

**THE EFFECTS OF STATUTORY RAPE LAWS  
ON NONMARITAL TEENAGE CHILDBEARING**

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Abstract

Many policymakers view the enforcement of statutory rape laws as a way to reduce teenage childbirths. We consider whether unmarried teenage girls covered by a state statutory rape law are less likely to give birth than girls who are not covered by a statutory rape law. The *presence* of statutory rape laws is negatively correlated with nonmarital birthrates for white females but is not a significant predictor for black or Hispanic females. In contrast, the *enforcement* of statutory rape laws has a deterrent effect on teen childbearing for blacks and Hispanics but not for whites. (JEL J13, K14)

## I. INTRODUCTION

We are satisfied not only that the prevention of illegitimate pregnancy is at least one of the “purposes” of the [California statutory rape] statute, but also that the State has a strong interest in preventing such pregnancy. At the risk of stating the obvious, teenage pregnancies, which have increased dramatically over the last two decades, have significant social, medical and economic consequences for both the mother and her child, and the State.

—*Michael M. v. Sonoma County Superior Court* (1981, p.470)

With these words, the United States Supreme Court upheld the ruling of the Supreme Court of California that a state statutory rape law that punishes males but not females for engaging in consensual sex, under certain circumstances, did not violate the Equal Protection Clause of the Fourteenth Amendment. *Michael M. v. Sonoma County* (1981) argues that one goal of statutory rape laws, which criminalize consensual sexual relations with minors in certain cases, is to protect young women from the sexual advances of older men, advances which could result in nonmarital teenage pregnancies.

There is widespread concern in the United States about teenage pregnancies and childbirths.<sup>1</sup> The relationships between giving birth as a teenager and suffering economic and social hardships as a young adult are well documented, although the literature fails to reach a consensus on whether this relationship is causal. Numerous studies show that having a child before age 18 has a negative and significant impact on the mother’s educational attainment, wages, and income (Hoffman, Foster, and Furstenberg, 1993; Jones, Astone, Keyl, Kim, and Alexander, 1999; McElroy, 1996; Klepinger, Lundberg, and Plotnick, 1999). On the other hand, Geronimus and Korenman (1992) and Hotz, Sanders, and McElroy (1999) find that teenage

childbearing does not have significant effects.<sup>2</sup> Although the latter two studies use innovative techniques for isolating the causal impact of teenage childbearing, they have small sample sizes and other data limitations. Therefore, Hoffman (1998) concludes that the causal effect of teenage childbearing is still not known.

Although teenage birthrates have declined for all races and ethnicities from their peak in 1991 (AGI, 1999), state governments still have an interest in developing and implementing policies that reduce births to teenagers. The public policy ramifications are varied, ranging from effects on the welfare system to demands for controversial health care, including contraception and abortions. One weapon in the fight against teenage pregnancy is statutory rape law. Statutory rape laws exist as early as 1275 when the Statute of Westminster declared that “the King prohibiteth that none do ravish ... any Maiden within age” (Cocca, 2000, p.34). During Colonial times, most states had statutory rape laws protecting females under the age of either ten or twelve. During these times, a young woman’s chastity made her more valuable as property. Throughout history, states raised the age of consent. By the 1890s, almost every state had raised the age of consent, many to 14 or older (Cocca, 2000).

Every state has a statutory rape law, but each state’s definition of statutory rape differs across three dimensions.<sup>3</sup> The first dimension is the age of consent (i.e. the age of the victim), which ranges from 14 to 18 years old. The second dimension is the age of the offender, either in conjunction with the age of the victim (i.e. the age difference between the man and woman) or by itself. The third dimension is the severity of the law. All states have felony statutory rape laws, but some states also have misdemeanor offenses.

In 1996, welfare reform (Personal Responsibility and Work Opportunity Reconciliation Act, or PRWORA) contained a section on the links between teenage pregnancies and statutory

rape laws. The PRWORA states, “An effective strategy to combat teenage pregnancy must address the issue of male responsibility, including statutory rape culpability and prevention” (Cocca, 2000, p.231). The PRWORA required states to submit plans that included provisions on how to reduce nonmarital pregnancies, especially for teenage girls (Cocca, 2000). Federal grant money was available to states whose plans contained programs for “education and training on the problem of statutory rape so that teenage pregnancy prevention programs may be expanded in scope to include men” (Cocca, 2000, p.233). Ten states amended their statutory rape laws to target males who impregnated their female partners (Cocca, 2000).

Previous research shows that a large percentage of children born to teenage girls are fathered by men who are not minors. For example, in a study of teenage births to girls in California in 1993, between 47 and 63 percent of the children were fathered by men aged 19 or older (Shafer and Teare, 1996). Virginia hospital records indicate that in 2001 70 percent of births to 14 and 15 year-old mothers were fathered by men at least three years older than their partners (Associated Press, 2004). Another study suggests that approximately half of the babies born to minor girls are fathered by adult men (Donovan, 1997).

Many policymakers view the enforcement of statutory rape laws as a way to reduce teenage pregnancies. For example, the district attorney’s office in Riverside, California, received a \$150,000 state grant to fund a statutory rape prosecution team in 1996 (Morgan, 1996). California Governor Pete Wilson remarked in his State of the State address that, “It’s not macho to get a teenager pregnant, but if you lack the decency to understand this yourself we’ll give you a year to think about it in county jail” (Elton, 1997, p.12). In the summer of 2004, the state of Virginia used federal money for statutory rape awareness to purchase billboard advertising; one ad read, “Isn’t she a little young? Sex with a minor. Don’t go there” (Associated Press, 2004).

Researchers rarely find evidence that teenage girls consider the effects of governmental policies when making childbearing decisions. For example, the teen fertility literature often fails to find significant effects of state and federal policies, such as parental notification of abortion, on births to teenagers (Blank, George, and London, 1996; Joyce and Kaestner, 1996). For similar reasons, Donovan (1997) and Elo, King, and Furstenberg (1999) predict either small or insignificant effects of statutory rape laws on teenage pregnancies but do not test the predictions. Given the competing views on the effectiveness of statutory rape laws, it is important to conduct empirical research to consider whether such laws are effective in reducing teenage childbirths.

Our paper empirically tests the hypothesis that when a teenage girl is covered by a state statutory rape law, she is less likely to give birth. We also test whether the enforcement of statutory rape laws has any impact on teenage childbearing. Our research is the first to empirically consider the effects of statutory rape laws, and it contributes to an extensive literature on the potential determinants of teenage births, with a special emphasis on the effects of state policies.

All models we test show that the *presence* of statutory rape laws reduces the probability that a white teenage girl gives birth; we do not find an effect for black and Hispanic females. In addition, we find that the *enforcement* of statutory rape laws reduces the probability that a black/Hispanic teenage girl gives birth, but we do not find an effect for white females.

## II. DATA

The data come from the Current Population Survey (CPS), a survey conducted by the United States Census Bureau. The CPS includes a national sample of approximately 50,000 households. Data from the June fertility survey contain information on the number and timing of live births for all females aged 15 to 44. Among the demographic information about the females

and their families is their current state of residence, which allows us to consider the applicable statutory rape laws. We utilize all June surveys from 1994 to 2000 (1994, 1995, 1998, and 2000). These years are chosen in order to provide large samples of teenage girls before and after the 1996 welfare reform (PRWORA), which made a number of changes to state policies, including the enforcement of statutory rape laws.

For this study, the sample includes unmarried young women aged 15 to 18 with non-missing data on fertility. Aged 15 is the youngest age with birth-history data. We exclude women over the age of 18 because data on mobility are not available, and many females change state of residence when attending college. Married teens are excluded because they are the least likely group to be affected by statutory rape laws.

One of the greatest challenges to researchers studying teenage fertility is to find data with a sufficient number of teenagers who gave birth. The Vital Statistics provide large numbers of teenagers who gave birth in a given year. Unfortunately, the Vital Statistics provide no comparable data on teens who did *not* give birth, so it cannot be used to study the factors that affect the probability that a teenager gives birth. Instead, other researchers have used survey information – often from longitudinal data sets – on a large sample of teenage girls. In such samples, only a few hundred girls are teenage mothers (250—Hoffman, Foster, and Furstenberg, 1993; 175—Lundberg and Plotnick, 1995; 318—Lundberg and Plotnick, 1990). In contrast, the June CPS data that we use contain 788 teenage girls who give birth, measured as the number of women who reported having ever had one or more live births (excluding stillbirths). Hence, our data set incorporates more than double the number of teenage mothers included in the largest previous study.

