

# State Abortion Policies, Targeted Regulation of Abortion Provider Laws, and Abortion Demand

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## Abstract

*Targeted Regulation of Abortion Provider laws (or TRAP laws) are state laws that apply only to abortion providers and impose on them licensing fees, physical plant/personnel regulations, and requirements that exceed those imposed on other comparable health-care providers or medical facilities. According to prochoice supporters, the explicit or implicit goal of TRAP laws is to drive abortion providers from the market and reduce the supply of abortion services. This paper examines whether a state TRAP licensing fee or a TRAP plant/personnel law also has an independent impact on women's demand for abortion over the period 1982–2005. The empirical results find that neither state TRAP law has a statistically significant independent effect on women's abortion demand. The empirical results remain robust even after controlling for time-varying factors or the time period after the Supreme Court's landmark 1992 Planned Parenthood of Southeastern Pennsylvania v. Casey decision.*

**KEY WORDS:** abortion, TRAP laws, abortion demand

## Introduction

In 1973, the U.S. Supreme Court held in *Roe v. Wade* 410 U.S. 113 that a constitutional right of privacy exists that protects a woman's right to terminate an unplanned pregnancy. *Roe v. Wade* established a trimester pregnancy framework to govern regulation of abortion by states. The Court ruled that states could not enact any laws that regulated a woman's access to abortion during the first trimester, or first three months, of pregnancy. During the second trimester states could enact laws regulating abortion access, but only if the state could prove that the law had a compelling interest in protecting a pregnant woman's maternal health. During the third trimester, when the fetus is viable, a state could enact laws restricting or even prohibiting abortions provided that there was a medical exception to protect the life or health of the pregnant woman.

In 1989, the Supreme Court, in *Webster v. Reproductive Health Services* 492 U.S. 490, upheld a Missouri abortion law that prohibited public facilities and public employees from being used in performing, assisting, counseling, or encouraging abortions and required physicians, prior to performing an abortion, to conduct specific tests at 20 weeks or more of gestation to determine the viability of the fetus. The *Webster v. Reproductive Health Services* decision characterized the right to an abortion as a lesser liberty interest rather than a fundamental right and signaled to state legislatures that the Supreme Court was prepared to grant states increased discretion to regulate and restrict women's abortion access.

In 1992, the Supreme Court in *Planned Parenthood of Southeastern Pennsylvania v. Casey* 505 U.S. 833, reaffirmed that prior to fetal viability, a woman has a constitutional right to obtain an abortion, while upholding all the restrictions (except for spousal notification) in Pennsylvania's 1989 Abortion Control Act. It is noteworthy that during the 1980s, the Supreme Court had struck down as unconstitutional the exact same restrictions. In *Planned Parenthood of Southeastern Pennsylvania v. Casey*,

the Court officially rejected *Roe v. Wade's* rigid trimester pregnancy framework of state abortion regulation and replaced it with the "undue burden" standard. The Court ruled that states could impose restrictions on women's access to an abortion provided that the restrictions did not impose an undue burden on a woman's right to obtain an abortion. The Court declared that a state law or regulation places an undue burden on a woman's access to an abortion if it ". . . has the purpose or effect of placing a substantial obstacle in the path of a woman seeking an abortion of a nonviable fetus." Since the *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision, the undue burden standard has been the current legal standard of abortion regulation prior to fetal viability.

The *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision had two effects. First, it gave states considerable latitude to restrict a woman's access to an abortion. A state abortion restriction may not be a *prima facie* "undue burden," but in practice may substantially restrict or curtail a woman's access to an abortion. Second, prior to the *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision, the Court only allowed states the discretion to restrict public funding of abortions or minors' access to an abortion. After the *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision, however, many states could and did enact a variety of new abortion restrictions. The *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision enhanced the need for empirical research on the effect of restrictive state abortion laws to determine if any of them constitutes an undue burden on women seeking to obtain an abortion.

## Theory

The decision to have an abortion is embedded in the theoretical decision-making model of fertility control developed by Becker (1960) and extended by Michael (1973). This approach emphasizes the decision-making process in which a pregnant woman compares the benefits and costs of having a child in making the pregnancy resolution decision of whether to have an abortion or give birth. For women with a planned or wanted pregnancy, abortion is not an option, since the net benefit (benefits minus costs) of having a child is positive. For other women with an unplanned or unintended pregnancy, the costs of a child may exceed the benefits. These costs include the financial costs of giving birth and raising a child, in addition to lost opportunities (e.g., earnings, educational, and marital prospects). Some of the women with an unplanned pregnancy may have an abortion if the net benefit of having a child is negative. This choice-theoretic framework can be used to predict how these women respond to different abortion policies (i.e., different levels of abortion cost).

The demand for abortion, like that of any ordinary consumer good, depends on its costs. The full cost of obtaining an abortion includes the out-of-pocket monetary costs of the procedure plus women's search costs, travel costs, time costs, and emotional costs (e.g., regret, guilt, shame) of obtaining an abortion. Restrictive abortion laws may influence the likelihood of women terminating an unintended pregnancy in two ways. First, restrictive abortion laws, by reducing women's access, may increase women's full cost of obtaining an abortion. The more restrictive the abortion law, the more costly the abortion. By increasing the full cost of obtaining

an abortion, restrictive abortion laws may alter women's cost-benefit decision calculus and cause a decrease in the likelihood of an unintended pregnancy ending in an abortion (i.e., a decrease in the demand for abortions). Second, a restrictive abortion law may decrease the availability of abortion services by reducing the number of abortion providers (i.e., a decrease in the supply of abortions).

