Do Statutory Rape Laws Work?

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May 2010

Abstract

We exploit the differences in the laws among states and over time to examine whether the laws restricting the number of legal sexual partners delays the sexual debut of both males and females. We find that the laws are successful in accomplishing these goals. Overall, an additional one year of potential partners leads to about a 2.9% increase in the probability of sexual debut at any age for males and 2.3% for females, controlling for state-age heterogeneity. The cumulative effect disguises substantial differences in the deterrence effects on males and females of different races.

JEL Classification: *K14, K42*

Keywords: Statutory rape, criminal law, sexual debut.

We thank participants at the 2009 Midwest Economic Association Annual Meetings and the 2009 Southern Economic Association Annual Meetings for their helpful feedback. Errors remain our own.

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1. Introduction

Every state has laws which prohibit sexual activity with individuals under a certain age. The laws generally apply a strict liability standard. Originally, the laws were justified under the auspice of protecting young women from "predatory" older males. More recently, the laws are justified to diminish the incidence of teen pregnancy. However, the enforcement of the laws is sporadic. Frequently, stories of enforcement can make national news, particularly if there are extenuating circumstances.[1] Critics maintain that prosecutorial discretion is applied in a haphazard way, and can be based on factors such as race.[2] But often lost in the debate as to the justice of the laws is whether the laws successfully prevent or diminish teenage sexual activity. Here we focus on one key aspect of that question – Do stricter statutory rape laws delay the sexual debut of teenagers? The answer to this question has significant public policy implications for promoting social efficiency and social justice.

Using data from both the 1970's and the 1990's, we employ a hazard model to assess the effect that a more restrictive law (limiting the number of potential legal sexual partners) has on the probability that a teenager will lose his or her virginity at a certain age, conditional on being a virgin when obtaining that age. This makes two contributions. The first contribution is the way that we operationalize the legal regimes. We transform each states' statutory rape laws into explanatory variables by considering the number of age cohorts with whom the individual may legally have sexual relations. This "Potential Partners" variable reflects the opportunity for legal sexual intercourse, with more permissive states having a higher value. Therefore, we can examine the marginal effects of having less restrictive laws. For instance, the law in Ohio was changed in 1972 to add a four-year age span provision.[3] Therefore, a person who was 14 in 1971 would have 0 potential partners; a person who was 14 in 1973 would have 5 years worth of age cohorts as potential partners.[4] A 16-year-old would be in

[1]The recent cases of Mary Kay Letourneau and Debra Lefave are but two examples where the teacher-student relation was the extenuating circumstances.

[2]For instance, the case of Genarlow Wilson, which was featured in national publications and "Outside the Lines" on ESPN. See, ABCNews (2006)

[3]Currently, the law states, "It is a felony for a person eighteen or older to knowingly engage in sexual conduct with a person at least thirteen but not yet sixteen if the offender is at least four years older than the victim." The old law just set the minimum age of 16. A summary of the laws of the several states, including the years that changes were made within our sample is found in Table 2.

[4]They could legally have sexual relations with a 14, 15, 16, 17, or 18-year-old partner.

a completely unrestricted state in either year. The second contribution is that it is to date the first paper to empirically test whether statutory rape laws have the intended effect of discouraging sexual behavior among adolescents. Because each state has laws which vary by the age of an individual in that state, and because of changes in these age limits during both the 1970s and the 1990s, we combine the NLYS79 with the NLSY97 and estimate a hazard model for the risk of making a sexual debut at each age controlling for state-age fixed effects. Our fixed effects model is therefore able to soak up any unique heterogeneity at the state-age level by exploiting a series of legislative amendments made to the laws.

We find that more restrictive laws do make sexual debut less likely. For every additional year of potential legal partners, the probability of a female making her sexual debut goes up by 9%; for males, the probability increase by 8%. The effects of the laws are virtually identical in both decades considered. Separately, we test the form the law takes (strict ban or only some restriction) and find that the form of the law has little effect on the efficacy in delaying sexual debut. We find significant differences in the effect of more restrictive laws on sub-groups. For instance, Black males show no behavioral change in response to stricter laws, and the effects are stronger for White females than Black females. When state-age fixed effects are employed, which maximizes the identification in terms of changes in the laws themselves, these effects are diminished, but persist across many of the sub-groups and the sample as a whole. An increase of one additional year of potential partners increase the likelihood of sexual debut at any age by 2.9% for males and 2.3% for females. Therefore, we conclude that states can delay the onset of sexual activity by teens through more restrictive laws (even absent changes in enforcement).