### III. METHOD

Because statutory rape laws target pregnancy rather than childbirth, the best model would consider teenage pregnancies rather than teenage births. Unfortunately, individual-level data on teenage pregnancies are limited and often unreliable. For example, Jones and Forrest (1988) document the underreporting of abortions in survey data, and Lundberg and Plotnick (1995) find that blacks appear to under-report aborted pregnancies in the National Longitudinal Survey of Youth 1979 (NLSY79). Individual-level data on teen births are also rare, especially for data sets with observations in each state. Because less than five percent of unmarried girls aged 18 or less (the ages potentially covered by statutory rape laws) have had a live birth, large sample sizes are needed to have a sizable population of unmarried teen mothers. CPS data on teenage childbirths are available for thousands of young women. Given that state abortion rates are included in the model specification, teenage births provide a reasonable substitute measure for teenage pregnancies.

A. *Definition of the Statutory Rape Variable*

Defining a variable to measure statutory rape law is complicated. Several states have both felony and misdemeanor statutory rape laws. Many states also have at least two different age requirements for statutory rape laws: one that criminalizes consensual sex with a person younger than a specific age (without regard to the age of the offender) and one that criminalizes consensual sex because the offender is significantly older than the victim. For example, Iowa's felony laws are summarized as follows: "Any sex act with a person under fourteen is a felony. Any sex act with a person who is fourteen or fifteen is a felony if the offender is at least six years older than the victim" (Posner and Silbaugh, 1996, p.51). In other words, a fourteen year-old female in Iowa is protected from a 20-year old offender (or older) but not from a 19-year old offender (or younger).

For most of the women in our sample, whether or not they are covered by their state's statutory rape law depends on the age of the offender. Consequently, we create multiple dummy variables that measure statutory rape laws, each of which corresponds to a certain age of the offender. Our preferred variable is a dummy variable that is equal to one if the young woman would be considered a victim of felony statutory rape under her state's laws if she had consensual sex with a 21-year old male. It is our preferred specification because it is the most inclusive, i.e. it covers the most women. We also create variables for each age from 16 to 20, where the variable is defined for an offender of that age or older.

The statutory rape variable becomes more inclusive (i.e. covers more women) as we increase the age of the potential offender. The reason is simple: If a woman is covered by her state's statutory rape law for an offender aged 16, she is covered for an offender of any age greater than 16. Consequently, these offender-age-specific statutory rape variables are highly correlated, and we only include one of them in each specification. We estimate six different specifications, one for an aged 16 offender, one for an aged 17 offender, and so on.

A few states have provisions in their statutory rape laws that allow an offender to escape prosecution if he reasonably thought that the young woman was at least as old as the age of consent. If such an age-mistake defense provision weakens that state's statutory rape laws, then one would expect weaker effects of the statutory rape laws in those states. We test this assumption by estimating models under the two most extreme assumptions: 1) an age-mistake defense provision does not weaken statutory rape laws, and 2) an age-mistake defense provision negates any effect of statutory rape laws.<sup>4</sup> The results from the two models are nearly identical, which suggests that an age-mistake defense law is not a significant predictor of teenage births. We only report the results from the first set of models.

## B. *General Model*

The first model investigates the effects of the presence of a statutory rape law. Data are from 1994 and 1995 only so that the effects of statutory rape laws are not commingled with effects of changes in enforcement due to PRWORA in 1996. The following equation is a binary logit model for the outcome of whether or not a teenager gives birth:

$$(1) \quad \text{Prob}(Y_i = 1) = \frac{e^{W_i\gamma + SR_i\alpha + Y94_i\tau + X_i\beta}}{1 + e^{W_i\gamma + SR_i\alpha + Y94_i\tau + X_i\beta}},$$

where  $i$  denotes the individual woman;  $Y_i$  is a dummy variable that takes on the value of one for a young woman (aged 15 to 18) who gave birth and zero for a young woman who did not;  $W_i$  is a series of state-level policy and control variables (state sexual education requirements, abortion rates, parental consent and notification laws, access to contraception, welfare benefits, per capita income, unemployment rate, percentage Catholic);  $SR_i$  is a dummy variable equal to one if the young woman would be considered a victim of felony statutory rape under her state's laws if she had consensual sex with a 21-year old male;<sup>5</sup>  $Y94_i$  is a dummy variable for observations in the 1994 CPS; and  $X_i$  is a vector of the young woman's individual and family characteristics (her race/ethnicity, her age, whether she is foreign born, her family's income, whether she lives with both parents). In addition to the binary logit model, this paper also employs a probit model to check for robustness.<sup>6</sup>

## C. *Enforcement Model*

The second model focuses on the effect of enforcement. If offenders do not expect to be prosecuted even if they knowingly violate statutory rape laws, then statutory rape variables could be insignificant predictors of teenage births. In 1996 and 1997, ten states amended their statutory rape laws "to target males whose female partners become pregnant" (Cocca, 2000, p.59).<sup>7</sup> Specifically, the ten states enacted provisions to require that welfare authorities and

health care providers report illegal sexual activity, typically evidenced by pregnancies, to district attorneys or other law enforcement officials (Cocca, 2000). To study the impact of these changes in enforcement, we use data from 1998 and 2000 to estimate the following binary logit:

$$2) \quad \text{Prob}(Y_i = 1) = \frac{e^{W_i\gamma + SR_i\alpha + ENF_i\phi + SR*ENF_i\lambda + Y98_i\tau + X_i\beta}}{1 + e^{W_i\gamma + SR_i\alpha + ENF_i\phi + SR*ENF_i\lambda + Y98_i\tau + X_i\beta}} .$$

$Y_i$ ,  $W_i$ ,  $SR_i$ , and  $X_i$  are defined as in equation (1).  $ENF_i$  is a dummy variable equal to one for the ten states that passed enforcement provisions in 1996 or 1997, and  $SR*ENF_i$  is an interaction term that captures the effect of the law change while holding constant the existence of statutory rape laws. Therefore, we can isolate the effects of enforcement from overall differences in statutory rape laws, something that is not possible in the general model.  $Y98_i$  is a dummy variable for observations in the 1998 CPS.

#### *D. Difference-in-Difference-in-Difference Model*

The third model combines the first two models in order to provide a comprehensive analysis of the effects of statutory rape laws. In other words, observations from all years are combined into a single difference-in-difference-in-difference (DDD) model to estimate the effects of statutory rape laws on teenage childbearing. The use of the DDD model in this paper is similar to Gruber (1994), who uses the DDD model to study the effect of federal laws that required that health insurance plans cover childbirth comprehensively (maternity mandates). Gruber states, “The goal of the empirical work is to identify the effect of laws passed by certain states (experimental states) which affected particular groups of individuals (treatment group)” (1994, p.627).

Gruber (1994) uses as his treatment group married women aged 20-40 because this is the group most likely to become pregnant. The experimental states are those that passed maternity mandates prior to the federal law. The years under study are restricted to two years before and

two years after the passage of the federal legislation. Gruber (1994) includes year effects, state effects, and state-by-year effects as controls.

Our approach is quite similar. Our treatment group is unmarried teenage girls who are covered by statutory rape laws. Our experimental states are those that passed enforcement provisions, and the years under study are two years before and two years after the passage of the enforcement provisions. We include year effects, but our sample size of teen mothers is too small to identify state fixed effects. Instead, as shown later, we test the sensitivity of the results to the omission of all state-level variables. This omission provides a rough proxy for measuring the correlation between statutory rape laws and other state factors.

Equation (3) is the DDD model. For simplicity, subscripts are dropped.

$$(3) \quad \text{Prob}(Y = 1) = \frac{e^{W\gamma + SR\alpha + ENF\phi + SR*ENF\lambda + SR*POST96\delta + SR*ENF*POST96\pi + ENF*POST96\mu + POST96\tau + X\beta}}{1 + e^{W\gamma + SR\alpha + ENF\phi + SR*ENF\lambda + SR*POST96\delta + SR*ENF*POST96\pi + ENF*POST96\mu + POST96\tau + X\beta}}$$

$Y$ ,  $W$ ,  $SR$ , and  $X$  are defined as in equation (1).  $POST96$  is a dummy variable equal to one for the years after passage of PRWORA (1998 and 2000). The advantage of including observations from the pre-PRWORA period is that the observations can be used to control for differences between the states with the enforcement provisions and the states without, as well as for differences between the pre-PRWORA period and the post-PRWORA period. For example, the  $SR*POST96$  variable measures the effect of statutory rape laws, regardless of enforcement provisions, in the post-PRWORA period. The  $SR*ENF$  variable captures the effect of statutory rape laws in enforcing states, regardless of time period. In other words, the  $SR*ENF$  variable controls for potential differences in statutory rape laws that are due to the differences in the two groups of states themselves (states with enforcement provisions and those without) rather than due to the provision itself. The effect of enforcement of the law in the post-PRWORA period is captured by  $SR*ENF*POST96$ , the variable of greatest interest in equation (3).

The inclusion of so many interaction terms in equation (3) allows us to identify several distinct effects of statutory rape laws. At the same time, the model controls for several factors of states and time periods independently, such as the differences across time between enforcement and non-enforcement states ( $ENF*POST96$ ). The extensive controls provide an advantage over the less-extensive specifications of the general model and the enforcement model. However, identification of the DDD model requires sufficient variation across all three dimensions (statutory rape law coverage, time, and enforcement). As the results in the next section illustrate, our data may not have sufficient variation to precisely identify all these parameters.