### Restrictive State Abortion Laws

The most common types of restrictive state abortion laws are Medicaid funding restrictions, parental involvement laws, mandatory delay laws, and mandatory counseling laws. Medicaid funding restrictions are laws that prohibit the use of state funds to pay for Medicaid abortions for poor women. Parental involvement laws require the consent of a parent or providers to notify a parent before an abortion can be performed on a unmarried teen minor (less than 18 years of age). Mandatory delay laws require women seeking an abortion to wait, typically 24 hours, before the abortion can be performed. Mandatory counseling laws require that providers give or make available to women state-mandated medical information about the abortion procedure (e.g., health risks, medical complications, fetal development).

There is a large body of empirical evidence on the impact restrictive abortion laws have on the demand for abortion (a complete review is available in Henshaw, Joyce, Dennis, Finer, & Blanchard, 2009, and Dennis, Henshaw, Joyce, Finer, & Blanchard, 2009). Taken as a whole, the empirical evidence indicates that Medicaid funding restrictions reduce the abortion rate by 3–5 percent (Bitler & Zavodny, 2001; Levine, Trainor, & Zimmerman, 1996; Matthews, Ribar, & Wilhelm, 1997; Medoff, 2007, 2008). The enforcement of a parental involvement law has been found to lower the abortion rate of teen minors by between 13 and 22 percent (Haas-Wilson, 1996; Joyce, Kaestner, & Colman, 2006; Levine, 2003; Matthews et al., 1997). The available evidence indicates that mandatory delay laws and mandatory counseling laws have little or no significant impact on the abortion rate (Althaus & Henshaw, 1994; Bitler & Zavodny, 2001; Joyce, Henshaw, & Skatrud, 1997; Levine, 2003; Medoff, 2007, 2008).

In the years before the *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision, a few states had enacted laws that subjected abortion providers to a wide variety of licensing fees, regulations, or requirements not imposed on other comparable medical practitioners (e.g., fertility physicians, obstetricians and gynecologists who do not perform abortions, cosmetic surgeons) or medical facilities. After the *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision, many more states enacted these Targeted Regulation of Abortion Providers laws (more commonly known as TRAP laws). The two most common TRAP laws (1) require abortion providers pay an annual fee to be licensed and (2) require abortion providers (but no other comparable offices or clinics) to meet a wide range of regulations governing their physical plant, staffing, procedures, and protocols (i.e., physical plant/personnel requirements).

The available empirical evidence finds that TRAP laws make it more difficult and costly for abortion providers to supply abortion services. TRAP laws raise abortion providers' fixed costs and/or their operating costs (labor and capital expenditures) as a consequence of complying with TRAP laws. Medoff (2009) found that TRAP

laws significantly affected the supply of abortion services by deterring physicians or organizations from becoming or remaining abortion providers. The numerical impact of a TRAP law was to reduce the number of abortion providers per 100,000 pregnancies by 15.5 as compared with states without TRAP laws.

However, TRAP laws may also have an *independent* impact on women's demand for abortion. Fewer abortion providers increases both women's search costs of locating an abortion provider and the time and travel costs associated with obtaining an abortion. The available empirical evidence finds that increases in the travel, time, or search costs component of the full cost of obtaining an abortion reduces women's abortion demand. Brown, Jewell, and Rous (2001) found that the longer the travel distances to the nearest abortion provider, the lower the likelihood of a woman having an abortion. Jewell and Brown (2000) showed that the abortion rate of teens and the abortion rate of all women of childbearing age are inversely related to the travel distance to the nearest abortion provider.

Standard economic reasoning tells us that an increase in the full cost of obtaining an abortion due to an increase in women's search costs of locating an abortion provider and/or an increase in the travel distance to the nearest abortion provider will decrease the quantity of abortions demanded. Thus, if the demand for abortion is sensitive to increases in the full cost of an abortion due to TRAP laws, then the quantity of abortions demanded should decrease.

Whether state TRAP laws reduce women's demand for abortion has up to now never been studied and is ultimately an empirical question. The impact of TRAP laws on state abortion rates merits study for several reasons. One of every five pregnancies ends in an abortion, resulting in 1.2 million abortions each year (Jones, Zolna, Henshaw, & Finer, 2008). Access to abortion has made a significant contribution in the ability of women to control whether and when to have children, which has improved the economic opportunities available to women. The use of abortion to reduce the number of unplanned pregnancies has been found to be a major factor in reducing nonmarital and teen birth rates (Levine et al., 1996; Medoff, 2007). In the *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision, the Supreme Court acknowledged that "the ability of women to participate equally in the economic and social life of the Nation has been facilitated by their ability to control their reproductive lives." If TRAP laws serve no legitimate health purposes, as alleged by prochoice supporters, but are merely enacted to discourage or deter women with unplanned pregnancies from exercising their legal right to have an abortion, then one might argue that TRAP laws constitute an undue burden because they create barriers to women's access to an abortion. Clearly, determining the impact of TRAP laws on the demand for abortion has important legal, public, and social policy implications. The purpose of this paper is to empirically investigate the question: Do TRAP licensing fees or TRAP physical plant/personnel requirements laws decrease the demand for abortions?

### TRAP Laws

TRAP laws are state laws that apply only to abortion providers and impose on them regulations and requirements that are not imposed on other comparable medical practitioners' offices or clinics. The two most common TRAP laws

imposed only on abortion providers are annual licensing fees and laws that impose physical plant and personnel requirements on abortion providers. TRAP physical plant laws impose requirements on the physical and/or structural dimensions on the building/facility of abortion providers that far exceed those imposed on other comparable health-care providers or health facilities. TRAP personnel requirements mandate what types of medical professionals must be on staff and qualifications of various staff members, and assign duties to specific staff members of abortion providers.

