to other kinds of constitutional claims besides free speech claims. Other scholars assert that the Supreme Court doctrine concerning as-applied, facial, and overbreadth challenges is at best confused.<sup>17</sup>

Notwithstanding the case law confusion and academic debate, Supreme Court cases clearly state that the chilling effect justifies a distinctive overbreadth doctrine applicable to First Amendment cases and inapplicable to other kinds of cases.<sup>18</sup> The Court's rationale is partly normative and partly empirical. As a normative matter, First Amendment freedoms have been said to occupy a "transcendent" role

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<sup>14</sup> Dorf, *supra* note 6, at 242–51.

<sup>15</sup> Richard H. Fallon, Jr., *Making Sense of Overbreadth*, 100 YALE L.J. 853, 863–64, 867–70 (1991).

<sup>16</sup> Fallon, *supra* note 6, at 917 (“[F]acial challenges to statutes are common, not anomalous.”).

<sup>17</sup> For a sample of the most thoughtful commentary on the topic, see Alfred Hill, *Some Realism About Facial Invalidation of Statutes*, 30 HOFSTRA L. REV. 647, 657 (2002) (defending the traditional, limited scope of facial challenges and arguing that “facial invalidation as total invalidation adds nothing to the rights of persons whose conduct is constitutionally protected, and is without legal effect as to persons whose conduct is not constitutionally protected”); Marc E. Isserles, *Overcoming Overbreadth: Facial Challenges and the Valid Rule Requirement*, 48 AM. U. L. REV. 359, 388–95 (1998) (distinguishing between overbreadth and “valid rule” facial challenges); Scott A. Keller & Misha Tseytlin, *Applying Constitutional Decision Rules Versus Invalidating Statutes In Toto*, 98 VA. L. REV. 301, 348–57 (2012) (maintaining that overbreadth attacks respond to the combination of free speech doctrine's complexity and the chilling effect); Gillian E. Metzger, *Facial Challenges and Federalism*, 105 COLUM. L. REV. 873, 879–80 (2005) (juxtaposing the doctrines governing facial attacks based on individual rights claims with those based on federalism claims); Nicholas Quinn Rosenkranz, *The Subjects of the Constitution*, 62 STAN. L. REV. 1209, 1238 (2010) (suggesting that challenges to legislative action are necessarily facial).

<sup>18</sup> See *United States v. Stevens*, 559 U.S. 460, 473 (2010) (“In the First Amendment context, however, this Court recognizes ‘a second type of facial challenge,’ whereby a law may be invalidated as overbroad if ‘a substantial number of its applications are unconstitutional, judged in relation to the statute’s plainly legitimate sweep.’” (quoting *Wash. State Grange v. Wash. State Republican Party*, 552 U.S. 442, 449 n.6 (2008))).

in our constitutional order.<sup>19</sup> They are thus entitled to special protections.

Two empirical claims implicitly underwrite the free speech overbreadth doctrine: first, that overbroad laws chill free speech rights; and second, that overbroad laws do not chill other rights, or do not chill other rights to the same degree that they chill free speech rights.<sup>20</sup> Although the case law does not delve deeply into why that might be, the Court has asserted that the overbreadth “doctrine is predicated on the sensitive nature of protected expression.”<sup>21</sup> This implies that other rights are less “sensitive,” i.e., less susceptible to being chilled.

The risk/reward imbalance for persons subject to laws restricting speech makes it plausible that free speech is vulnerable to a chilling effect. But if that is the justification, the risk/reward imbalance makes a chilling effect plausible in other areas, too. For instance, Derek Schaffner suggests that the chilling effect may extend to the impact of copyright laws on innovation and competition.<sup>22</sup> Here, we hypothesize that abortion rights similarly might be vulnerable to a chilling effect because abortion restrictions alter the incentives of doctors. Accordingly, we set ourselves the task of testing for a chilling effect associated with abortion restrictions.

## II STUDY DESIGN

The field of abortion regulation provides potentially fertile ground for testing a chilling effect because states enact new abortion regulations in substantial numbers every year. For example, in 2013 alone, twenty-four states enacted fifty-two new abortion regulations.<sup>23</sup>

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<sup>19</sup> See *Gooding v. Wilson*, 405 U.S. 518, 521 (1972) (“[T]he transcendent value to all society of constitutionally protected expression is deemed to justify allowing ‘attacks on overly broad statutes with no requirement that the person making the attack demonstrate that his own conduct could not be regulated by a statute drawn with the requisite narrow specificity’ . . . .” (quoting *Dombrowski v. Pfister*, 380 U.S. 479, 486 (1965))).

<sup>20</sup> See *Sabri v. United States*, 541 U.S. 600, 610 (2004) (“Outside the[] limited settings [of free speech and perhaps a handful of other contexts], and absent a good reason, we do not extend an invitation to bring overbreadth claims.”).

<sup>21</sup> *New York v. Ferber*, 458 U.S. 747, 768 (1982).