#### *E. Predicted Signs of Coefficients*

State policy and control variables, as well as individual and family variables, are included in all the specifications. This section discusses the expected signs for these coefficients. Previous studies find small and usually insignificant effects of exposing teenagers to sex education classes on teenage birthrates (Oettinger, 1999; Hanson, Myers, and Ginsburg, 1987). The expected correlation between state abortion rates and teenage birthrates is negative; more abortions imply fewer births. The effect of parental consent and parental notification laws is unclear. They restrict teenagers' access to abortions, suggesting a positive correlation with teenage birthrates. On the other hand, if girls perceive the restrictions as reducing their options should they become pregnant, then the laws could reduce the number of teenage pregnancies and therefore births. Previous work finds generally insignificant effects of parental notification and involvement laws on teenage fertility (Blank, George, and London, 1996; Joyce and Kaestner, 1996). Wolfe, Wilson, and Haveman (2001) and Lundberg and Plotnick (1990) find a negative relationship between access to family planning and teenage childbearing, suggesting a negative coefficient for our measure of access to family planning.

Many researchers consider the decision of a teenager to bear a child to be a rational decision affected by the prices of having children. The AFDC variable measures the maximum Aid to Families with Dependent Children (AFDC) benefit for a family of four in each state and year. Because most AFDC recipients are single mothers, the expected relationship between AFDC benefit levels and nonmarital teen childbearing is positive, as AFDC benefits lower the cost of having a child.<sup>8</sup>

If a teenager lives in a state with high unemployment rates, the opportunity costs of lost wages are lower, thus reducing the costs of having a child. For these reasons, one would expect a positive relationship between the teenage unemployment rate and the probability of having a child. Conversely, if a teenager lives in a state with high per-capita income, the opportunity costs of lost wages are higher, and the expected relationship between per-capita income and the probability of having a child is negative. However, Clarke and Strauss (1998) and An, Haveman, and Wolfe (1993) find generally insignificant effects of local labor market conditions.

The variable for the percentage of state residents who are Catholic provides a control for religiosity. Plotnick (1992) finds that “occasional attendance at church” is positively and significantly associated with premarital pregnancy; for nonCatholics, church attendance is not a significant variable. Wolfe, Wilson, and Haveman (2001) find that the higher the percentage of state residents who belong to a religious organization, the lower the probability of teenage childbirths.

Because nonwhites have higher birthrates than whites (the category omitted in the regression), one would expect positive signs for the race/ethnicity variables (black, Hispanic, other). In order to isolate racial differences if they apply, separate logit specifications by race/ethnicity are also estimated, as in Lundberg and Plotnick (1995). Younger teenagers are

less likely to have a baby than older teenagers (girls aged 18 are the omitted dummy variable category), so the expected sign for the aged 15, 16, and 17 variables would be negative.

Lundberg and Plotnick (1995) find that young women who live in a home where a foreign language is spoken are less likely to become pregnant. Thus, the expected sign for the foreign born variable is negative.

If lower family income is associated with higher birthrates, as found by Wolfe, Wilson, and Haveman (2001), then one would expect a positive sign on each of the income variables because they are compared with the omitted category of the highest family income (greater than \$50,000 per year). Wolfe, Wilson, and Haveman (2001) also find that girls living in single-parent families are more likely to experience an out-of-wedlock birth than girls who live with both parents. The predicted sign for the variable that the girl lives with both parents would be negative.

#### IV. RESULTS

Table 1 contains descriptive statistics with respect to the statutory rape variables for the sample of 15 to 18 year-old women in the June CPS data (Appendix Table 1 contains descriptive statistics for the other independent variables). The data appendix contains a description of each variable. Note that the data set contains over 14,000 women. Nearly 75 percent of women in the overall sample are protected by a statutory rape law when an offender is aged 21 (or older), whereas only 25 percent are protected from an offender aged 16. There are few differences by race and ethnicity, except that black and Hispanic women (combined) are much more likely to live in states with enforcement provisions for offenders aged 21 or older (36.6 percent) than white women (21.0 percent).<sup>9</sup>

[INSERT TABLE 1 HERE]

5.4 percent of women in the sample had a live birth, but the percentage varies greatly by race/ethnicity and by year. In the CPS data, reported teenage childbearing increased for whites between the pre- and post-PRWORA periods. The rate for whites was 2.8 percent in 1994 and 1995 but rose to 4.5 percent in 1998 and 2000. For blacks and Hispanics, the reported birth rate declined modestly from 11.0 percent in the earlier time period to 10.6 percent in the later period. Nationally, the reported unmarried teen birth rate declined slightly throughout the 1990s (the decline was sharper for married teens). It is difficult to compare our birth rates to other studies, however, because many include births to 19-year olds as a part of “teenage” birthrate calculations (AGI, 1999). Because our study focuses on the effect of statutory rape laws, we limit our samples to women through aged 18, which lowers our birth rates in comparison to studies that include 19-year olds. For this reason, it is not surprising that our birth rates are lower than those reported in other studies.

A. *General Model*

The first model considers the effects of the existence of statutory rape laws. The results from the logit model specified in equation (1) are reported in Table 2. For the full sample (column 1), the variable that measures the effect of statutory rape laws, as defined for a 21-year old male offender, has the predicted negative sign but is statistically insignificant. However, the effect is negative and statistically significant (at the one-percent level) for white females, as shown in column 2. The marginal effect is equal to approximately one percentage point. The effect is large given that less than three percent of whites in our sample are teen mothers. In contrast, the effect of statutory rape laws is insignificant for blacks and Hispanics, as shown in column 3. These results suggest the possibility of strong effects of statutory rape laws for whites but not for blacks and Hispanics.

[INSERT TABLE 2 HERE]

None of the state policy variables is statistically significant for the overall sample. For the sample of whites (column 2), the only significant coefficient is the negative effect of family planning density. The general lack of significance, both in Table 2 and in the literature more generally, suggests that sex education laws, parental involvement laws for teenage abortions (consent or notification), family planning clinics, and AFDC benefits may not be effective policy tools to reduce the number of teenage childbirths.

The other state-level control variables also have small if any impacts on teenage childbearing. The effects vary by race and ethnicity, and none is significant for the overall sample. For whites, there is a small negative effect of per-capita income (significant only at a ten-percent level) and a small positive effect of percent Catholic. For blacks and Hispanics, the unemployment rate has a negative effect, counter to our expectations.

When considering the control variables for individual characteristics, blacks and Hispanics are more likely to give birth than whites, with marginal effects of roughly four percentage points (column 1), about half the raw differences in birthrates as compared to whites. In terms of age, 15 and 16-year old females have a statistically smaller likelihood of giving birth than 18-year olds (the omitted category). Young women who were born in foreign countries also are less likely to give birth. The effects are much larger for black and Hispanic females than for white females.

Family income and composition have significant effects for all race and ethnicities. Young women in the two lowest earnings categories are more likely to give birth than females whose families earn more than \$50,000 per year (the omitted category). The marginal effect is strongest for the lower income group (around five percentage points). Young women who live

with both parents are less likely to give birth than those from other family structures, and the effect is strongest for blacks and Hispanics.

We consider variations to the logit model described in equation (1) to test the robustness of the results. The first robustness test is the sensitivity of the results to the presence of other state-level variables. Specifically, the insignificance of the statutory rape variable in Table 2 may be the result of omitted variables bias from unmeasured state policies or demographics that are correlated with statutory rape laws. An indirect test of this hypothesis is to compare the results in Table 2 (which include state-level variables) with the results from an unreported specification that excludes all state-level variables except the statutory rape variables (individual and family variables are included in all specifications). The results are similar in the two specifications, although the coefficients for the statutory rape laws are slightly smaller in magnitude (i.e. closer to zero) when we exclude other state-level variables. The similarity suggests that the statutory rape coefficients are robust to the exclusion or inclusion of other state controls.

The unreported results from a probit model are quite similar in significance levels, signs, and marginal effects to the logit results presented in Table 2: large, negative effects for white females and insignificant effects (at a ten-percent level) for the black/Hispanic sample and the full sample. Thus, the results are not specific to the functional-form assumptions of the logit model.

Further, the definition of the statutory rape variable is varied to analyze the effect of protecting young women from offenders whose ages are younger than 21 (aged 16 to 20). Separate logit models are run for each age level of the potential offender, and Table 3 contains the results. For example, the row labeled “Offender Aged 16” contains the logit results when the

statutory rape variable is defined for a potential offender aged 16 or older. Because the focus is on the statutory rape policies, Table 3 reports only the coefficients and standard errors for the statutory rape variable.