For example, Arizona and Alabama require that all abortion providers must maintain ultrasound equipment and perform an ultrasound before an abortion can be performed. Louisiana requires that abortions can only be performed in rooms that are a minimum 120 square feet. Missouri requires that abortion provider facilities must be located within 30 miles of a hospital and have procedure rooms that are at least 12 feet long and 12 feet wide, with ceilings at least 9 feet high and doors at least 44 inches wide. North Carolina requires that abortion providers must have their own laboratory, a nourishment station serving snacks to patients, and a registered nurse with experience in postoperative and postpartum care on duty at all times. South Carolina requires that abortion providers must keep the air temperature in their rooms between 72 and 76 degrees. Connecticut requires that all abortion providers must have staff counselors who have or are supervised by a person with a graduate degree in social work, psychology, counseling, nursing, or ministry. Utah and Tennessee require that an abortion provider facility must have a medical director who is a licensed physician and board certified in Obstetrics and Gynecology (NARAL, 2009).

Prior to the Supreme Court's *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision, a number of state TRAP laws were successfully challenged in federal court. However, after the *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision the new lower undue burden standard of review made it more difficult to challenge any restrictive state abortion law. As a consequence, litigation challenging TRAP laws post-*Planned Parenthood of Southeastern Pennsylvania v. Casey* was usually unsuccessful, because plaintiffs had to provide evidence that such TRAP laws impose an undue burden on women's access to an abortion. In *Greenville Women's Clinic v. Bryant* 222 F. 3d. 157 (4 cir 2000), the district court upheld challenged TRAP regulations, ruling that the "undue burden standard did not apply because the regulations did not strike directly at the ability to make a decision to have an abortion as distinct from the financial cost of procuring an abortion."

### **Data**

The data on all socioeconomic variables used in this study are from the U.S. Bureau of the Census (1983, 1993, 2003) and the Statistical Abstract of the United States (1983, 1993, 2000, 2003, 2006). All the information regarding abortions, abortion prices, and abortion laws are from the national survey conducted by the Guttmacher Institute (Merz, Jackson, and Klerman, 1995), and the Guttmacher Institute (2006). The source for state TRAP laws is NARAL (2009) "Who Decides? The Status of Women's Reproductive Rights in the United States."

**Empirical Model**

During any given year, some states enforced TRAP laws and other states did not. Thus, one can view the effects of TRAP laws on the incidence of abortion as a natural experiment with a treatment group (states with TRAP laws) and a control group (states without TRAP laws). These interstate variations in TRAP laws provide the opportunity to address the question of whether TRAP laws have an independent effect on abortion demand. State differences in abortion rates can then be attributed, in part, to differences between states with and without TRAP laws. The year each state enacted a TRAP law is shown in Table 1.

In order to examine the relationship between TRAP laws and the demand for abortion, data is needed on abortions, abortion laws, and the socioeconomic characteristics of women in states. Abortion data is available from two sources: the Centers for Disease Control (CDC) and the Guttmacher Institute. The CDC reports abortion figures supplied by state public health agencies on an annual basis. However, not all states provide abortion figures to the CDC (e.g., California), and even among those that do, the completeness of the data varies widely. There are variations in the type of providers who must report their figures, the type of data they are required to report, and the consistency of the follow-up performed by the state public health agencies. There exists so much variation that the CDC concedes that its state abortion figures are incomplete and underreported. This study uses the Guttmacher Institute's state abortion figures because they are widely accepted as more accurate than the CDC's since they are based on a comprehensive survey of all abortion providers. The Guttmacher Institute's state abortion figures are used

**Table 1.** States with TRAP Licensing Fees or TRAP Physical Plant/Personnel Requirements by Year Enacted

State	TRAP	TRAP
	Licensing Fees	Physical Plant/ Personnel
Alabama	1982	2002
Alaska	1981	—
Arizona	1999	1999
Arkansas	1983	1999
Connecticut	1983	—
Florida	1978	1999
Illinois	1994	1985
Indiana	2005	2005
Kentucky	1982	1998
Louisiana	2001	2003
Michigan	1978	1978
Minnesota	1974	—
Mississippi	1991	1991
Missouri	1987	1987
North Carolina	—	1998
Oklahoma	—	1998
Pennsylvania	2002	1999
South Carolina	1995	1996
Tennessee	1998	1989
Texas	1989	1997
Utah	1981	1981

Source: NARAL (2009).

TRAP, Targeted Regulation of Abortion Provider.

extensively in studies of abortion (Blank, George, & London, 1996; Medoff, 2008) and are reported in the *Statistical Abstract of the United States*. However, the Guttmacher Institute only collects abortion data periodically. State abortion and state abortion price data is available from the Guttmacher Institute, and gender-specific socioeconomic correlates of abortion demand are available *only* for the years 1982, 1992, 1996, 2000, and 2005.

The dependent variable in this study is a state's abortion ratio: the number of abortions per 1,000 pregnancies of women of childbearing ages 15–44 for the years  $t = 1982, 1992, 1996, 2000,$  and 2005. Thus the data set consists of 250 observations.

### **Independent Variables**

The fertility control model predicts that the abortion decision reflects women's income, marital status, preferences for children, abortion attitudes, and the full cost of abortion services.

### **Socioeconomic Variables**

State differences in the socioeconomic characteristics of women of childbearing age, which have been found in the literature to be important predictors of the abortion ratio, must be controlled for in order to examine whether any relationship between state abortion ratios and TRAP laws is truly causal. The literature (Medoff, 2007) has identified the following gender-specific socioeconomic variables as determinants of state abortion ratios: (1) the average full-time *Income* of women (in year 2000 dollars): a measure of the opportunity cost of a woman's time and of the potential income foregone as a result of childbearing; (2) the percentage of women ages 15–44 who are *Single*: single women have a higher cost of childrearing than married women; (3) the *% Women 18–24*: the percentage of women of childbearing ages 15–44 who are between the most sexually active ages of 18–24; (4) the percentage of a state's population that are *Evangelical Christians* and belong to denominations that believe in the sanctity of life and that abortion is unacceptable in nearly all circumstances for the years 1982, 1992, 1996, 2000, and 2005.