<sup>22</sup> Derek J. Schaffner, Note, *The Digital Millennium Copyright Act: Overextension of Copyright Protection and the Unintended Chilling Effects on Fair Use, Free Speech, and Innovation*, 14 CORNELL J.L. & PUB. POL’Y 145, 148 (2004) (“Experience with the ‘anti-circumvention’ provisions of the [Digital Millennium Copyright Act] demonstrates that the statute reaches too far, chilling a wide variety of legitimate activities in ways Congress did not intend.”).

<sup>23</sup> NARAL PRO-CHOICE AM. & NARAL PRO-CHOICE AM. FED’N, WHO DECIDES?: THE STATUS OF WOMEN’S REPRODUCTIVE RIGHTS IN THE UNITED STATES 4 (23d ed.

To assess whether laws affect the incidence of abortion beyond those abortions that they actually target, we looked for abortion laws that would enable an objective distinction between legal coverage and measurable impact.

We identified laws restricting late-term abortions as one such possibility. These laws prohibit abortions either after: (1) the fetus reaches viability outside the womb or (2) a specified number of weeks of gestation. These laws do not and should not reach abortions in the previous weeks of pregnancy. If there were no chilling effect, we would expect restrictions on late-term abortions either to have no impact on the abortion rate earlier in pregnancy or to shift the timing of some abortions to earlier periods of the pregnancy because some women who would have been inclined to wait for a late abortion would be told by their doctors that they must have the procedure before the law's coverage period begins. In either event, absent a chilling effect, the net impact of a late-term restriction would be to increase the percentage of abortions in earlier weeks of gestation: A few women might shift the timing of their abortions to an earlier period and, even if none did so, by banning late-term abortions, the law would prevent some late-term abortions entirely, leading to a smaller denominator.

In considering late-term abortion laws, we analyzed postviability restrictions as well as specific-week restrictions, such as laws proscribing abortions after twenty-four weeks. Postviability abortion bans are constitutional so long as they contain an exception for circumstances in which the continuation of the pregnancy would pose a threat to the life or health of the woman.<sup>24</sup> Properly crafted laws forbidding postviability abortions are not necessarily "overbroad" as the free speech case law uses that term.

Nonetheless, for purposes of testing the chilling effect, postviability prohibitions can provide very useful information. These laws may be overbroad because of how "viability" is defined.<sup>25</sup> More-

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2014), available at <http://www.prochoiceamerica.org/assets/download-files/2014-who-decides.pdf>.

<sup>24</sup> See *Roe v. Wade*, 410 U.S. 113, 163–64 (1973) ("If the State is interested in protecting fetal life after viability, it may go so far as to proscribe abortion during that period, except when it is necessary to preserve the life or health of the mother."); *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 846 (1992) (reaffirming the authority of states to forbid postviability abortions with life and health exceptions). *But see* *Gonzales v. Carhart*, 550 U.S. 124, 141–43 (2007) (declining to invalidate a ban on one method of late-term abortion even though the challenged law did not contain an exception for the health of the woman).

<sup>25</sup> See, e.g., *Colautti v. Franklin*, 439 U.S. 379, 390–97 (1979) (holding an abortion-related statute unconstitutional because of its unclear definition of the term "viability").



over, even those state postviability prohibitions that are not overbroad allow us to measure whether a law that validly proscribes some conduct—here, postviability abortions—also has the effect of reducing constitutionally protected conduct—previability abortions. Finally, as discussed in the Introduction, the chilling effect explains a variety of free speech doctrines, not just overbreadth.<sup>26</sup> Thus, testing a chilling effect has potential consequences beyond the overbreadth doctrine.

As revealed below in our data set, state prohibition of late-term abortions is a fairly common legislative response to the limits that Supreme Court case law places on state regulatory authority over abortions. By looking at abortion rates before and after the enactment of such laws within individual states, we can examine how changes in state laws affect behavior regarding abortions. In other words, we can assess how changes in late-term abortion laws in a given state affect abortions in that state at different stages of pregnancy. If the late-term laws are at all consequential, we would clearly see fewer abortions in the third trimester or, depending on the particular law, from the specific gestational age after which abortions are prohibited; currently, the strictest cutoff is at twenty weeks.<sup>27</sup> However, in the absence of a chilling effect, we should not observe fewer abortions in the “near-late-term” of sixteen to twenty weeks, given that no law has an earlier threshold than twenty weeks and that viability occurs at approximately twenty-four or twenty-five weeks.<sup>28</sup> In fact, absent a chilling effect, the percentage of abortions in the near-late-term period, out of the total in the state, should increase. Likewise, assuming that late-term restrictions induce women to seek abortions earlier in a pregnancy, the percentage (and number) of abortions prior to sixteen weeks should also increase.

Since 1990, the CDC has published detailed data on the number of abortions by state at different stages of gestation in the annual

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<sup>26</sup> See *supra* notes 1–3 and accompanying text.