For purposes of this paper, we consider only the prohibition against sexual intercourse for unmarried people under a certain age (ignoring the laws pertaining to other forms of sexual contact). We consider only crimes that are felonies, and ignore prohibitions that are only misdemeanors. The laws have existed in every state since the founding of the union. Originally, the age of consent was usually set at ten years old and were gender specific, because the purpose of the laws were to protect the chastity of young women. Typically, statutory rape laws are strict liability, and therefore, it doesn't matter if the activity was consensual. Cocca (2004) identifies three stages of reform of the laws. The first reforms took

place in the 1890's and usually resulted in the raising of the age of consent in most states. The second wave of reforms occurred in the 1970's. As part of the women's liberation movement and the changing views of sex roles in society, the idea that women were not free to choose their own sexuality fell out of vogue. Many states began to institute "age span" provisions in their laws.[5] Under these laws, young women would be able to choose whether they wanted to engage in sexual intercourse, but would still be protected from older males who may be able to exert undue influence over them. Additionally, many states began to adopt gender neutral language.[6] The third stage of reform occurred in the 1990's and was prompted by the public movement to reform welfare. The perceived problem with welfare was the idea that many people on welfare rolls were there because of the rise in unwed pregnancies by adolescent mothers. As part of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, states were given incentives to reduce their welfare rolls. Many states looked to stricter enforcement of their statutory rape provisions as a means to achieving that end. Therefore, states invested much more in enforcement and education programs.

Most of the research on statutory rape laws has focused on this third wave of reforms, i.e., the connection between statutory rape laws and stemming the rise in teenage pregnancy. Unfortunately for the policy makers, most of the research finds that the laws have little effect on the teens who are getting pregnant. First, the basis for the change in strategy has been called into question. Advocates of using statutory rape laws as part of welfare reform cite studies such as Landry and Forrest (1995), who found that of babies born in 1988, "half of the fathers of babies born to women aged 15-17 were 20 years of age or older."[7] This study and others caused the view of teen mothers to be changed from girls who were "promiscuous and irresponsible" to girls who were "being exploited by much older 'predatory males' and...pregnancies were less a product of free will than the sad result of

[5]Between 1971 and 1979, Oregon, Ohio, Montana, Texas, Kentucky, Minnesota, Virginia, Arkansas, Colorado, Maine, New Mexico, Iowa, Maryland, West Virginia, Alabama, Louisiana, Nebraska, Nevada, North Dakota, New Jersey, and Rhode Island all adopted such provisions, ranging from two to five years. Today, 35 of 50 states have some form of age span provision.

[6]Nonetheless, in the case of *Michael M. v. Superior Court of Sonoma County*, 450 U.S. 464 (1981), the Supreme Court found that gender-biased laws did not violate the Equal Protection Clause of the Constitution. The Court said because males could not get pregnant, the laws were needed to "'equalize' the deterrents on the sexes."

[7]A later study, Sutherland (2003), notes that 42% of defendants in statutory rape cases in California in 1999 were age twenty or older.

criminal victimization."[8] However, Elo, King, and Furstenberg Jr. (1999) find that between 1960 and the 1990's, proportionally fewer children of teenage mothers had adult fathers. Rather, it was more teenage males fathering children with teenage moms.[9] Further, over their entire sample, approximately 85% of the children had fathers in their teens or early 20s, with many men only 2-3 years older than the mother. Thus, a law with a 16 year old age of consent and a 4 year age span would have only outlawed the sexual intercourse leading to 8% of the births to teenage mothers in 1988. Finally, they find that the age difference between the partners only has a small effect on whether the female feels the sexual activity was voluntary or not. Girls who had intercourse with a male between 0 and 3 years older reported that it was not voluntary (but not rising to the level of forcible rape) 6% of the time; if the male was 4 or more years older, the intercourse was not voluntary 13% of the time. However, younger women rated how much they wanted the experience lower on average than women in their late teens or twenties.