[INSERT TABLE 3 HERE]

When the data are separated by race/ethnicity, the statutory rape variable is not significant for blacks/Hispanics under any specification. For whites, the statutory rape variable is negative and significant (at the five-percent level or one-percent level) in all specifications except ages 17 and 18. In fact, the effect for an aged 20 or older offender is so strong for whites that the coefficient for the overall sample is also negative and significant (at the five-percent level).

The final robustness check concerns the severity of the statutory rape laws. In the preceding analysis, the statutory rape law is defined only for felonies. In the results reported in the bottom half of Table 3, the statutory rape variable includes misdemeanors as well as felonies. The combined statutory rape variable, equal to one for a young woman protected by either a misdemeanor or felony statute, has a stronger effect than the felony only variable. A possible explanation is that people could be concerned about breaking a law, regardless of whether the violation is a felony or a misdemeanor. By including both felonies and misdemeanor laws, we create a measure that could affect more people. In the sample for all women (column 1), the coefficients for all specifications except ages 17 and 18 are slightly larger in magnitude than those in the top half of Table 3 and are significant at the ten-percent level. These results are not driven solely by the misdemeanor laws, as coefficients for statutory rape law variables defined as the existence of a misdemeanor statute (but not a felony) are generally insignificant.<sup>10</sup> (The results for misdemeanors are not reported.)

As previously found, the effect of statutory rape laws is strongest for young women who are white. For this sample, the statutory rape coefficient in Table 3 is negative and significant at the five-percent level for all statutory rape variables. In contrast, all the coefficients for the black/Hispanic sample are insignificant. The findings are consistent with the historic focus of statutory rape laws on protecting white women (Cocca, 2000). The results suggest that if the existence of statutory rape laws has any effect on teenage birthrates, the effects apply only to white females, not to black or Hispanic females.

*B. Enforcement Model*

The mere *existence* of statutory rape laws has a significant effect for whites but not for blacks and Hispanics. But does variation in the *enforcement* of these laws have any effect? Table 4 contains the results from the binary logit for the post-PRWORA reform period, as detailed in equation (2). As in earlier models, the *existence* of statutory rape laws reduces the probability that a white teenager gives birth, but we observe no effect for blacks and Hispanics. The *enforcement* of statutory rape laws dramatically reduces the probability that a teenage girl gives birth, both for the entire sample and also for blacks and Hispanics. The marginal effect is almost two percentage points for the overall sample and nearly eight percentage points for the black and Hispanic sample. For comparison, the percentage of teen births is 6.0 in the overall sample and 10.6 in the black and Hispanic sample.

[INSERT TABLE 4 HERE]

In contrast to the pre-PRWORA time period, the teen abortion rate is positively associated with teenage childbearing in column 1 of Table 4. However, the effect is trivial in size (marginal effect of less than one-half percent for a one-standard deviation change in the abortion rate). None of the other state policy or control variables has a significant impact on

fertility. With respect to the individual-level variables, the results in Table 4 are similar to those in Table 2 except that the coefficient for foreign-born is now insignificant in Table 4.

Several robustness tests are considered for this sample, just as they were considered for the pre-PRWORA sample. Table 5 contains several specifications, where the age of the potential offender varies from 16 or older to 21 or older. For each specification, the table only contains the coefficient for the enforcement of statutory rape laws. The top portion of the table reports the results when the definition of the statutory rape variable is limited to felonies, whereas in the bottom portion of the table the definition is expanded to include misdemeanors as well as felonies.

[INSERT TABLE 5 HERE]

The results in Table 5 are similar to those for the enforcement variable in Table 4. Enforcement has no discernable effect for whites, but it has a modest deterrent effect for blacks and Hispanics across all ages of the offender except aged 16.<sup>11</sup> These results, coupled with the results from the pre-PRWORA period, show that for white women, the existence of statutory rape laws is associated with lower probabilities of teen childbearing, but the enforcement of statutory rape laws has no effect. For black and Hispanic women, the findings are reversed: the existence of statutory rape laws has no effect, but the enforcement has deterrent effects. A potential explanation for these finding could be that whites were already aware of statutory rape laws, so that their existence reduces teen births, but enforcement has no effect. If blacks and Hispanics were unaware of statutory rape laws, we might observe no effect of their existence but a deterrent effect from enforcement. We suspect that many of the enforcement states also targeted awareness (as illustrated by the examples for California and Virginia mentioned above). Perhaps the awareness efforts targeted non-whites.

C. *Difference-in-Difference-in-Difference Model*

The third model combines all data into a single sample and estimates a difference-in-difference-in-difference (DDD) model. The goal of this specification is to isolate the impact of the enforcement of statutory rape laws in the post-PRWORA period from other impacts of statutory rape laws common to the post-PRWORA period, the set of states adopting enforcement provisions, or the presence of statutory rape laws.

Table 6 contains the results from the DDD model outlined in equation (3). As in earlier models, we continue to find a negative effect of the existence of statutory rape laws for white females. However, the coefficient for the variable of interest, SR\*ENFORCE\*POST1996, is imprecisely estimated due to large standard errors and therefore is insignificant for all specifications. The possibility of sizable impacts exists (positive or negative), however, for the enforcement of statutory rape laws in the post-1996 period.

[INSERT TABLE 6 HERE]

For blacks and Hispanics, all the statutory rape variables are insignificant. This finding suggests that the negative and significant effect of enforcement in Tables 5 and 6 may result from differences between enforcement states and other states, rather than a causal effect of statutory rape enforcements for blacks. However, the finding is merely suggestive, as the coefficients for statutory rape enforcement are imprecisely estimated. Teenage mothers are distributed over multiple states (with varying degrees of enforcement) and time periods, and the partitioning of the sample limits the ability of the DDD model to measure the impact of the statutory rape laws.

The coefficients for the other state-level variables are more precisely estimated, but they reveal few significant effects on the probability of a teenager giving birth, which is consistent

with other research on teenage fertility. Access to family planning and higher per-capita income are negatively associated with childbirth for whites, whereas none of the state-level variables is a significant determinant of childbirth for blacks and Hispanics.

Table 7 reports the results from robustness testing across ages of the offender for the DDD model. As in Table 5, the top portion of the table reports the results when the statutory rape variable is defined for felonies only, and the bottom portion of the table reports the results for both felonies and misdemeanors. The coefficients for statutory rape enforcement in the post-PRWORA are generally insignificant. We find a significant deterrent effect for blacks and Hispanics when the offender is aged 16 (bottom panel) or 17 (both panels), but we find a positive effect for whites when the offender is aged 17 (bottom panel). Thus, it is unclear whether the enforcement of statutory rape laws reduces teenage childbearing, although the possibility is much stronger for blacks and Hispanics than for whites.

[INSERT TABLE 7 HERE]

## V. CONCLUSIONS

The U.S. Supreme Court considers statutory rape laws to be a viable method to influence pregnancies and births by teenagers. Lawmakers must also believe these laws work because the 1996 welfare reform act included policies to increase the enforcement of statutory rape laws for many states as a way to curb teen pregnancies. This paper tests the hypothesis that if a teenager is protected by a statutory rape law, she is less likely to give birth out of wedlock.

The analysis relies on three types of specifications. The first, estimated for the time period prior to the 1996 welfare reform, considers the impact of the existence of statutory rape laws on teenage childbearing. In this specification, the effects of statutory rape laws vary by race/ethnicity. There is strong evidence that statutory rape laws are negatively correlated with

teen birthrates for white females but not for black and Hispanic females. The result is consistent with the history of U.S. statutory rape laws, which were originally designed to protect white females, particularly from the advances of nonwhite men.

The second specification investigates enforcement of statutory rape laws while holding constant the effect of the existence of the laws. The model uses the fact that ten states added enforcement provisions to their statutory rape laws in 1996 and 1997 in conjunction with welfare reform. The results for 1998 and 2000 CPS data show that the existence – but not the enforcement – of statutory rape laws is associated with lower teen birthrates for whites, whereas the enforcement is associated with lower teen childbearing for blacks and Hispanics. One explanation is that whites were aware of statutory rape laws and therefore were unaffected by changes in enforcement, whereas blacks and Hispanics were less aware and thus responded to changes in enforcement.

Finally, the third specification combines data from pre- and post-PRWORA time periods in a difference-in-difference-in-difference model. This technique allows for a more thorough set of controls on the statutory rape laws, but at the same time requires more extensive variation in the laws and in the dependent variable, teenage childbearing. The findings for the DDD specification again show deterrent effects of the *presence* of statutory rape laws for white females but insignificant effects of *enforcement* for all races and ethnicities.

The finding that statutory rape law enforcement dramatically reduces teen childbearing for blacks and Hispanics deserves further attention. In our DDD model, we are unable to determine whether this effect results from the enforcement of statutory rape laws or from differences between states that enforced statutory rape laws and other states. Further investigation with larger samples is needed to identify the source of the effect.