<sup>27</sup> N.C. GEN. STAT. ANN. § 14-45.1 (West 2014). The next earliest cutoff is twenty-four weeks. *E.g.*, MASS. GEN. LAWS ANN. ch. 112, § 12L–M (West 2014); NEV. REV. STAT. ANN. § 442.250 (West 2014); 18 PA. CONS. STAT. ANN. § 3211 (West 2014).

<sup>28</sup> See *Overall Outcome*, EPICURE, <http://www.epicure.ac.uk/overview/overall-outcome/> (last visited Mar. 26, 2015) (listing survival rates for labor onset at different periods of gestation); *cf. Roe*, 410 U.S. at 160 (“Viability is usually placed at about seven months (28 weeks) but may occur earlier, even at 24 weeks.”). The best medical evidence indicates that almost no viable births are possible at twenty weeks. *Cf., e.g.*, Kate L. Costeloe et al., *Short Term Outcomes After Extreme Preterm Birth in England: Comparison of Two Birth Cohorts in 1995 and 2006 (The EPICure Studies)*, BRIT. MED. J., Dec. 4, 2012, at 8 tbl.1 (finding survival to twenty-eight days in only 3% of live births at twenty-two weeks).

Abortion Surveillance Report.<sup>29</sup> The state coverage is nearly complete, with data for forty-five states. We therefore have a reasonably sized panel data set from which to test the impact of policy changes, holding constant the state itself and a variety of additional controls. While the CDC reports vary the gestational stages a bit from year to year, the three categories of sixteen to twenty weeks, post-twenty weeks, and below sixteen weeks can be calculated for each available year of the report. Our key dependent variable is accordingly *%16–20 weeks*, which equals the percentage of abortions in weeks sixteen to twenty of gestation out of the total number of abortions that year in a given state. Additionally, for purposes of comparison, we conduct tests with the analogous dependent variables *%Over 20 weeks* and *%Below 16 weeks*.

The key independent variable, *Late Term Restriction*, equals 1 if in that year the state had a restriction on late-term abortions, including a prohibition on abortions beginning at twenty weeks, twenty-four weeks, the third trimester, or postviability. To code these policies, we consulted a variety of sources. The Guttmacher Institute generously shared its annual *State Policies in Brief: State Policies on Later Abortions*, which go back to 2004. For the earlier years, we relied chiefly on published state legislative codes, available online and for earlier years in the Cornell Law Library.

In supplemental analyses, we consider the possibility that the impact of a late-term restriction may depend on whether the restriction involves fetal viability versus a specified time frame. For instance, time-based restrictions could have a larger impact on near-late-term abortions because the woman seeking the abortion (and the fetus's father) may have private information about the timing of the pregnancy that the physician lacks. Hence, a physician may be apprehensive about performing an abortion if a party could later claim with some plausibility that an abortion had been performed at a period prohibited by law.<sup>30</sup> By comparison, the physician is more of an expert than the parents on the viability of a fetus.

At the same time, other pressures may cause viability restrictions to have a larger effect on near-late-term abortions. For example, because of the inherent vagueness of the term “viability,” the physi-

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<sup>29</sup> CDC's *Abortion Surveillance System FAQs*, CTRS. FOR DISEASE CONTROL & PREVENTION, [http://www.cdc.gov/reproductivehealth/data\\_stats/Abortion.htm](http://www.cdc.gov/reproductivehealth/data_stats/Abortion.htm) (last updated Nov. 18, 2014).

<sup>30</sup> Cf. GUTTMACHER INST., *STATE POLICIES IN BRIEF AS OF FEBRUARY 1, 2015: STATE POLICIES ON LATER ABORTIONS 1* (2015) (explaining that some state laws have been found unconstitutional because they do not permit a physician to exercise judgment in determining viability).

cian might be wary of performing a near-viability abortion when regulated by a prohibition on postviability abortions. In extraordinary cases, neonatal interventions can lead to the survival of a baby born as early as twenty-two weeks.<sup>31</sup> Combined with uncertainty about when a pregnancy began and the measurement error of tools like fetal ultrasound, the vagueness of the viability line could itself lead to physician apprehensiveness about performing abortions in the technically legal period. In the supplemental regressions, *Viability* equals 1 if the restriction prohibits abortions once the fetus can survive outside the womb and 0 otherwise. Likewise, *Time Limit* is an indicator that equals 1 if there is a specified time after which abortions are prohibited.

Because factors other than late-term restrictions may affect a pregnant woman's decision about whether and when to seek an abortion, we include a number of control variables.<sup>32</sup> *Number of Providers* equals the number of hospitals, clinics, and physician offices in the state that perform abortions. These data are from the Guttmacher Institute State Data Center.<sup>33</sup> Various studies show that provider access increases the number of abortions.<sup>34</sup> We also allow for the possibility that public opinion about abortion may affect the number and timing of abortions within a state. We use state-level data on pro-life versus pro-choice opinion collected by Canes-Wrone, Clark, and Park.<sup>35</sup> More specifically, *Pro-Life Opinion* equals the percentage of survey respondents for that state and year who favor adopting further restrictions on abortion or prohibiting it altogether.<sup>36</sup>

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<sup>31</sup> See *Most-Premature Baby Allowed Home*, BBC NEWS (Feb. 21, 2007, 10:33 PM), <http://news.bbc.co.uk/2/hi/americas/6384621.stm> (telling the story of a baby who, due to advances in neonatal care, survived after less than twenty-two weeks in the womb).