One of the most frequently mentioned potential problems in studies of the relationship between a state's restrictive abortion laws and its abortion ratio is the failure to control for differences in a state's attitudes, beliefs, or ideology about abortion that may be correlated with a state's abortion policies resulting in spurious estimates of the effects of restrictive state abortion laws. A state's abortion attitudes may affect both a state's restrictive abortion laws and the state's abortion ratio. For example Utah, because of its antiabortion attitudes, may have fewer abortions and may also be more likely to enact restrictive abortion laws. State differences in *Antiabortion Attitudes* are controlled for by using the measure of a state's political ideology described in Erikson, Wright, and McIver (1993): the percentage of respondents who identify themselves as conservative minus the percentage of respondents who identify themselves as liberal in the CBS/New York Times Opinion Poll for each state in the years 1982, 1992, 1996, 2000, and 2005. Schnell (1993) found that there is a strong connection between those who self-identify themselves as having a conservative political ideology and antiabortion attitudes. Those who

self-identify themselves as conservative were found to be more likely to participate in an antiabortion protest, contribute money to an antiabortion organization, or write a letter disapproving of abortion to politicians.

### **Abortion Cost Variables**

The *Abortion Price* is the average cost (in year 2000 dollars) of an abortion performed during the first trimester of pregnancy in each state for the years 1982, 1992, 1996, 2000, and 2005.

The variable *No Medicaid Funding* equals one if a state did not allow its public funds to be used to pay for Medicaid abortions for poor women during time period  $t$ . However, the impact of a state Medicaid funding restriction depends on the size of the state's population eligible for Medicaid. In order to allow the impact of the Medicaid funding restriction to vary with the size of a state's Medicaid population the No Medicaid Funding variable is interacted with the percentage of a state's population in poverty (*No Medicaid Funding*  $\times$  *Poverty*).

The variable *Parental Involvement Law* equals one if a state required teen minors to involve a parent in their abortion decision during time period  $t$ . However, teen minors can circumvent a parental involvement law by traveling to bordering states that do not compel parental involvement to obtain an abortion. Following Blank and others (1996), the variable *Parental Border Involvement* is a weighted average of all the bordering states that do not enforce a parental involvement law. The weights are the inverse distances between the most populated metropolitan area in each bordering state and the parental involvement state.

The variable *Mandatory Delay Law* equals one if during time period  $t$ , a state required a specific waiting period before an abortion is performed. The variable *Mandatory Counseling Law* equals one if during time period  $t$ , a state required that an abortion provider give to women state-mandated medical information about the abortion procedure.

The variables of particular interest in this study are the TRAP licensing fee and the TRAP physical plant/personnel laws. The annual TRAP licensing fee varies from state to state, but is generally unavailable. The variable *TRAP Licensing Fee* equals one if, during time period  $t$ , a state requires an annual fee be paid to be licensed as an abortion provider. The variable *TRAP Plant/Personnel* equals one if, during time period  $t$ , a state imposes regulations or requirements on abortion providers' physical plant and/or personnel that are not imposed on other comparable medical providers. If either TRAP law increases the search costs of women seeking an abortion provider and/or increases women's time and travel costs associated with obtaining an abortion and the demand for abortion is sensitive to this increase in the full cost of abortion services, then the predicted effect of TRAP laws on abortion demand is negative.

Two obvious concerns in the estimation of women's abortion demand are that (1) a state's restrictive abortion laws are not exogenous, and (2) the presence of autocorrelation in the analysis of pooled time-series cross-sectional data. It is possible that a state's restrictive abortion laws were enacted in response to the level of abortion demand rather than the other way around. If restrictive abortion laws were enacted in response to increasing abortion rates, one would observe a spurious positive relationship between the restrictive abortion laws and abortion rates.

However, Cohen and Barrilleaux (1993) found that after controlling for state political partisanship, state political ideology, and state political party competitiveness, state abortion policy (as measured by whether a state passed legislation calling for a constitutional amendment to ban abortion) was not a function of abortion use. Policy makers are not enacting restrictive abortion laws in response to the demand for abortion nor are they reacting to the demand for abortion in their state. They did find that the political strength of antiabortion interest advocacy groups had a significant positive impact on state action on the constitutional amendment to ban abortion. Similarly, Medoff (2002) found that the restrictiveness of a state's abortion policy (as measured by the extent of legislative activity enacted restricting abortion access) was predominately a function of the relative political strength of well-organized and highly mobilized antiabortion interest advocacy groups. In addition, the Durbin–Watson test statistic for autocorrelation and the Breusch–Godfrey chi-square test statistic for residual correlation indicated that autocorrelation did not present a problem for the analysis (Greene, 2000). The standard errors were calculated using STATA version 9.0 robust standard errors clustered by state.

### Discussion of Empirical Results

Before examining whether TRAP laws have an independent effect on women's abortion demand, it is important to determine whether there are differences in the characteristics of women who had abortions in TRAP states and non-TRAP states. Table 2 shows the percentage distribution of women who obtained abortions in 2000, by selected characteristics, in TRAP and non-TRAP states. The figures in Table 2 indicate that the characteristics of women who had abortions in TRAP states are virtually identical to those of women in non-TRAP states. In a TRAP or a non-TRAP state, the average woman who seeks an abortion is 25 years old, unmarried, and white. She is typically having her first abortion, which is performed around the 8th week of pregnancy.