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[INSERT ENDNOTES HERE]

#### ABBREVIATIONS

AFDC: Aid to Families with Dependent Children

AGI: Alan Guttmacher Institute

CPS: Current Population Survey

DDD: Difference-in-Difference-in-Difference

PRWORA: Personal Responsibility and Work Opportunity Reconciliation Act

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**TABLE 1. DESCRIPTIVE STATISTICS FOR STATUTORY RAPE LAWS**

| Variable                        | Samples by Race/Ethnicity |         |        |         |                |         |
|---------------------------------|---------------------------|---------|--------|---------|----------------|---------|
|                                 | All                       |         | White  |         | Black/Hispanic |         |
|                                 | Mean                      | Std Dev | Mean   | Std Dev | Mean           | Std Dev |
| <b>All Years</b>                |                           |         |        |         |                |         |
| Teen mother                     | 0.054                     | 0.226   | 0.036  | 0.187   | 0.108          | 0.310   |
| Offender Aged 16                | 0.250                     | 0.433   | 0.247  | 0.431   | 0.275          | 0.447   |
| Offender Aged 17                | 0.304                     | 0.460   | 0.306  | 0.461   | 0.310          | 0.462   |
| Offender Aged 18                | 0.445                     | 0.497   | 0.449  | 0.497   | 0.442          | 0.497   |
| Offender Aged 19                | 0.580                     | 0.494   | 0.585  | 0.493   | 0.570          | 0.495   |
| Offender Aged 20                | 0.638                     | 0.481   | 0.640  | 0.480   | 0.638          | 0.481   |
| Offender Aged 21                | 0.739                     | 0.439   | 0.734  | 0.442   | 0.761          | 0.427   |
| Enforcement of Offender Aged 21 | 0.253                     | 0.435   | 0.210  | 0.407   | 0.366          | 0.482   |
| Observations                    | 14,547                    |         | 10,370 |         | 3,417          |         |
| <b>1994 and 1995</b>            |                           |         |        |         |                |         |
| Teen mother                     | 0.049                     | 0.216   | 0.028  | 0.166   | 0.110          | 0.313   |
| Offender Aged 16                | 0.246                     | 0.431   | 0.241  | 0.428   | 0.276          | 0.447   |
| Offender Aged 17                | 0.298                     | 0.458   | 0.296  | 0.457   | 0.316          | 0.465   |
| Offender Aged 18                | 0.442                     | 0.497   | 0.443  | 0.497   | 0.447          | 0.497   |
| Offender Aged 19                | 0.580                     | 0.494   | 0.585  | 0.493   | 0.573          | 0.495   |
| Offender Aged 20                | 0.640                     | 0.480   | 0.644  | 0.479   | 0.636          | 0.481   |
| Offender Aged 21                | 0.741                     | 0.438   | 0.738  | 0.440   | 0.753          | 0.432   |
| Enforcement of Offender Aged 21 | 0.244                     | 0.429   | 0.203  | 0.402   | 0.346          | 0.476   |
| Observations                    | 7,630                     |         | 5,437  |         | 1,796          |         |
| <b>1998 and 2000</b>            |                           |         |        |         |                |         |
| Teen mother                     | 0.060                     | 0.237   | 0.045  | 0.208   | 0.106          | 0.308   |
| Offender Aged 16                | 0.255                     | 0.436   | 0.254  | 0.435   | 0.275          | 0.446   |
| Offender Aged 17                | 0.310                     | 0.462   | 0.317  | 0.465   | 0.302          | 0.459   |
| Offender Aged 18                | 0.449                     | 0.497   | 0.454  | 0.498   | 0.438          | 0.496   |
| Offender Aged 19                | 0.579                     | 0.494   | 0.585  | 0.493   | 0.566          | 0.496   |
| Offender Aged 20                | 0.636                     | 0.481   | 0.636  | 0.481   | 0.640          | 0.480   |
| Offender Aged 21                | 0.738                     | 0.440   | 0.729  | 0.445   | 0.769          | 0.421   |
| Enforcement of Offender Aged 21 | 0.263                     | 0.440   | 0.217  | 0.412   | 0.389          | 0.488   |
| Observations                    | 6,917                     |         | 4,933  |         | 1,621          |         |

**TABLE 2. LOGIT RESULTS FOR NONMARITAL TEEN CHILDBEARING**

| Variable                                  | Samples by Race/Ethnicity |                      |                      |
|---|---------------------------|----------------------|----------------------|
|   | All                       | White                | Black/Hispanic       |
| <b>Statutory Rape Laws</b>                |                           |                      |                      |
| Offender Aged 21 (SR)                     | -0.136<br>(0.134)         | -0.548***<br>(0.193) | 0.181<br>(0.207)     |
| <b>State Policy and Control Variables</b> |                           |                      |                      |
| Sex Education Required                    | -0.051<br>(0.128)         | 0.250<br>(0.182)     | -0.314<br>(0.204)    |
| Teen Abortion Rate (per 1000)             | 0.000<br>(0.007)          | -0.008<br>(0.014)    | 0.007<br>(0.012)     |
| Abortion - Parental Involvement Law       | 0.076<br>(0.139)          | -0.079<br>(0.200)    | 0.267<br>(0.225)     |
| Family Planning Clinic Density            | -0.348<br>(0.452)         | -1.513**<br>(0.749)  | -0.213<br>(0.739)    |
| Maximum AFDC Benefit (00s)                | -0.019<br>(0.044)         | -0.048<br>(0.071)    | 0.025<br>(0.067)     |
| Per Capita Income (000s)                  | -0.038<br>(0.047)         | -0.119*<br>(0.067)   | -0.028<br>(0.083)    |
| Unemployment Rate                         | -0.022<br>(0.054)         | 0.104<br>(0.073)     | -0.262**<br>(0.111)  |
| Percent Catholic                          | 0.007<br>(0.006)          | 0.021**<br>(0.009)   | -0.001<br>(0.010)    |
| <b>Individual Controls</b>                |                           |                      |                      |
| Black                                     | 1.081***<br>(0.145)       |                      |                      |
| Hispanic                                  | 1.085***<br>(0.193)       |                      | 0.093<br>(0.217)     |
| Aged 15                                   | -1.783***<br>(0.213)      | -1.276***<br>(0.326) | -2.037***<br>(0.295) |
| Aged 16                                   | -1.300***<br>(0.181)      | -0.982***<br>(0.285) | -1.578***<br>(0.257) |
| Aged 17                                   | -0.205<br>(0.132)         | 0.125<br>(0.197)     | -0.473**<br>(0.191)  |
| Foreign Born                              | -0.665***<br>(0.240)      | 0.197<br>(0.532)     | -0.756**<br>(0.303)  |
| Family Income <15,000                     | 1.225***<br>(0.200)       | 1.594***<br>(0.278)  | 0.814***<br>(0.317)  |
| Family Income 15,000-30,000               | 0.443**<br>(0.208)        | 0.603**<br>(0.285)   | 0.109<br>(0.337)     |
| Family Income 30,000-50,000               | 0.239<br>(0.209)          | 0.424<br>(0.265)     | -0.009<br>(0.365)    |
| Lives with Both Parents                   | -0.485***<br>(0.134)      | -0.413**<br>(0.199)  | -0.457**<br>(0.195)  |
| Observations                              | 7,630                     | 5,437                | 1,796                |

*Notes:* Standard errors are in parenthesis. The logit regressions also include dummy variables for other race/ethnicity, observations in the 1994 CPS, and missing family income. Each column represents a separate logit regression model. \*\*\*, \*\*, \* Significant at the 0.01, 0.05, 0.10 levels, respectively.

*Source:* June 1994 and 1995 CPS.

**TABLE 3. LOGIT RESULTS FOR STATUTORY RAPE LAWS  
BY AGE OF POTENTIAL OFFENDER**

| Variable   | Samples by Race/Ethnicity |                      |                   |
|--|---------------------------|----------------------|-------------------|
|  | All                       | White                | Black/Hispanic    |
| <b>Felony Statutory Rape Laws</b>                |                           |                      |                   |
| Offender Aged 21                                 | -0.136<br>(0.134)         | -0.548***<br>(0.193) | 0.181<br>(0.207)  |
| Offender Aged 20                                 | -0.287**<br>(0.123)       | -0.768***<br>(0.192) | 0.034<br>(0.179)  |
| Offender Aged 19                                 | -0.198<br>(0.123)         | -0.683***<br>(0.195) | 0.140<br>(0.178)  |
| Offender Aged 18                                 | -0.053<br>(0.126)         | -0.244<br>(0.199)    | 0.022<br>(0.184)  |
| Offender Aged 17                                 | -0.137<br>(0.136)         | -0.351<br>(0.224)    | -0.017<br>(0.194) |
| Offender Aged 16                                 | -0.179<br>(0.143)         | -0.481**<br>(0.243)  | 0.027<br>(0.201)  |
| <b>Felony OR Misdemeanor Statutory Rape Laws</b> |                           |                      |                   |
| Offender Aged 21                                 | -0.225*<br>(0.134)        | -0.648***<br>(0.192) | 0.173<br>(0.206)  |
| Offender Aged 20                                 | -0.233*<br>(0.129)        | -0.674***<br>(0.188) | 0.212<br>(0.197)  |
| Offender Aged 19                                 | -0.221*<br>(0.125)        | -0.726***<br>(0.187) | 0.298<br>(0.190)  |
| Offender Aged 18                                 | -0.185<br>(0.123)         | -0.444**<br>(0.187)  | 0.046<br>(0.185)  |
| Offender Aged 17                                 | -0.177<br>(0.127)         | -0.398**<br>(0.201)  | 0.044<br>(0.184)  |
| Offender Aged 16                                 | -0.243*<br>(0.131)        | -0.563***<br>(0.212) | 0.066<br>(0.187)  |
| Observations                                     | 7,630                     | 5,437                | 1,796             |

*Notes:* Standard errors are in parenthesis. Each coefficient represents a separate logit regression model.  
\*\*\*, \*\*, \* Significant at the 0.01, 0.05, 0.10 levels, respectively.