Second, opponents argue that because so much sexual activity may be implicated by the laws (not necessarily leading to pregnancy), the legal system can not bear so many cases. Therefore, the laws are useful only as a means for malicious prosecution that can be applied in a discriminatory way. For instance, Richard Delgado argues that the laws are applied more often when the victim is from a "good home" or when the man is a minority.[10]. Additionally, Sutherland (2003) finds that all 32 of the males featured on the California Alliance for Statutory Rape Enforcement most-wanted list were either Hispanic or Black.

Finally, opponents of using statutory rape laws to prevent teen pregnancy, thereby reducing welfare rolls, argue that this theory is misguided because it doesn't help the girls that actually become pregnant.[11] Conversely, the laws will prevent the fathers from earning a living with which to provide child support, even in instances where the couple intended to get married.[12] Given the stated purpose of the increased enforcement efforts, the increased

[8]Oliveri (2000)

[9]Whether this trend was a reflection of the age span provisions that began being enacted in the 1970's is another interesting research question.

[10]See Oberman and Delgado (1996)

[11]See, e.g., Oliveri (2000).

[12]The case of *State v. Gillson*, 587 N.W.2d 214 (Wis. App. 1998) is one such case. Even a marriage between the date of the incidence and the trial may not remove guilt. See the case of Jamie Winkler cited in Sutherland (2003). Interestingly, Orange County California encouraged court-authorized marriage as a way of preventing prosecution for two years before public outcry stopped the practice.

enforcement likely falls most on low-income teenagers.

An interesting issue that arises in this context is how aware people are of the laws that they may be violating by engaging in sexual intercourse. The education campaigns that emerged in many states after the passing of PRWORA were designed to alleviate that problem. However, Sutherland (2003) makes a compelling case that these campaigns may have been unnecessary. She cites evidence such as the use of the slang term "jailbait", popular music and television, and the publicity surrounding many high-profile cases to make this point. To this list we can also add recent phenomena such as the internet countdown clock until the Olson twins reached age of maturity,[13] and the commentary surrounding high-profile pregnancies such as Jamie Lynn Spears and Bristol Palin to support the idea that these laws are very much in the consciousness of the general public. Even if the laws are known, it is debatable whether the choice to engage in sexual activity is a rational choice by the teen.[14]

There has been no direct statistical analysis of the effect of statutory rape laws on the age of sexual debut. The closest paper within the economics literature is Oettinger (1999), who looks at the effect of sex education on teenage sexual activity, and also uses a hazard model analysis. There may be some overlap with this study due to the potential correlation between sex education spending and the strictness of the laws regarding statutory rape. However, as Cocca (2004) points out, there is little explanation for the differences among the laws of the various states. In particular, the laws don't seem to be reflective of the sexual activity of the teens within the particular state.[15] This alleviates some of the concern of endogeneity of the data. Ku, Sonenstein, and Pleck (1993) examine the factors that affect the sexual debut of males using a hazard model. They find that race, whether they had been held back in school, whether their mother was teenager when they were born, and whether their mother was employed influenced the age of their sexual debut. They did not, however, consider the legal regime.

[13]This website (www.jailbaitwait.com) has now been changed to track numerous underage celebrities.

[14]Loewenstein and Furstenberg (1991).

[15]For instance, Hawaii has the most permissive laws in the country, but ranks 12th in pregnancy rate among 15-19 year old women. Guttmacher Institute (2006)