In the abortion demand equation, the price of an abortion cannot be treated as exogenous, since the abortion price is determined by the providers of abortion services and women who demand abortion services. The econometric solution to

**Table 2.** Characteristics of Women Obtaining Abortions in 2000 in TRAP and Non-TRAP States, by Selected Characteristics (%)

Characteristic	TRAP States	Non-TRAP States
Married	18.7	18.7
Unmarried	81.3	81.3
White	56.3	54.4
Average age (years)	25.5	25.8
Ages 15–19	18.2	18.4
Ages 20–29	57.5	55.0
Ages 30–39	21.6	23.7
First-time abortions	57.2	52.5
Previous live births = zero	39.1	39.1
Abortion $\leq$ 8 weeks of gestation	59.4	56.3
Abortion $\geq$ 21 weeks of gestation	0.9	1.9
Out-of-state abortions	8.6	8.7

TRAP, Targeted Regulation of Abortion Provider.

**Table 3.** Estimates of Abortion Demand, 1982–2005

Independent Variables	Dependent Variable	
	Number of Abortions/1,000 Pregnancies	
	(1)	(2)
Abortion price	-0.9265 (4.06)***	-1.0019 (3.84)***
No Medicaid funding	-63.7578 (2.72)***	-60.6670 (2.59)**
Parental involvement law	-67.3528 (3.85)***	-68.0112 (3.82)***
Mandatory delay law	-44.8562 (1.61)	-33.4360 (1.63)
Mandatory counseling law	-30.7948 (1.63)	-32.1547 (1.64)
No Medicaid funding × poverty	2.4583 (1.15)	2.4825 (1.14)
TRAP licensing fee	1.0558 (0.07)	-164.3160 (1.50)
TRAP plant/personnel	-27.3317 (1.61)	-186.7800 (1.65)
Income	0.0033 (1.95)**	0.0029 (1.73)*
Single	2.9209 (1.31)	2.8850 (1.25)
% Women 18–24	0.8399 (2.27)**	0.5806 (1.69)*
Evangelical Christians	-1.1467 (2.09)**	-1.3116 (2.21)**
Antiabortion attitudes	-0.1372 (0.21)	0.1187 (0.17)
Parental border involvement	0.0374 (0.14)	0.1054 (0.39)
Abortion price × TRAP licensing fee	—	0.4285 (1.50)
Abortion price × TRAP plant/personnel	—	0.4289 (1.49)
F-statistic	8.19	7.75

Note: Absolute value of t-statistics in parentheses:

\* $p < .10$ ; \*\* $p < .05$ ; \*\*\* $p < .01$ .

TRAP, Targeted Regulation of Abortion Provider.

this problem is to find instruments for the abortion price that are correlated with the abortion price, but do not directly affect the demand for abortion and then estimate the abortion demand equation using two-stage least-squares. The instruments selected are similar to those used by Blank and others (1996) and Levine and others (1996), who argue that the following instruments are related to the overall level and cost of providing medical services in a state, but should be unrelated to the demand for abortion in a state. The instruments selected for the abortion price are (1) the number of nurses per 100,000 women of childbearing ages (15–44); (2) the number of non-OBGYN physicians per 100,000 women of childbearing age; and (3) the average weekly wages of employees in the offices and clinics of physicians. The empirical results are shown in Table 3, column 1.

The price of an abortion is a significant determinant of a state's abortion ratio. The abortion price is significantly negative at the 0.001 level of significance. Every \$50 increase in the real price of an abortion decreases a state's abortion ratio by 46.32 abortions per 1,000 pregnancies of childbearing women. Similarly, women's income has a significantly positive ( $p < .05$ ) impact on the abortion ratio. A \$1,000 increase in women's real income increases a state's abortion ratio by 32.99 abortions per 1,000 pregnancies. As hypothesized, the percentage of childbearing women between the ages of 18–24 has a significant positive ( $p < .05$ ) effect, and the percentage of Evangelical Christians has a significant negative ( $p < .05$ ) effect on a state's abortion ratio. However, both variables have a numerically small impact on a state's abortion ratio. An increase of 1 percentage point in the % Women 18–24 increases a state's abortion ratio by 0.83 abortions and an increase of 1 percentage point in the percentage of Evangelical Christians decreases a state's abortion ratio by 1.1 abortions per 1,000 pregnancies. Neither the percentage of single women nor antiabortion attitudes has a significant impact on a state's abortion ratio.

The No Medicaid Funding restriction variable and the interaction variable (No Medicaid Funding  $\times$  Poverty) are jointly significantly different from zero. The numerical impact of a Medicaid funding restriction (assuming a state had the sample average poverty rate) is to decrease a state's abortion ratio by 39.76 abortions per 1,000 pregnancies (or equivalently, a reduction in a state's abortion ratio by 4 percentage points) as compared with states without a Medicaid funding restriction. Parental involvement laws have a significantly negative ( $p < .01$ ) impact on a state's abortion ratio. The numerical impact of a parental involvement law is to decrease a state's abortion ratio by 67.3 abortions per 1,000 pregnancies (or equivalently, a reduction in a state's abortion ratio by 6.7 percentage points) as compared with states without a parental involvement law. Neither a mandatory counseling law nor a mandatory delay law has a significant impact on a state's abortion ratio.

If one of the aims of abortion opponents for enacting TRAP laws is to decrease abortion demand by increasing women's search costs and/or travel costs associated with obtaining an abortion, then the empirical results show that such efforts have been unsuccessful. Neither a TRAP licensing fee law nor a TRAP plant/personnel law has a significant independent impact on a state's abortion demand.

Even though TRAP laws were found not to have a statistically significant direct effect on a state's abortion ratio, it is possible that the TRAP laws may have a spillover effect on the demand for abortion by causing an increase in the price charged by abortion providers. This higher abortion price, in turn, will cause a decrease in abortion demand. In order to more systematically test whether TRAP licensing fee and TRAP plant/personnel laws have a spillover effect on the abortion price, each TRAP law was interacted with the abortion price (Abortion Price  $\times$  TRAP Licensing Fee, Abortion Price  $\times$  TRAP Plant/Personnel), and the abortion demand equation was reestimated, and the empirical results appear in Table 3, column 2. If TRAP laws have a spillover effect on the abortion price, then the coefficient of each interaction variable should be significantly negative. The empirical results show that neither of the interaction variables is significantly different from zero, and the other coefficients in the abortion demand equation remained virtually identical to those reported in Table 3, column 1. This suggests that TRAP licensing fee laws and TRAP plant/personnel laws did not significantly decrease women's abortion demand by increasing the price of an abortion.