<sup>32</sup> However, we observe the same substantive results even if no control variables are included.

<sup>33</sup> *State Data Center*, GUTTMACHER INST., <http://www.guttmacher.org/datacenter/trend.jsp#> (last visited Mar. 26, 2015).

<sup>34</sup> See, e.g., Rebecca M. Blank, Christine C. George & Rebecca A. London, *State Abortion Rates: The Impact of Policies, Providers, Politics, Demographics, and Economic Environment*, 15 J. HEALTH ECON. 513, 531–32 (1996) (attributing part of the decline in abortion rates to the decreased availability of providers); James D. Shelton, Edward A. Brann & Kenneth F. Schulz, *Abortion Utilization: Does Travel Distance Matter?*, 8 FAM. PLAN. PERSP. 260, 262 (1976) (stating that when new facilities in parts of Georgia were established, “the abortion-to-live-birth ratio increased by at least twice as much as it did in the remainder of the state”).

<sup>35</sup> Brandice Canes-Wrone, Tom S. Clark & Jee-Kwang Park, *Judicial Independence and Retention Elections*, 28 J.L. ECON. & ORG. 211 (2012).

<sup>36</sup> The data are based on recurring CBS News/N.Y. Times polls that, since 1989, have asked respondents: “Which of these comes closest to your view? 1. Abortion should be generally available to those who want it; OR 2. Abortion should be available but under stricter limits than it is now; OR 3. Abortion should not be permitted?” Megan Thee, *Public Opinion on Abortion*, N.Y. TIMES: THE CAUCUS (Apr. 19, 2007, 3:41 PM), <http://>

Controlling for pro-life public opinion allows us to distinguish between two possible reasons why the enactment of a late-term abortion law might reduce the incidence of all abortions. If the late-term abortion law either reflects or causes an increase in the public's opposition to abortion, then a reduction in abortions would not necessarily reflect a "chill." Women would be having fewer abortions (at all periods of pregnancy) because, after moral reflection, they decided that they did not want to have abortions. Controlling for pro-life public opinion helps distinguish between this possibility and the alternative that women are unable to have abortions despite wanting them.<sup>37</sup>

Our third control, *Partial Birth Abortion Restriction*, accounts for the influence that partial-birth abortion laws may have on the timing of abortion decisions. "Partial-birth abortion" is a colloquial term for the procedure medically known as "Intact Dilation and Extraction," which when legal, is used relatively rarely and is exclusively for second trimester or later abortions.<sup>38</sup> Over the past decades, states and the federal government have limited the circumstances under which the procedure is permitted. The Supreme Court invalidated a state partial-birth abortion ban in 2000,<sup>39</sup> but, after a change in membership, upheld a substantially similar federal partial-birth abortion ban seven years later.<sup>40</sup> Because the procedure is designed for later-term abortions, partial-birth abortion laws may affect the timing of abortions independently of whether late-term abortions are restricted explicitly.

We gathered data on state partial-birth-abortion laws from a variety of sources, including the Guttmacher Institute reports *State Policies in Brief: "Partial-Birth" Abortion Bans*,<sup>41</sup> state legal codes, federal and state court rulings, and interest group reports.<sup>42</sup> *Partial*

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thecaucus.blogs.nytimes.com/2007/04/19/public-opinion-on-abortion. For further details, see Richard P. Caldarone, Brandice Canes-Wrone & Tom S. Clark, *Partisan Labels and Democratic Accountability: An Analysis of State Supreme Court Abortion Decisions*, 71 J. POL. 560, 564 (2009) (referencing these surveys); Canes-Wrone, Clark & Park, *supra* note 35, at 221 (discussing these surveys).

<sup>37</sup> Correspondingly, we also test whether the results seem to be driven by the publicity surrounding the passage of the law by comparing the impact at the time it was passed to that in future years.

<sup>38</sup> Julie Rovner, 'Partial-Birth Abortion: Separating Fact from Spin', NPR (Feb. 21, 2006, 9:44 PM), <http://www.npr.org/2006/02/21/5168163/partial-birth-abortion-separating-fact-from-spin> (indicating that partial-birth abortions account for around 0.2% of abortions in the United States).

<sup>39</sup> *Stenberg v. Carhart*, 530 U.S. 914 (2000).

<sup>40</sup> *Gonzales v. Carhart*, 550 U.S. 124 (2007).

<sup>41</sup> GUTTMACHER INST., *STATE POLICIES IN BRIEF AS OF OCTOBER 1, 2014: BANS ON "PARTIAL-BIRTH" ABORTION* (2014).