2. The Model

Modeling the effect that the statutory rape laws may have on teenage sexual debut is largely an exercise in futility. The economics literature generally favors an approach to modeling teenage sexual behavior as an utility maximization problem. In such a model, perceived risks of contracting a sexually transmitted disease or getting pregnant could be imposed as expected costs to be balanced with the perceived benefits of increased happiness, retaining an existing relationship, an increase in social standing, etc. For instance, Leibowitz, Eisen, and Chow (1986) use such a model to study the factors that predict teenage pregnancy; Akerlof, Yellen, and Katz (1996) use this method to explain the increase in unwed mothers; Oettinger (1999) imposes such a model to examine the effects of education; and Klick, Neelsen, and Stratmann (2009) use such an approach to examine the effect of changes in abortion laws on risky sexual behavior. If we were to take a similar approach, the risk that a potential mate may be imprisoned could be accounted for within utility function of the decision makers (presumably, lowering utility of both parties), and therefore examined. However, the question as to the rationality of teenage decision making has been questioned. Loewenstein and Furstenberg (1991) contains an excellent discussion of this debate and find that some factors can predict sexual behavior, but the effects of some variables is disproportionate to their real costs.

Alternatively, it may make sense to model the effect of statutory rape laws on teenagers' sexual debuts in the context of a search cost model. Assuming that stricter laws prevent matching between individuals of different ages, it would raise the cost of matching (or similarly, requires more searching before a successful match is found). The implication of such a model is that sexual debut is (on average) delayed. The effect should be the same on both males and females.

The search model approach is incomplete in the sense that it ignores the actual interaction between the parties. For instance, it could be the case that more restrictive laws don't affect the actually coupling of individuals, but alter the bargaining power of the individuals. A more complex model may change the incidence of condom usage to prevent detection of illegal activity. This would have no effect on the age of debut, or could lead to earlier debut if one party would agree to sexual activity only if a condom (or other prophylactic)

is employed. Or a more restrictive law could delay debut by removing the undue pressure that older males could exert on younger females (under the classic reasoning for statutory rape laws) that they are coupled with. Furthermore, if it is assumed that more restrictive laws prevent coupling between parties of different ages, it would remove competition from younger individuals. Under such a model, more restrictive laws could actually reduce the age of debut for males because the younger males don't need to compete with older males for a female's affections. The implications for the age of debut for females is unclear. If younger females engage in sexual activity in order to prolong relationships, a more restrictive law that removes competition with older females would tend to increase the age of debut. If the decision to engage in sexual activity is a rational choice, there would be no change in age of debut. Furthermore, since younger males are generally viewed as having less knowledge of safe sex practices, such a model could actually predict increased contraction of sexually transmitted diseases or increases in teen pregnancy rates.

One final approach would be to employ a model of two-sided matching adapted from Roth and Sotomayor (1990). As will be shown, the implications of this model are highly susceptible to the assumptions made, rendering no clear predictions for the effects of more restrictive laws on the age of sexual debut for either the males or females. Let m_i be a male who is i years old with $i \in [14, 17]$, and w_j be a female who is j years old with $j \in [14, 17]$. Let P(.) be the preference rankings for each individual. Following (perhaps anachronistic) conventional wisdom, we assume that all males prefer younger women, and that all women prefer older men. Table 1 (all tables appear in the Appendix), which contains data on the age of people's most recent sex partner, offers some evidence to back up this assumption.[16] Additionally, we assume that once a stable match has been made, sexual intercourse will occur. Thus, we have the following preferences:

$$\begin{array}{lcllcl} m_{17} & = & P(w_{14}, w_{15}, w_{16}, w_{17}) & w_{17} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \\ m_{16} & = & P(w_{14}, w_{15}, w_{16}) & w_{16} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \\ m_{15} & = & P(w_{14}, w_{15}) & w_{15} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \\ m_{14} & = & P(w_{14}) & w_{14} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \end{array}$$

Consider first the matching that would occur absent any statutory rape law. Using the

[16] This assumption can additionally be justified by the fact that we are only looking at a small subset of the population who would engage in relationships with individuals from different age groups. Researchers have found common characteristics for both the men and young girls who engage in these types of relationships (see Elstein and Davis (1997) for a discussion).

deferred acceptance algorithm and allowing men to choose first (another social convention), it is straight-forward to find the M-optimal stable matching as:

$$\begin{array}{rcccccccc} \mu = & m_{17} & & m_{16} & & m_{15} & & m_{14} & \\ & w_{14} & & w_{15} & & & & w_{17} & w_{16} \end{array}$$

This means that the 17 year old male is matched with the 14 year old female, the 16 year old male is matched with the 15 year old female, and the rest are unmatched.