The empirical results in columns 1 and 2 of Table 3 suggest that TRAP licensing fee and TRAP physical plant/personnel laws had no significant impact on a state's abortion ratio. However, over the time period examined (1982–2005), there may have been time-varying factors that affected the unprotected sexual behavior of women of childbearing age equally in all states. Such factors include greater awareness of the possible health consequences from unprotected sexual activity, and greater availability of efficacious alternative contraceptive methods. If these time-varying factors were correlated with the enactment of TRAP laws, then the estimates of the impact of TRAP laws on a state's abortion ratio reported in Table 3 would be spurious, since they include some of the effects of the omitted time-varying factors. In order to control for this possibility, four time trend dummy variables were included in the estimation of the abortion demand equation: *Time 2005*, *Time 2000*, *Time 1996*, and *Time 1992*. The abortion demand equation was reestimated, and the empirical results appear in Table 4, column 1 (with no interaction terms between TRAP laws

**Table 4.** Estimates of Abortion Demand, 1982–2005 (with Time Effects)

Independent Variables	Dependent Variable	
	Number of Abortions/1,000 Pregnancies	
	(1)	(2)
Abortion price	–0.8065 (5.02)***	–0.8257 (4.79)***
No Medicaid funding	–39.2382 (2.12)**	–35.8145 (1.97)**
Parental involvement law	–43.0674 (3.04)***	–42.8259 (3.04)***
Mandatory delay law	–32.1369 (1.47)	–26.0891 (1.17)
Mandatory counseling law	–12.4952 (0.79)	–10.5534 (0.65)
No Medicaid funding × poverty	0.9887 (0.56)	1.0019 (0.58)
TRAP licensing fee	1.3271 (0.11)	–128.6770 (1.65)
TRAP plant/personnel	–6.2939 (0.46)	–78.1147 (0.89)
Income	0.0126 (7.01)***	0.0121 (6.91)***
Single	0.7527 (0.42)	0.9028 (0.51)
% Women 18–24	0.4831 (1.69)*	0.2614 (0.85)
Evangelical Christians	–0.8901 (2.04)**	–0.9906 (2.21)**
Antiabortion attitudes	–0.2529 (0.48)	–0.1400 (0.26)
Parental border involvement	0.2392 (1.19)	0.2700 (1.25)
Abortion price × TRAP licensing fee	—	0.3367 (1.66)
Abortion price × TRAP plant/personnel	—	0.1971 (0.87)
F-statistic	16.76	15.56

Note: All specifications include time effects.

Absolute value of t-statistics in parentheses:

\*\*p < .05; \*\*\*p < .01.

TRAP, Targeted Regulation of Abortion Provider.

and the abortion price) and in column 2 (with interaction terms between TRAP laws and the abortion price).

The coefficients of the abortion price, No Medicaid Funding and Parental Involvement Law, are still significantly negative, but their impact on a state's abortion ratio are somewhat smaller in substantive magnitude than those previously reported in columns 1 and 2 of Table 3. Neither of the TRAP laws has a statistically significant impact on a state's abortion ratio. Even after controlling for secular changes that are common to all states over time, a TRAP licensing fee and a TRAP physical plant/personnel law do not have a significant independent impact on women's abortion demand.

### **Post-Planned Parenthood of Southeastern Pennsylvania v. Casey Estimation of the Abortion Demand Equation**

Goggin (1993) argues that after the Supreme Court's 1992 *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision, antiabortion interest groups mobilized to push for more restrictive state abortion policies. These antiabortion interest groups urged state legislatures to enact more laws regulating abortion access, particularly TRAP laws. Two-thirds of the states with TRAP laws enacted a TRAP law after the 1992 *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision. As a consequence, including abortion data prior to 1993 may have confounded the empirical results reported in Tables 3 and 4. In order to take into account this possibility, the abortion demand equation was reestimated for the post-*Planned Parenthood of Southeastern Pennsylvania v. Casey* time period of 1996, 2000, and 2005. The empirical results appear in Table 5, Column 1 (no time trend or interaction variables) and

**Table 5.** Estimates of Abortion Demand, 1996–2005

Independent Variables	Dependent Variable	
	Number of Abortions/1,000 Pregnancies	
	(1)	(2)
Abortion price	−0.9533 (5.45)***	−1.0038 (5.40)***
No Medicaid funding	−59.7048 (2.33)**	−49.8351 (1.99)**
Parental involvement law	−41.7664 (2.09)**	−41.8744 (2.13)**
Mandatory delay law	−32.0825 (1.24)	−31.8330 (1.25)
Mandatory counseling law	−24.1436 (1.42)	−19.2896 (1.12)
No Medicaid funding × poverty	4.4096 (1.59)	4.4092 (1.48)
TRAP licensing fee	2.4304 (0.16)	−185.5510 (1.16)
TRAP plant/personnel	−17.9833 (1.07)	−119.1350 (1.22)
Income	0.0105 (5.12)***	0.0097 (4.85)***
Single	−1.8155 (0.68)	−1.0945 (0.43)
% Women 18–24	0.3659 (1.14)	0.0850 (0.25)
Evangelical Christians	−0.7806 (1.26)	−0.8375 (1.37)
Antiabortion attitudes	−0.7310 (0.90)	−0.5095 (0.64)
Parental border involvement	−0.0933 (0.37)	−0.0328 (0.13)
Abortion price × TRAP licensing fee	—	0.4764 (2.17)
Abortion price × TRAP plant/personnel	—	0.2839 (1.11)
F-statistic	8.19	7.81

Note: Absolute value of t-statistics in parentheses.