*Source:* June 1994 and 1995 CPS.

**TABLE 4. LOGIT RESULTS FOR STATUTORY RAPE LAW ENFORCEMENT**

| Variable                                  | Samples by Race/Ethnicity |                      |                      |
|---|---------------------------|----------------------|----------------------|
|   | All                       | White                | Black/Hispanic       |
| <b>Statutory Rape Laws</b>                |                           |                      |                      |
| Offender Aged 21 (SR)                     | -0.121<br>(0.144)         | -0.429**<br>(0.192)  | 0.345<br>(0.257)     |
| SR*Enforce                                | -0.505*<br>(0.277)        | 0.043<br>(0.371)     | -1.161**<br>(0.464)  |
| <b>State Policy and Control Variables</b> |                           |                      |                      |
| Sex Education Required                    | -0.107<br>(0.124)         | -0.139<br>(0.160)    | -0.016<br>(0.229)    |
| Teen Abortion Rate (per 1000)             | 0.017**<br>(0.006)        | 0.022**<br>(0.010)   | 0.003<br>(0.012)     |
| Abortion - Parental Involvement Law       | 0.006<br>(0.135)          | -0.089<br>(0.174)    | 0.165<br>(0.264)     |
| Family Planning Clinic Density            | -0.060<br>(0.412)         | -0.506<br>(0.674)    | 0.345<br>(0.608)     |
| Maximum AFDC Benefit (00s)                | -0.030<br>(0.043)         | -0.027<br>(0.059)    | -0.010<br>(0.075)    |
| Per Capita Income (000s)                  | -0.059<br>(0.039)         | -0.059<br>(0.048)    | -0.007<br>(0.081)    |
| Unemployment Rate                         | -0.019<br>(0.071)         | -0.057<br>(0.090)    | 0.186<br>(0.166)     |
| Percent Catholic                          | 0.000<br>(0.006)          | 0.002<br>(0.008)     | -0.023*<br>(0.013)   |
| <b>Individual Controls</b>                |                           |                      |                      |
| Black                                     | 0.650***<br>(0.146)       |                      |                      |
| Hispanic                                  | 0.633***<br>(0.162)       |                      | 0.124<br>(0.219)     |
| Aged 15                                   | -1.317***<br>(0.186)      | -0.827***<br>(0.241) | -2.001***<br>(0.320) |
| Aged 16                                   | -0.541***<br>(0.150)      | -0.252<br>(0.200)    | -1.011***<br>(0.250) |
| Aged 17                                   | -0.230*<br>(0.132)        | -0.230<br>(0.183)    | -0.272<br>(0.207)    |
| Foreign Born                              | -0.203<br>(0.219)         | -0.512<br>(0.597)    | -0.114<br>(0.273)    |
| Family Income <15,000                     | 0.620***<br>(0.170)       | 0.661***<br>(0.242)  | 0.545*<br>(0.289)    |
| Family Income 15,000-30,000               | 0.177<br>(0.172)          | 0.348<br>(0.226)     | 0.096<br>(0.302)     |
| Family Income 30,000-50,000               | 0.116<br>(0.159)          | 0.162<br>(0.197)     | 0.073<br>(0.312)     |
| Lives with Both Parents                   | -0.455***<br>(0.118)      | -0.442***<br>(0.161) | -0.514***<br>(0.189) |
| Observations                              | 6,917                     | 4,933                | 1,621                |

*Notes:* Standard errors are in parenthesis. The logit regressions also include dummy variables for states that enforce statutory rape laws, other race/ethnicity, observations in the 1998 CPS, and missing family income. Each column represents a separate logit regression model. \*\*\*, \*\*, \* Significant at the 0.01, 0.05, 0.10 levels, respectively.

*Source:* June 1998 and 2000 CPS.

**TABLE 5. LOGIT RESULTS FOR ENFORCEMENT  
BY AGE OF POTENTIAL OFFENDER**

| Variable   | Samples by Race/Ethnicity |                   |                      |
|--|---------------------------|-------------------|----------------------|
|  | All                       | White             | Black/Hispanic       |
| <b>Enforcement of Felony Statutory Rape Laws (SR*Enforce)</b>                |                           |                   |                      |
| Offender Aged 21   | -0.505*<br>(0.277)        | 0.043<br>(0.371)  | -1.161**<br>(0.464)  |
| Offender Aged 20   | -0.448*<br>(0.255)        | -0.196<br>(0.345) | -0.741*<br>(0.415)   |
| Offender Aged 19   | -0.386<br>(0.240)         | 0.052<br>(0.333)  | -0.819**<br>(0.384)  |
| Offender Aged 18   | -0.306<br>(0.246)         | 0.143<br>(0.331)  | -0.757*<br>(0.408)   |
| Offender Aged 17   | -0.104<br>(0.274)         | 0.430<br>(0.359)  | -0.878*<br>(0.463)   |
| Offender Aged 16   | -0.085<br>(0.286)         | 0.385<br>(0.374)  | -0.649<br>(0.487)    |
| <b>Enforcement of Felony OR Misdemeanor Statutory Rape Laws (SR*Enforce)</b> |                           |                   |                      |
| Offender Aged 21   | -0.386<br>(0.279)         | 0.140<br>(0.372)  | -1.022*<br>(0.467)   |
| Offender Aged 20   | -0.387<br>(0.275)         | 0.056<br>(0.364)  | -0.884*<br>(0.465)   |
| Offender Aged 19   | -0.416<br>(0.273)         | 0.022<br>(0.359)  | -0.960**<br>(0.467)  |
| Offender Aged 18   | -0.291<br>(0.263)         | 0.376<br>(0.356)  | -1.160***<br>(0.433) |
| Offender Aged 17   | -0.319<br>(0.261)         | 0.517<br>(0.359)  | -1.461***<br>(0.421) |
| Offender Aged 16   | -0.311<br>(0.265)         | 0.392<br>(0.360)  | -1.249***<br>(0.433) |
| Observations   | 6,917                     | 4,933             | 1,621                |

*Notes:* Standard errors are in parenthesis. Each coefficient represents a separate logit regression model.  
\*\*\*, \*\*, \* Significant at the 0.01, 0.05, 0.10 levels, respectively.

*Source:* June 1998 and 2000 CPS.

**TABLE 6. DDD LOGIT RESULTS FOR STATUTORY RAPE LAW**

| Variable                                  | Samples by Race/Ethnicity |                      |                   |
|---|---------------------------|----------------------|-------------------|
|   | All                       | White                | Black/Hispanic    |
| <b>Statutory Rape Laws</b>                |                           |                      |                   |
| Offender Aged 21 (SR)                     | -0.158<br>(0.135)         | -0.620***<br>(0.191) | 0.226<br>(0.211)  |
| SR*Enforce                                | -0.129<br>(0.331)         | 0.114<br>(0.562)     | -0.309<br>(0.474) |
| SR*Post 1996                              | 0.146<br>(0.181)          | 0.302<br>(0.245)     | 0.085<br>(0.289)  |
| SR*Enforce*Post 1996                      | -0.388<br>(0.422)         | -0.072<br>(0.662)    | -0.646<br>(0.640) |
| <b>State Policy and Control Variables</b> |                           |                      |                   |
| Sex Education Required                    | -0.096<br>(0.089)         | -0.022<br>(0.120)    | -0.194<br>(0.151) |
| Teen Abortion Rate (per 1000)             | 0.006<br>(0.005)          | 0.006<br>(0.008)     | 0.007<br>(0.009)  |
| Abortion - Parental Involvement Law       | -0.026<br>(0.097)         | -0.132<br>(0.130)    | 0.162<br>(0.172)  |
| Family Planning Clinic Density            | -0.393<br>(0.303)         | -1.086**<br>(0.501)  | 0.101<br>(0.442)  |
| Maximum AFDC Benefit (00s)                | -0.031<br>(0.031)         | -0.050<br>(0.045)    | 0.008<br>(0.050)  |
| Per Capita Income (000s)                  | -0.051*<br>(0.030)        | -0.070*<br>(0.039)   | -0.042<br>(0.058) |
| Unemployment Rate                         | 0.012<br>(0.043)          | 0.057<br>(0.057)     | -0.097<br>(0.093) |
| Percent Catholic                          | 0.003<br>(0.004)          | 0.009<br>(0.006)     | -0.007<br>(0.008) |
| Observations                              | 14,547                    | 10,370               | 3,417             |

*Notes:* Standard errors are in parenthesis. The logit regressions also include the following variables: race/ethnicity, age, family income, foreign-born, living with both parents, missing family income, states that enforce statutory rape laws, observations in the 1998 and 2000 CPS (i.e., post-1996), and an interaction between enforcement and post-1996. Each column represents a separate logit regression model. \*\*\*, \*\*, \* Significant at the 0.01, 0.05, 0.10 levels, respectively.