Now consider if it was enacted that the legal age of consent was 16, provided that the law will not be enforced when both parties are underage (rather than both being convicted).[17] Such a law would not affect the preferences of the women at all, since the laws are usually not enforced against women.[18] However, assuming that the males fear conviction, the preferences of the males will change to reflect that. We are left with the following preferences:

$$\begin{array}{rclrcl} m_{17} & = & P(w_{16}, w_{17}) & w_{17} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \\ m_{16} & = & P(w_{16}) & w_{16} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \\ m_{15} & = & P(w_{14}, w_{15}) & w_{15} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \\ m_{14} & = & P(w_{14}) & w_{14} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \end{array}$$

Now the M-optimal stable matching is:

$$\begin{array}{rcccccccc} \mu = & m_{17} & & m_{15} & & m_{16} & & m_{14} & \\ & w_{16} & & w_{14} & & & & w_{17} & w_{15} \end{array}$$

The law has had a small effect on the age of debut for females (16 and 14, rather than 15 and 14), but not as large as the intended effect (preventing all sexual activity by women younger than 16). This occurs because the 16 year old male is removed from competition with the 15 year old, allowing the 15 year old to obtain a match. Note that the average age of male debut is actually decreased by the imposition of the law. Both the 14 and 15 year old females are made worse off; the first because she has a less preferred match and the later because she has no match. However, if we further assume that young women only submit to sexual activity because an older man is more persuasive than a younger man in coaxing them into sex, then the shifting of the matching may prevent the debut of all females below age 16.

Consider another possible formulation of the law. Assume that the law states that the

[17] Whether both parties can be charged depends on the state. Florida found that such a prosecution was unconstitutional because it violated the privacy rights of minors in *B.B. v. Florida*, 659 So. 2d 256 (Fla. 1995). However, Arizona decided things differently in *Gammons v. Berlat*, 696 P.2d 700 (Ariz. 1985). Other laws may still make such activity illegal, although with lower penalties.

[18] The notable exceptions to this rule is in cases where there was some sort of dominate relationship between the parties, such as teacher-student.

age of consent is 17, but allows for a 1 year age span. Then preferences become:

$$\begin{array}{lllllll} m_{17} & = & P(w_{16}, w_{17}) & w_{17} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \\ m_{16} & = & P(w_{15}, w_{16}) & w_{16} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \\ m_{15} & = & P(w_{14}, w_{15}) & w_{15} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \\ m_{14} & = & P(w_{14}) & w_{14} & = & P(m_{17}, m_{16}, m_{15}, m_{14}) \end{array}$$

Given these preferences, the M-optimal stable match is:

$$\mu = \begin{array}{cccccc} m_{17} & m_{16} & m_{15} & m_{14} & & \\ w_{16} & w_{15} & w_{14} & & w_{17} & \end{array}$$

This law actually exacerbates the problem that it was intended to solve. Not only does the law not prevent any matching with younger females, it actually increases the incidence. Thus, it is at least theoretically possible that the imposition of a law will increase the probability of debut at an earlier age, even as the number of potential partners is decreased. The results that the law will not delay the sexual debut of either the 14 or 15 year old are maintained if the law is changed to either a 16 or 17 year old age of consent with a 2 year age span. Of course, this also hinges on the assumption that there is no undue pressure placed on the younger female matched with an older male.

Because of the many different ways of modeling the decision to engage in sexual activity, and the dependency of predictions from any of these models on key assumptions about the interactions of the parties (not to mention the small expected penalties associated with statutory rape laws), we take an agnostic view of the effect that more restrictive laws will have on age of sexual debut. The empirical treatment (less restrictive laws reflected by an increase in "Potential Partners") is consistent with any of the above models. In a utility maximization model, it would be reflected in the payouts of various states; in a search cost model, less restrictive laws would lower costs; or, in a matching model, the laws would be reflected in the preferences of the individuals. Nonetheless, the key question for policy-makers is whether a more restrictive law will delay sexual debut. Modeling the decision is secondary to this question. Thus, we turn to the empirical analysis to guide the discussion.