<sup>42</sup> For each jurisdiction-year in the database, we examined the current statutory code for the jurisdiction, as well as archived print and/or online versions of the session laws for

*Birth Abortion Restriction* equals 1 for the states and years that limited the practice of Intact Dilation and Extraction, and 0 otherwise.

While the analysis focuses on within-state change, some factors may affect all states simultaneously. Most obviously, federal rulings and laws about late-term and partial-birth abortions may influence the timing and number of abortions. In addition, other state and federal policies, such as welfare reforms, may affect the attractiveness of keeping a baby versus terminating a pregnancy. To account for these and other national factors, we include a set of year indicators.

The specification itself also holds constant the state. In particular, we use what is called a “fixed effects” model, with the states as the fixed effects. By doing so, any observed impact of the late-term restrictions derives from within-state changes that occur at the time of the legal change. For instance, it would be tempting to conclude that late-term abortion laws reduce abortions in the sixteen- to twenty-week period simply because states with late-term restrictions have fewer abortions in this period. However, these states may differ in other important ways. By holding the state constant through the fixed effects approach, we eliminate the possibility that our conclusions are driven by unobserved interstate differences.

More formally, we estimate the following main model for each state  $s$  and year  $t$ :

$$[1] \quad \%16-20 \text{ weeks}_{st} = \alpha + \beta_1 \text{ Late Term Restriction}_{st} + \beta_2 \text{ Number of Providers}_{st} + \beta_3 \text{ Pro-Life Opinion}_{st} + \beta_4 \text{ Partial Birth Restriction}_{st} + \gamma \text{ Year Indicators}_t + \lambda_s + \varepsilon_{st}$$

where  $\lambda_s$  represents the state fixed effects and  $\varepsilon_{st}$  is an independently and identically distributed error term. If the late-term restrictions have a chilling effect on abortion in the surrounding periods, the coefficient on Late Term Restriction,  $\beta_1$ , should be negative. For comparison purposes, we also substitute for *%16–20 weeks* the percentage of abortions after twenty weeks, *%>20 weeks*, and the percentage before sixteen weeks, *%<16 weeks*.<sup>43</sup> In the first case,  $\beta_1$  should be negative if the laws have their intended impact. In the last case,  $\beta_1$  should be positive if the laws induce women to shift the timing of abortions towards the earlier part of their pregnancies.

As a supplement to these regressions, we have also analyzed several alternative specifications. First, we have substituted for *Late Term*

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each revision of the relevant code section. We then examined any reported cases indicating whether a late-term or partial-birth abortion restriction was enjoined.

<sup>43</sup> For simplicity's sake, we ran three separate regressions for the three equations. We also analyzed a seemingly unrelated regression (SUR) model, which assumes the errors are correlated across the three equations. These results are substantively identical to those in the simpler specification.

*Restriction* the two regressors *Time Limit* and *Viability*, so that we can assess whether the hypothesized effects depend on the type of restriction. Second, we have analyzed specifications that substitute the number for the percentage of abortions in each of three periods, and in order to reduce the impact of outliers, we analyzed the natural log of the total number. Unlike the zero-sum nature of the percentage variables, whereby an increase in the percentage of abortions in a given period means that the percentage in other periods must decline, the number of abortions may increase or decrease across all three gestational periods simultaneously. Finally, we conducted several tests to assess whether any observed chilling effects might be due to the publicity surrounding the passage of laws. Specifically, we compared the impact from the year the law is passed to that in future years and analyzed the effects of failed referenda. All of these additional analyses are presented following the main findings.<sup>44</sup>

### III RESULTS

Table 1 presents the results of Equation [1].<sup>45</sup>

TABLE 1. LATE TERM RESTRICTIONS AND ABORTION PERCENTAGES BY GESTATIONAL STAGE

	%16–20 Weeks	% >20 Weeks	% <16 Weeks
Late Term Restriction	-0.669** (0.204)	-0.581** (0.005)	0.923** (0.248)
Number of Providers	0.017** (0.008)	0.004 (0.006)	-0.009 (0.009)
Pro-Life Opinion	-0.022 (0.016)	-0.022* (0.012)	-0.002 (0.020)
Partial Birth Restriction	0.069 (0.133)	-0.397** (0.103)	0.324** (0.161)
Constant	4.847** (1.057)	2.658** (0.826)	95.460** (1.291)
Year Indicators	Yes	Yes	Yes
State Effects	Yes	Yes	Yes
N	777	785	793

Notes: Standard errors in parentheses below coefficients. \*\* signifies  $p < 0.05$ , and \* signifies  $p < 0.1$ , two-tailed.

<sup>44</sup> In addition, we have run SUR models that assume the error terms are correlated across the equations, and the results are substantively similar.

<sup>45</sup> The sample sizes vary slightly across the specifications because some states reported only a subset of the gestational ages for some years.