\*p < .10; \*\*p < .05; \*\*\*p < .01.

TRAP, Targeted Regulation of Abortion Provider.

**Table 6.** Estimates of Abortion Demand, 1996–2005 (with Time Effects)

Independent Variables	Dependent Variable	
	Number of Abortions/1,000 Pregnancies	
	(1)	(2)
Abortion price	−0.6525 (4.58)***	−0.7020 (4.26)***
No Medicaid funding	−52.1252 (2.69)***	−47.4259 (2.41)***
Parental involvement law	−44.0700 (2.91)***	−44.4517 (2.87)***
Mandatory delay law	−34.3626 (1.63)	−34.3886 (1.73)
Mandatory counseling law	−13.0520 (0.98)	−10.3488 (0.74)
No Medicaid funding × poverty	4.7751 (2.29)**	4.5590 (2.13)**
TRAP licensing fee	1.8488 (0.16)	−97.4071 (1.35)
TRAP plant/personnel	−14.5405 (1.15)	−57.4030 (0.73)
Income	0.0132 (7.64)***	0.0127 (6.97)***
Single	0.0323 (0.01)	0.1976 (0.09)
% Women 18–24	0.4178 (1.72)*	0.2685 (1.01)
Evangelical Christians	−0.7583 (1.69)*	−0.7823 (1.69)*
Antiabortion attitudes	−0.3723 (0.59)	−0.3323 (0.52)
Parental border involvement	0.1246 (0.62)	0.1457 (0.72)
Abortion price × TRAP licensing fee	—	0.2513 (1.37)
Abortion price × TRAP plant/personnel	—	0.1219 (0.59)
F-statistic	19.20	16.18

Note: All specifications include time effects.

Absolute value of t-statistics in parentheses:

\*p < .10; \*\*p < .05; \*\*\*p < .01.

TRAP, Targeted Regulation of Abortion Provider.

column 2 (interaction variables, but no time trend variables included). Table 6, column 1 shows the empirical results when there are two time trend dummy variables for the years 2000 and 2005, but no interaction terms are included in the estimation of the abortion demand equation in the post-*Planned Parenthood of Southeastern Pennsylvania v. Casey* time period. Column 2 of Table 6 shows

the empirical results when both the two time trend dummy variables and the two interaction terms are included in the estimation of the abortion demand equation.

Whether or not the time trend variables and/or the interaction terms are included in the reestimation of the abortion demand equation in the post-*Planned Parenthood of Southeastern Pennsylvania v. Casey* time period, the empirical results are virtually identical to those previously reported in Tables 3 and 4, columns 1 and 2, respectively. The price of an abortion, No Medicaid Funding and Parental Involvement Laws have a significantly negative impact on a state's abortion ratio, while Mandatory Counseling Laws and Mandatory Delay Laws have no significant effect on a state's abortion ratio. During the post-*Planned Parenthood of Southeastern Pennsylvania v. Casey* time period, neither a TRAP licensing fee law nor a TRAP plant/personnel law has a significant effect on a state's abortion ratio. Furthermore, when the two interaction variables (Abortion Price  $\times$  TRAP Licensing Fee, Abortion Price  $\times$  TRAP Plant/Personnel) are included in the estimation of the abortion demand equation, over the post-*Planned Parenthood of Southeastern Pennsylvania v. Casey* time period 1996–2005, neither is significantly negative (Table 5, column 2 and Table 6, column 2). If one of the goals for enacting a TRAP licensing fee or a TRAP plant/personnel laws is to reduce women's abortion demand by increasing their search, travel, or time costs of obtaining an abortion, then the empirical results in Tables 4 and 5 suggest that during the post-*Planned Parenthood of Southeastern Pennsylvania v. Casey* time period, such laws were unsuccessful.

### **Robustness of the Empirical Results**

One way to test the robustness of the previously reported empirical results in Tables 3–6, that neither TRAP licensing fees nor TRAP plant/personnel laws have a significant independent impact on women's abortion demand, is to estimate alternative specifications of the abortion demand equation.

Norrander (2001) constructed an abortion attitude index from the Senate National Election Study state-based opinion survey data of the 1988, 1990, and 1992 U.S. Senate races. The survey asks voters the question "Do you think abortion should be legal under all circumstances, certain circumstances or never legal under any circumstances." One drawback of using Norrander's index in this study is that state-level abortion attitude figures are only available for 1992. However, Wetstein (1993, 1996) and Wilcox and Riches (2002) found that public abortion attitudes are largely stable over time and unlikely to change due to changes in the political or legal environment. Both argue that the reason for this stability is that the abortion issue has been controversial for such a long time, attitudes are easily formed and difficult to change. The Norrander Abortion Attitude Index ranges in value from 1 to 5. The value 1 indicates the belief that abortion should be legal in all circumstances, and the value 5 indicates the belief that abortion should never be legal under any circumstances in a state.

The abortion demand equation was reestimated with the Norrander Abortion Attitude Index replacing the Erickson, Wright, and McIver (1993) general political ideology measure. The empirical results (due to space limitations the complete empirical results are available upon request) show that regardless of the specification

in Tables 3–6, neither a TRAP licensing fee nor a TRAP plant/personnel law has a significant independent impact on a state's abortion demand.

The Catholic Church has fervent beliefs about the sanctity of life and strong moral prohibitions against abortion, equating it to murder (Goggin, 1993). When the percentage of a state's population that is Catholic is included in the estimation of the abortion demand equation, regardless of the specification, the percentage of Catholics in a state is not statistically significant (the complete empirical results are available upon request). This result is consistent with prior research that a schism exists between the official position of the Catholic Church and the abortion practices of Catholic women (Medoff, 1997). More importantly, neither a TRAP licensing fee nor a TRAP plant/personnel law had a statistically significant impact on a state's abortion ratio.