*Source:* June 1994, 1996, 1998, and 2000 CPS.

**TABLE 7. DDD LOGIT RESULTS BY AGE OF POTENTIAL OFFENDER**

| Variable  | Sample by Race/Ethnicity |                   |                     |
|---|--------------------------|-------------------|---------------------|
|   | All                      | White             | Black/Hispanic      |
| <b>SR*Enforce*Post 1996 (Felony)</b>                |                          |                   |                     |
| Offender Aged 21                                    | -0.388<br>(0.422)        | -0.072<br>(0.662) | -0.646<br>(0.640)   |
| Offender Aged 20                                    | -0.511<br>(0.401)        | -0.248<br>(0.627) | -0.553<br>(0.603)   |
| Offender Aged 19                                    | -0.415<br>(0.366)        | -0.211<br>(0.608) | -0.505<br>(0.538)   |
| Offender Aged 18                                    | -0.437<br>(0.358)        | -0.272<br>(0.597) | -0.799<br>(0.534)   |
| Offender Aged 17                                    | -0.400<br>(0.372)        | 0.268<br>(0.628)  | -1.005*<br>(0.553)  |
| Offender Aged 16                                    | -0.446<br>(0.389)        | -0.105<br>(0.650) | -0.587<br>(0.581)   |
| <b>SR*Enforce*Post 1996 (Felony OR Misdemeanor)</b> |                          |                   |                     |
| Offender Aged 21                                    | -0.355<br>(0.423)        | -0.066<br>(0.664) | -0.538<br>(0.643)   |
| Offender Aged 20                                    | -0.223<br>(0.415)        | 0.109<br>(0.636)  | -0.279<br>(0.643)   |
| Offender Aged 19                                    | -0.203<br>(0.408)        | 0.225<br>(0.618)  | -0.277<br>(0.640)   |
| Offender Aged 18                                    | -0.212<br>(0.394)        | 0.655<br>(0.607)  | -1.025<br>(0.615)   |
| Offender Aged 17                                    | -0.226<br>(0.383)        | 1.029*<br>(0.608) | -1.363**<br>(0.592) |
| Offender Aged 16                                    | -0.283<br>(0.389)        | 0.732<br>(0.615)  | -1.056*<br>(0.602)  |
| Observations  | 14,547                   | 10,370            | 3,417               |

*Notes:* Standard errors are in parenthesis. Each coefficient represents a separate logit regression model.  
 \*\*\*, \*\*, \* Significant at the 0.01, 0.05, 0.10 levels, respectively.

*Source:* June 1994, 1996, 1998, and 2000 CPS.

**APPENDIX TABLE 1. DESCRIPTIVE STATISTICS**

| Variable                                  | All    |         | White  |         | Black/Hispanic |         |
|---|--------|---------|--------|---------|----------------|---------|
|   | Mean   | Std Dev | Mean   | Std Dev | Mean           | Std Dev |
| <b>All Years</b>                          |        |         |        |         |                |         |
| <b>State Policy and Control Variables</b> |        |         |        |         |                |         |
| Sex Education Required                    | 0.353  | 0.478   | 0.367  | 0.482   | 0.311          | 0.463   |
| Teen Abortion Rate (per 1000)             | 28.3   | 15.3    | 26.0   | 13.0    | 34.6           | 19.5    |
| Abortion - Parental Involvement           | 0.390  | 0.488   | 0.441  | 0.496   | 0.274          | 0.446   |
| Family Planning Clinic Density            | 0.261  | 0.173   | 0.268  | 0.168   | 0.242          | 0.184   |
| Maximum AFDC Benefit (00s)                | 4.83   | 1.75    | 4.82   | 1.66    | 4.61           | 1.87    |
| Per Capita Income (000s)                  | 24.1   | 3.5     | 23.8   | 3.4     | 24.6           | 3.8     |
| Unemployment Rate                         | 5.50   | 1.56    | 5.33   | 1.53    | 5.92           | 1.51    |
| Percent Catholic                          | 21.2   | 12.9    | 21.0   | 13.1    | 21.8           | 12.6    |
| <b>Individual Level Variables</b>         |        |         |        |         |                |         |
| White                                     | 0.713  | 0.452   | 1      | 0       | 0              | 0       |
| Black                                     | 0.134  | 0.340   | 0      | 0       | 0.569          | 0.495   |
| Hispanic                                  | 0.101  | 0.302   | 0      | 0       | 0.431          | 0.495   |
| Aged 15                                   | 0.262  | 0.440   | 0.263  | 0.440   | 0.259          | 0.438   |
| Aged 16                                   | 0.260  | 0.439   | 0.264  | 0.441   | 0.250          | 0.433   |
| Aged 17                                   | 0.248  | 0.432   | 0.245  | 0.430   | 0.259          | 0.438   |
| Aged 18                                   | 0.230  | 0.421   | 0.228  | 0.420   | 0.232          | 0.422   |
| Foreign Born                              | 0.067  | 0.250   | 0.021  | 0.144   | 0.146          | 0.353   |
| Family Income <15,000                     | 0.154  | 0.361   | 0.096  | 0.295   | 0.324          | 0.468   |
| Family Income 15,000-30,000               | 0.175  | 0.380   | 0.149  | 0.356   | 0.249          | 0.433   |
| Family Income 30,000-50,000               | 0.221  | 0.415   | 0.239  | 0.427   | 0.171          | 0.377   |
| Missing Family Income                     | 0.103  | 0.304   | 0.102  | 0.302   | 0.100          | 0.299   |
| Lives with Both Parents                   | 0.684  | 0.465   | 0.748  | 0.434   | 0.486          | 0.500   |
| Observations                              | 14,547 |         | 10,370 |         | 3,417          |         |

**APPENDIX TABLE 1 (CONTINUED). DESCRIPTIVE STATISTICS**

| Variable                                  | All   |         | White |         | Black/Hispanic |         |
|---|-------|---------|-------|---------|----------------|---------|
|   | Mean  | Std Dev | Mean  | Std Dev | Mean           | Std Dev |
| <b>1994 and 1995</b>                      |       |         |       |         |                |         |
| <b>State Policy and Control Variables</b> |       |         |       |         |                |         |
| Sex Education Required                    | 0.359 | 0.480   | 0.369 | 0.483   | 0.335          | 0.472   |
| Teen Abortion Rate (per 1000)             | 28.9  | 15.8    | 26.4  | 13.0    | 35.7           | 21.1    |
| Abortion - Parental Involvement           | 0.337 | 0.473   | 0.383 | 0.486   | 0.231          | 0.421   |
| Family Planning Clinic Density            | 0.253 | 0.167   | 0.259 | 0.163   | 0.235          | 0.171   |
| Maximum AFDC Benefit (00s)                | 5.02  | 1.83    | 5.01  | 1.71    | 4.77           | 1.96    |
| Per Capita Income (000s)                  | 23.0  | 3.2     | 22.8  | 3.0     | 23.5           | 3.6     |
| Unemployment Rate                         | 6.33  | 1.45    | 6.13  | 1.44    | 6.86           | 1.26    |
| Percent Catholic                          | 21.5  | 13.4    | 21.3  | 13.5    | 21.7           | 13.2    |
| <b>Individual Level Variables</b>         |       |         |       |         |                |         |
| White                                     | 0.713 | 0.453   | 1     | 0       | 0              | 0       |
| Black                                     | 0.145 | 0.353   | 0     | 0       | 0.618          | 0.486   |
| Hispanic                                  | 0.090 | 0.286   | 0     | 0       | 0.382          | 0.486   |
| Aged 15                                   | 0.264 | 0.441   | 0.269 | 0.444   | 0.250          | 0.433   |
| Aged 16                                   | 0.263 | 0.440   | 0.267 | 0.442   | 0.252          | 0.434   |
| Aged 17                                   | 0.244 | 0.430   | 0.240 | 0.427   | 0.258          | 0.438   |
| Aged 18                                   | 0.229 | 0.421   | 0.224 | 0.417   | 0.239          | 0.427   |
| Foreign Born                              | 0.070 | 0.256   | 0.022 | 0.147   | 0.148          | 0.355   |
| Family Income <15,000                     | 0.187 | 0.390   | 0.115 | 0.319   | 0.391          | 0.488   |
| Family Income 15,000-30,000               | 0.194 | 0.396   | 0.171 | 0.377   | 0.257          | 0.437   |
| Family Income 30,000-50,000               | 0.234 | 0.424   | 0.263 | 0.440   | 0.157          | 0.364   |
| Missing Family Income                     | 0.083 | 0.276   | 0.086 | 0.281   | 0.066          | 0.249   |
| Lives with Both Parents                   | 0.679 | 0.467   | 0.750 | 0.433   | 0.462          | 0.499   |
| Observations                              | 7,630 |         | 5,437 |         | 1,796          |         |