The first row of results suggests that late-term abortion restrictions reduce not only the percentage of abortions in the later portion of the pregnancy, but also in the “near-late-term” period of sixteen to twenty weeks. In each of these periods, the coefficient on late-term restrictions is negative and statistically significant at  $p < 0.05$ , two-tailed. The percentage of abortions in weeks sixteen to twenty, relative to the total number of abortions, is approximately 0.7 percentage points lower when a state switches from having no restrictions to having some. Similarly, the percentage of late-term abortions themselves declines by 0.6 percentage points.<sup>46</sup> By comparison, the percentage of abortions in the earlier portion of the pregnancy increases. The coefficient on *Late Term Restrictions* in Column 3 is positive and statistically significant, suggesting that the late-term restrictions induce women to seek abortions earlier in the term.

Notably, all of these effects for late-term restrictions derive from within-state changes, as the fixed effects model holds the state constant. Within the years of the data, eight of the states changed their laws: Alabama, Kansas, Michigan, Minnesota, Mississippi, Texas, Utah, and Washington. The identification therefore derives from these eight states.

The control variables in Table 1 do not present any major surprises. Partial-birth restrictions reduce the percentage of abortions in the late term, and shift them to the early period. Finally, pro-life opinion is significant at conventional levels in the post-twenty weeks regression, and here again the direction is expected; as the public becomes increasingly pro-life, the percentage of late-term abortions will decline, independent of the official policy. Finally, the controls indicate that the number of providers is associated with an increase in the percentage of early-term abortions. This relationship may exist because some providers only offer early-term abortions, such as providers who offer medically induced but not surgical abortions.<sup>47</sup>

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<sup>46</sup> It is somewhat surprising that the relative effect of late-term abortion restrictions appears to be slightly greater in the near-late-term than in the late term itself. One potential reason is that the partial-birth abortion bans, which only have a significant impact on late term abortions but not near-late-term ones, are effective at reducing late term abortions even when they are not explicitly banned. Moreover, if one tests for the statistical significance of the difference in an SUR model, one finds it is not at all significant ( $p > 0.85$ ).

<sup>47</sup> For instance, in 2008, 9% of providers offered medically induced but not surgical abortions. See Rachel K. Jones & Kathryn Kooistra, *Abortion Incidence and Access to Services in the United States, 2008*, 43 PERSP. ON SEXUAL & REPROD. HEALTH 41, 46 (2011) (“A substantial number of clinics and physicians’ offices—164 facilities, or 9% of all providers—offered early medication abortions, but not surgical abortions . . .”).

TABLE 2. VIABILITY AND TIME LIMITS

	%16–20 Weeks	% >20 Weeks	% <16 Weeks
Time Limit	-0.899** (0.285)	-0.424* (0.222)	0.912** (0.343)
Viability	-0.589** (0.215)	-0.636** (0.169)	0.926** (0.260)
Number of Providers	0.017** (0.008)	0.005 (0.006)	-0.009 (0.009)
Pro-Life Opinion	-0.021 (0.016)	-0.022* (0.013)	-0.002 (0.012)
Partial Birth Restriction	0.078 (0.134)	-0.391** (0.104)	0.324** (0.161)
Constant	4.853** (1.057)	2.655** (0.826)	95.463** (0.343)
Year Indicators	Yes	Yes	Yes
State Effects	Yes	Yes	Yes
N	777	785	793

Notes: Standard errors in parentheses below coefficients. \*\* signifies p<0.05 and \* signifies p<0.1, two-tailed.

Table 2 shows that the major conclusions of Table 1 are similar if we split late-term restrictions into those concerning time limits versus the viability of the fetus. Each type of restriction significantly reduces near-late-term abortions, i.e. those in the sixteen- to twenty-week period. Time limits are associated with a 0.9 percentage point decline, and viability laws with a 0.6 percentage decline. This difference in the magnitudes is not statistically significant at conventional levels (p>0.1, two-tailed), suggesting that the type of late-term restriction is less consequential than simply whether one has been enacted.

The results for the late and early periods of the pregnancy also suggest that the impact of late restrictions does not depend substantially on the type of restriction. Viability laws reduce the proportion of late-term abortions by 0.6 percentage points, while time limits reduce them by 0.4 percentage points. The proportion of early-term abortions increases by 0.9 percentage points if the state has a viability law and also by 0.9 percentage points with a time limit. In neither case is the difference between the types of restriction significant.

Theoretically, a new law could drive down abortions in all gestational periods, even if the proportions among the three periods changed significantly. Or, abortions could increase across all periods, and yet the proportion in weeks sixteen through twenty could decline



relative to the other two periods. Accordingly, Table 3 investigates whether the results are corroborated by the total number of abortions in each period. We are particularly interested in whether a decline in the near-late-term period is associated with a decline in the total number of abortions.