A number of other predictor variables were also investigated, including women's unemployment rate, percent nonwhite, and the Temporary Assistance to Needy Families stipend received by an unmarried woman with one child (in year 2000 dollars). The inclusion of these predictor variables in the estimation of women's abortion demand did not produce substantially different results from those reported in Tables 3–6 (complete empirical results are available upon request).

### **TRAP Laws, Abortion Providers, and Women's Travel Costs**

The empirical results in Tables 3–6 consistently show that women's abortion demand is not significantly influenced by TRAP licensing fees and TRAP plant/personnel laws. This suggests that TRAP licensing fee and TRAP plant/personnel laws represent a negligible increase in the full cost of obtaining an abortion to women. There are two alternative, though not mutually exclusive, explanations for this finding.

First, it is a fact that between 1982 and 2005, the number of abortion providers decreased by 38 percent. But this decrease in the number of abortion providers since 1982 has also been accompanied by a shift in the type of provider performing abortions. In 1982, 72 percent of all abortion providers had small caseloads (less than 400 abortions performed), while 17 percent of all abortion providers had large caseloads (1,000 or more abortions performed). Over the period 1982–2005, abortion providers with small caseloads declined in number and as a percentage of all abortion providers. In 2005, abortion providers with small caseloads (less than 400 abortions performed) were 4 percent of all abortion providers, and they performed less than 7 percent of all abortions. But, because of economies of scale (i.e., producing larger quantities of a product reduces the unit cost of the product), the number of abortions performed in clinics with large caseloads (1,000 or more abortions performed) has significantly increased. In 2005, clinics with large abortion caseloads (+1,000) were 22 percent of all abortion providers, but accounted for 80 percent of all abortions performed (Jones et al., 2008). In other words, since 1982, providers with larger scale of operations are performing more abortions. Even though there are fewer abortion providers, women's search costs have not appreciably increased since larger abortion providers advertise more, making them easier to locate (Henshaw, 1995).

Thus, even though the number of abortion providers decreased over the period 1982–2005 most of the reduction were abortion providers with small caseloads. By

2005, abortion clinics with large caseloads accounted for 80 percent of all abortions performed. These large abortion providers (1) advertise their services more widely, reducing women's search costs of locating an abortion provider; and (2) locate their clinics in large metropolitan areas, which have greater numbers of women of childbearing age, which reduces women's travel/time costs of obtaining an abortion.

Second, women's travel/time costs to obtain an abortion have not increased over the period 1982–2005. Jones and others (2008) from the Guttmacher Institute reported that in 2005: 73 percent of women traveled less than 50 miles (approximately one hour of travel), and 19 percent traveled 50–100 miles to obtain an abortion. Only 8 percent of women traveled more than 100 miles to access an abortion. These figures are comparable to those reported by the Guttmacher Institute for 1982 (Henshaw, Forrest, & Blaine, 1984). In 2005, women in Northeast (New York, New Jersey, Massachusetts) and Pacific (California, Oregon, Washington) states that have high abortion rates traveled the shortest distances: 86 percent of women traveled less than 50 miles, and only 3 percent traveled more than 100 miles. Women in Southern (Alabama, Mississippi, Kentucky) and West North Central (North Dakota, South Dakota, Missouri) states that have low abortion rates traveled the farthest to obtain an abortion, but only 10 percent had to travel more than 100 miles to access abortion services. These figures suggest that most women reside within reasonably close proximity to an abortion provider. Almost 90 percent of women live within a 90-minute drive (100 miles) to an abortion provider, and virtually all women live within a 2–3 hours drive (100–200 miles) to an abortion provider.

## Conclusion

Targeted Regulation of Abortion Providers laws (TRAP laws) single out abortion providers and impose on them regulations or requirements that are not imposed on other comparable medical providers or medical facilities. On the supply side, the explicit or implicit intent of TRAP laws, according to prochoice supporters, is to deter physicians from becoming or remaining abortion providers and reduce the supply of abortion services. TRAP laws may also reduce abortion demand by increasing women's search, travel, and time costs of obtaining an abortion. According to prochoice supporters, the goal of antiabortion opponents is, through TRAP laws, to reduce the number of abortions performed in their state and thus effectively overturn the Supreme Court's legalization of abortion in their 1973 *Roe vs. Wade* decision. Whether TRAP laws have an independent impact on a state's abortion demand is ultimately an empirical question.

This study examines whether TRAP licensing fee and TRAP plant/personnel laws have a negative impact on abortion demand using state data pooled over the years 1982, 1992, 1996, 2000, and 2005. The empirical results are consistent with prior research: (1) abortion follows the fundamental law of demand—the higher the price of an abortion, the lower the abortion demand; (2) abortion is a normal good with respect to income—increases in income increase the demand for abortions; (3) states that do not fund Medicaid abortions for poor women have 4 percent fewer abortions than states that fund Medicaid abortions; (4) states with parental involvement laws have 6 percent fewer abortions than states without

parental involvement laws; and (5) states with mandatory delay or mandatory counseling laws do not have significantly fewer abortions than states without these laws (Medoff, 2007).

The empirical results also show that a TRAP licensing fee law and a TRAP plant/personnel law does not have a statistically significant negative impact on a state's demand for abortion over the time period 1982–2005. Even after controlling for time-varying factors that are common to all states or the time period after the Supreme Court's 1992 *Planned Parenthood of Southeastern Pennsylvania v. Casey* decision, a TRAP licensing fee and a TRAP plant/personnel requirements law did not have a significant negative impact on a state's abortion demand.

If one of the goals of abortion opponents is to reduce women's demand for abortion through the enactment of TRAP laws, the empirical results suggest that, so far, such efforts have been ineffectual.

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