**APPENDIX TABLE 1 (CONTINUED). DESCRIPTIVE STATISTICS**

| Variable                                  | All   |         | White |         | Black/Hispanic |         |
|---|-------|---------|-------|---------|----------------|---------|
|   | Mean  | Std Dev | Mean  | Std Dev | Mean           | Std Dev |
| <b>1998 and 2000</b>                      |       |         |       |         |                |         |
| <b>State Policy and Control Variables</b> |       |         |       |         |                |         |
| Sex Education Required                    | 0.346 | 0.476   | 0.364 | 0.481   | 0.284          | 0.451   |
| Teen Abortion Rate (per 1000)             | 27.7  | 14.6    | 25.6  | 12.9    | 33.4           | 17.5    |
| Abortion - Parental Involvement           | 0.447 | 0.497   | 0.504 | 0.500   | 0.323          | 0.468   |
| Family Planning Clinic Density            | 0.269 | 0.179   | 0.277 | 0.172   | 0.249          | 0.197   |
| Maximum AFDC Benefit (00s)                | 4.62  | 1.64    | 4.61  | 1.57    | 4.43           | 1.76    |
| Per Capita Income (000s)                  | 25.2  | 3.5     | 25.0  | 3.4     | 25.8           | 3.6     |
| Unemployment Rate                         | 4.58  | 1.08    | 4.46  | 1.09    | 4.87           | 0.98    |
| Percent Catholic                          | 20.9  | 12.4    | 20.6  | 12.5    | 21.9           | 11.9    |
| <b>Individual Level Variables</b>         |       |         |       |         |                |         |
| White                                     | 0.713 | 0.452   | 1     | 0       | 0              | 0       |
| Black                                     | 0.121 | 0.326   | 0     | 0       | 0.515          | 0.500   |
| Hispanic                                  | 0.114 | 0.317   | 0     | 0       | 0.485          | 0.500   |
| Aged 15                                   | 0.260 | 0.439   | 0.257 | 0.437   | 0.268          | 0.443   |
| Aged 16                                   | 0.257 | 0.437   | 0.260 | 0.439   | 0.248          | 0.432   |
| Aged 17                                   | 0.252 | 0.434   | 0.250 | 0.433   | 0.259          | 0.438   |
| Aged 18                                   | 0.231 | 0.421   | 0.233 | 0.423   | 0.225          | 0.417   |
| Foreign Born                              | 0.063 | 0.243   | 0.020 | 0.141   | 0.145          | 0.352   |
| Family Income <15,000                     | 0.118 | 0.323   | 0.076 | 0.264   | 0.249          | 0.433   |
| Family Income 15,000-30,000               | 0.154 | 0.361   | 0.125 | 0.331   | 0.241          | 0.428   |
| Family Income 30,000-50,000               | 0.206 | 0.405   | 0.213 | 0.410   | 0.187          | 0.390   |
| Missing Family Income                     | 0.124 | 0.330   | 0.119 | 0.323   | 0.136          | 0.343   |
| Lives with Both Parents                   | 0.690 | 0.462   | 0.746 | 0.435   | 0.511          | 0.500   |
| Observations                              | 6,917 |         | 4,933 |         | 1,621          |         |

## DATA APPENDIX

### Statutory Rape Law Variables

*Offender Aged 21:* A dummy variable equal to one if the young woman is protected by her state's statutory rape law from a 21-year old offender (and zero otherwise). Posner and Silbaugh 1996.

*Enforcement:* A dummy variable equal to one for states that amended statutory rape laws "to target males whose female partners became pregnant" (Cocca, 2000, p.59) (and zero otherwise).

### State Policy Variables

*Sex Education Required:* A dummy variable equal to one if the state in which the young woman lives requires that public schools offer sexuality education instruction (and zero otherwise).

AGI, 2002a.

*Teen Abortion Rate per 1,000:* Abortions per 1,000 females aged 15 to 19. Urban Institute, Assessing the New Federalism State Database (original source: AGI, 1999).

*Abortion Restriction—Parental Involvement:* A dummy variable equal to one if the young woman lives in a state that requires parental consent or notification before a minor can obtain an abortion (and zero otherwise). Sources are AGI, 2002b; Greenberger and Connor, 1991; Sollom, 1995; and Sollom, 1997.

*Family Planning Clinic Density:* The number of publicly-funded family planning clinics per 1,000 women in need of contraception (defined as women aged 13-44 who are sexually active and able to get pregnant but not trying to get pregnant). The Alan Guttmacher Institute, special tabulations of 1997 census.

*Maximum AFDC Benefit:* The state's maximum AFDC plus Food Stamp payment for a family of four in the year before the survey, in 100s of 1996 dollars (deflated by Personal Consumption

Expenditure (PCE)). Database maintained by Professor Robert Moffitt (Johns Hopkins University), [http://www.econ.jhu.edu/people/moffitt/ben\\_data.txt](http://www.econ.jhu.edu/people/moffitt/ben_data.txt), accessed October 25, 2002.

### **State Control Variables**

*Per Capita Income*: The state's per-capita income (in thousands) in the year before the survey (ex: 1993 for June 1994 CPS), in 1996 dollars (deflated by PCE). Bureau of Economic Analysis.

*Unemployment Rate*: The state's unemployment rate for the total state population in the year before the survey (ex: 1993 for June 1994 CPS). Bureau of Labor Statistics.

*Percent Catholic*: The percent of the state's population that are members of the Catholic Church in 1990. Survey of Church and Church Membership.

### **Individual and Family Characteristics**

*Race/Ethnicity*: Dummy variables equal to one if the young woman's race is white, black, Hispanic, or other, respectively (and zero otherwise). White is the omitted category. CPS data.

*Household Income*: Dummy variables equal to one if the household income is less than \$15,000; \$15,000-\$29,999; \$30,000-\$50,000; or more than \$50,000; respectively (and zero otherwise). The last category is the omitted one. CPS data.

*Age*: Dummy variables equal to one if the young woman is aged 15, 16, 17, or 18, respectively (and zero otherwise). Aged 18 is the omitted category. CPS data.

*Lives with Both Parents*: A dummy variable equal to one if the young woman lives with both parents at the time of the survey (and zero otherwise). CPS data.

*Foreign born*: A dummy variable equal to one if the young woman was not born in the United States (and zero otherwise). CPS data.

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<sup>1</sup> For simplicity, we abbreviate “nonmarital teenage childbearing” to “teenage childbearing” throughout the paper. Our focus, as well as that of the majority of the literature, is on nonmarital teenage fertility.

<sup>2</sup> Grogger and Bronars (1993) find negative effects for black mothers but insignificant effects for white mothers.

<sup>3</sup> Although most states now have gender-neutral statutory rape laws, this paper focuses on the situation where the offender is a male and the victim is a female.

<sup>4</sup> We also estimate models that include interactions between the statutory rape law variable and the age-mistake defense provision, but the interaction effects are very imprecisely estimated.

<sup>5</sup> As mentioned previously, we also estimate alternate specifications based on offenders of ages 16 to 20.

<sup>6</sup> McCullough and Vinod (2003) suggest obtaining multiple estimates when using a non-linear function.

<sup>7</sup> The ten states are California, Delaware, Florida, Idaho, Tennessee, Connecticut, Pennsylvania, Texas, Virginia, and Wisconsin. The first five states enacted enforcement provisions in 1996; the last five did so in 1997.

<sup>8</sup> Although Clarke and Strauss (1998) and Rosenzweig (1999) find positive effects of AFDC, Wolfe, Wilson, and Haveman (2001) and Argys, Averett and Rees (2000) find insignificant effects.

<sup>9</sup> Blacks and Hispanics are combined into one group because the sample sizes for blacks and Hispanics are too small to consider separately.

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<sup>10</sup> The exception is a negative and significant (at a five-percent level) coefficient of misdemeanors only for aged 18, where the overall effect (misdemeanor or felony) is insignificant.

<sup>11</sup> Although not shown in the table, the coefficients for the existence of a statutory rape law are often significant and negative for white females but insignificant and positive for blacks and Hispanics (except for aged 17, where the positive effect is significant).