TABLE 3. NUMBER OF ABORTIONS

	Ln(16–20 Weeks)	Ln(>20 Weeks)	Ln(<16 Weeks)
Late Term Restriction	-0.219** (0.091)	-0.452** (0.160)	0.090 (0.056)
Number of Providers	0.008** (0.003)	0.005 (0.006)	-0.004* (0.002)
Pro-Life Opinion	0.372 (0.719)	0.041** (0.013)	-0.158 (0.444)
Partial Birth Restriction	0.094 (0.060)	0.173 (0.104)	0.091 (0.036)
Constant	4.913** (0.472)	0.651 (0.827)	8.955** (0.289)
Year Indicators	Yes	Yes	Yes
State Effects	Yes	Yes	Yes
N	777	785	793

*Notes:* Standard errors in parentheses below coefficients. \*\* signifies  $p < 0.05$  and \* signifies  $p < 0.1$ , two-tailed.

As Table 3 shows, it is indeed associated with such a decline. When a state introduces a late-term restriction, the number of abortions drops significantly in not only the gestational period to which the law is directed, but also weeks sixteen through twenty.

Interpreting the magnitude of the coefficients is not straightforward given that the dependent variable is a natural log. If we take four hundred abortions as the baseline number for a given state, year, and gestational age, then the results in Table 3 suggest that a late-term restriction decreases the number in the sixteen to twenty week period to 321 per year. The impact in the post-twenty week period, not surprisingly, is also statistically significant and even larger in magnitude. Using the same baseline, a late-term restriction reduces the number of abortions of fetuses older than twenty weeks to approximately 255 a year.

Interestingly, the impact on the early term is not significant at conventional levels ( $p > 0.1$ , two-tailed) and is small in magnitude. Table 3 thus indicates that the number of abortions in the early period

does not go up significantly when a late-term restriction is enacted. We know from Tables 1 and 2 that the proportion of abortions shifts to the earlier period, but Table 3 indicates this is simply due to the fact that fewer abortions are performed in the middle and later parts of the pregnancy, rather than a significant increase in the number performed for early-term pregnancies. Women are thus either going out of state to seek an abortion or are choosing to carry their pregnancies to term.

A potential concern with the findings is that the publicity surrounding the enactment of the laws could alter the behavior of physicians and women independent of the laws themselves. We therefore conducted two types of supplemental analyses to assess whether the observed effects are largely a function of publicity.

First, we created a variable *Passage Years*, which equals 1 if a late-term restriction became law in that state in the current or previous year. If what we are interpreting as a chilling effect occurs only in the years surrounding the passage of the law, then presumably they are not indicative of a chilling effect but may instead be caused by the publicity surrounding the new law.

Second, we also analyzed failed and enjoined laws to see if the effects are comparable to those of the laws that succeed in the legislative and judicial processes. If the unsuccessful policy efforts have as much of an impact on abortions as the actual reforms, then the impact cannot be due to the reforms themselves. The variable *Unsuccessful Reforms* equals 1 if there was a failed abortion referendum in a given state in that year or the previous year. We included all referenda explicitly concerning late-term abortions as well as broad abortion prohibitions that would have eliminated late-term abortions.<sup>48</sup> There were eight such failed referenda across seven states within our data. Additionally, *Unsuccessful Reforms* equals 1 if a late-term restriction was enjoined, which occurs only four times in the data, each in a different state. In all other cases, *Unsuccessful Reforms* equals 0.<sup>49</sup>

Table 4 shows that neither case suggests that publicity is driving the results we interpret as a chilling effect.

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<sup>48</sup> We use the referenda identified in Samantha E. Holquist, *Direct Democracy and the Politics of Abortion: Evaluating the Responsiveness of State Abortion Policy to State Abortion Attitudes*, 21 POL'Y PERSP. 60, 62, 74–75 (2014) and Jongho Roh & Donald P. Haider-Markel, *All Politics Is Not Local: National Forces in State Abortion Initiatives*, 84 SOC. SCI. Q. 15, 30–31 (2003).

<sup>49</sup> We have analyzed the enjoined laws and referenda separately, and the results are substantively similar. Because there are so few enjoined laws regarding the late-term restrictions, interpreting a null result from this finding alone would arguably be problematic.

TABLE 4. PUBLICITY VERSUS CHILLING EFFECTS

	%16–20 Weeks	%16–20 Weeks	% >20 Weeks	% >20 Weeks	% <16 Weeks	% <16 Weeks
Late Term Restriction	-0.669** (0.204)	-0.705** (0.205)	-0.580** (0.158)	-0.566** (0.161)	0.915** (0.248)	0.961** (0.250)
Passage Years	0.211 (0.265)	—	0.696** (0.207)	—	-0.732** (0.320)	—
Unsuccessful Reform	—	-0.354 (0.243)	—	0.138 (0.182)	—	0.363 (0.293)
Number of Providers	0.017** (0.008)	0.075 (0.134)	0.004 (0.006)	0.005 (0.006)	-0.008 (0.008)	-0.009 (0.008)
Pro-Life Opinion	-0.022 (0.016)	-0.023 (0.016)	-0.021* (0.013)	-0.022 (0.013)	-0.003 (0.020)	-0.002 (0.020)
Partial Birth Restriction	0.068 (0.134)	-0.075 (0.134)	-0.392** (0.103)	-0.394** (0.104)	0.327** (0.160)	0.330** (0.161)
Constant	4.832** (1.058)	4.943** (1.059)	2.612** (0.820)	2.620** (0.828)	95.509** (1.287)	95.365** (1.292)
Year Indicators	Yes	Yes	Yes	Yes	Yes	Yes
State Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	777	777	785	785	793	793

Notes: Standard errors in parentheses below coefficients. \*\* signifies  $p < 0.05$  and \* signifies  $p < 0.1$ , two-tailed.

The main findings on the late-term restrictions are similar in magnitude and significance to those in Table 1. Moreover, the impact of a passage year or unsuccessful reform is insignificant in all but two cases, and in those cases the effect is in the opposite direction than would be expected if publicity was driving the earlier findings. For abortions in the post-twenty week period, passage years are associated with a significant increase in abortions in the post-twenty week period and decrease in the early period. Because passage years include the period leading up to passage and before the law goes into effect, it is possible that some women considering a late-term abortion proceed to get one quickly before the law prohibits them from doing so.

Table 4 concerns the percentage of abortions for each gestational period, but the results are similar if instead we examine the log total number of abortions in each period. Again, the main results on late-term restrictions mimic those in Table 1. And, again, the effects of the passage years and unsuccessful reforms are insignificant with the exception of late-term abortions in the passage years, where the effect is in the opposite direction than if publicity were leading to fewer abortions. Overall, the supplemental analysis indicates that the effects

of late-term restrictions on near-late-term abortions are not due to the publicity surrounding the passage of the laws, but instead are due to the laws themselves.

### DISCUSSION AND CONCLUSION

The foregoing results indicate that late-term abortion restrictions chill near-late-term abortions. The data do not permit us to distinguish between provider effects and patient effects, but both are possibly in play. Abortion restrictions target physicians, often with severe penalties,<sup>50</sup> and so the most natural analogue to the chilling effect of a law targeting speech on speakers is the chilling effect of a law targeting the performance of late abortions on the doctors who would be performing those abortions.

Insofar as late-term abortion restrictions chill doctors' willingness to perform near-late-term abortions, they limit women's access to such constitutionally protected near-late-term abortions. We interpret this reduction in access as implicating constitutional rights, regardless of the relative proportions of the affected women who are consequently carrying their pregnancies to term versus those who are traveling to other states (or countries) to obtain abortions. As the United States Court of Appeals for the Fifth Circuit recently held in the course of invalidating a Mississippi abortion law that "effectively will close its only abortion clinic," a state "may not shift its obligation to respect the established constitutional rights of its citizens to another state."<sup>51</sup> To be sure, in addressing a challenge to a Texas law, a different Fifth Circuit panel subsequently appeared to narrow that precedent in a ruling that was itself then stayed by the Supreme Court.<sup>52</sup> Yet whatever its exact scope, the principle of the Mississippi case is sound. The courts would not sustain a law that abridged freedom of

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<sup>50</sup> In addition to focusing on providers in the wording of punishment statutes, states often specifically exempt the women upon whom abortions are performed from punishment. *See, e.g.*, ARIZ. REV. STAT. ANN. § 13-3603.01 (2010) ("This section shall not subject a woman upon whom a partial-birth abortion is performed to any criminal prosecution or civil liability."); OHIO REV. CODE ANN. § 2919.151 (West 2006) ("A pregnant woman upon whom a partial birth procedure is performed in violation of division (B) or (C) of this section is not guilty of committing, attempting to commit, complicity in the commission of, or conspiracy in the commission of a violation of those divisions."); TENN. CODE ANN. § 39-15-209 (2014) ("A woman upon whom a partial-birth abortion is performed may not be prosecuted under this section for violating this section or any of its provisions, or for conspiracy to violate this section or any of its provisions.").

<sup>51</sup> *Jackson Women's Health Org. v. Currier*, 760 F.3d 448, 449 (5th Cir. 2014).

<sup>52</sup> *See Whole Woman's Health v. Cole*, 790 F.3d 563, 596–98 (5th Cir.) (holding that the *Jackson Women's Health Org.* principle does not apply where state law does not completely shunt its responsibility onto neighboring states or to multistate metropolitan areas), *modified*, 790 F.3d 598 (5th Cir.), *mandate stayed*, 135 S. Ct. 2923 (2015).

speech on the ground that people could travel to neighboring states to exercise their right to free speech; First Amendment doctrine would invalidate the law based on its in-state impact.

Our results partly vindicate the intuition underlying the Supreme Court's overbreadth doctrine and other doctrines grounded on a chilling effect. We find that overbroad laws affect not only the unprotected conduct they (perhaps permissibly) target, but also discourage protected conduct outside of their direct ambit. The chilling effect is real.

Our results also undermine the claim that only free speech rights are susceptible to a chilling effect. At least one other constitutional right—abortion—is subject to a chilling effect. Further research might profitably investigate whether other constitutional rights are also vulnerable.