3. Data and Empirical Methodology

Our analysis exploits exogenous changes in the law that occurred in the 1970s and 1990s using the National Longitudinal Survey of Youth 1979 and 1997, which we combine to

increase our sample size and the sources of variation. The NLSY datasets are panel surveys of two separate cohorts of American youths. We used information on the ages of sexual debut contained in each data file merged with our own constructions of the legal regime governing sexual couplings for each age/state combination.[19] Thus, each respondent was assigned a legal code corresponding to the legal regime that existed at that age of their life. In the initial results (Tables 4-10), we control for the state of residence, the year the respondent was questioned (which also controls for which survey sampling the person belongs to) and various demographic covariates. Because we are concerned about correlation between state statutes and state-age heterogeneity correlated with debut, our most restrictive models (Tables 11-16) control for state-age fixed effects in addition to the aforementioned controls. This extension forces the identification of a state statute on sexual debut to come only from *within* state-age variation in the statutes over time. Combining the two surveys allows us to effectively capture the efficacy of the flurry of legislative activity over the time period on the respondents from the separate cohorts. We discuss methods and results from each set of data separately.

3.1 NLSY79 and NSLY97 Results

In the NLSY79, the respondents were born between 1957 and 1964. We started with a sample of 12,686 individuals (from wave 1), and after applying selection criteria based on race, US residence, and age of debut, we were left with 11,562 respondents. In the 1983, 1984, 1985 waves of the NLSY79, respondents were asked whether they had ever had sexual intercourse, and if so, at what age did it first occur. We dropped all respondents from our sample who reportedly had sex prior to age 10, thus creating a left-truncated sample of respondents whose transition into sexual intercourse occurs no sooner than age 10.[20] Furthermore, because we are focusing only on the effect of legislation aimed at discouraging certain types sexual relationship among teenagers, we created a spell of exposure up to the

[19]The laws were gathered from numerous sources, including Posner and Silbaugh (1996), Cocca (2004), and the annotated statutes of the various states.

[20]Debuts prior to age 10 were reported by Oettinger (1999), who also used the NLSY79. It is unclear whether these represent cases of errors made in recording the information, false reports, or cases of child abuse. There are over 100 cases for males, but only 5 cases for females. Sexual activity with the very young are prohibited under other statutes.

age of 19. All respondents who transitioned into sexual activity at age 20 or above are right-censored since we only focus on transitions up to the age of 19.[21] Since the only relevant information in the NLSY79 that we can use pertains to the age of sexual debut, we focus our attention on that question only with this data.

The Bureau of Labor Statistics updated its classic NLSY79 survey with a newer cohort starting in 1997 (NLSY97). The survey had a smaller sample than that used by the original NLSY79 - only 8,984 initial respondents in 1997. On the other hand, the number of questions about sexual behavior increased considerably. Individuals in the NLSY97 were between the ages of 12-17 in 1997, and as with the NLSY79, respondents were asked about whether they had sex and if so, what age they made their debut. After dropping all non-Black, non-White respondents[22] and selecting only on individuals who debut at age 10 or later, our NLSY97 sample consists of 7,620 individual male and females. When combined with the NLSY79 data, this yields 19,182 individual observations observed until they make their debut between the ages 10 and 19 which gave us 133, 767. In each model, we also control for various demographic background factors that are known to influence debut: the religiosity of the person equalling 1 if they attended services twice a month or more and their mother's educational attainment. Summary statistics for both the NLSY79 and the NLSY97 are listed in Table 5.

We specify a hazard rate model to analyze the determinants of times to sexual debut. The hazard model framework easily handles right-censoring and time-varying covariates. We use a discrete time specification because respondents report their transition into sexual activity as a single age band. We adopt a non-parametric baseline hazard specification that posits the hazard rate into sexual activity for person i at age t, $\theta_i(t)$, taking the form:

$$\lambda_i(t) = \lambda_0(t)e^{\mathbf{X}_i(t)\beta} \tag{1}$$

where $\lambda_0(t)$ is the baseline hazard for all individuals of age t, $x_i(t)$ is a vector of observed covariates for each individual i at age t, and β is a parameter vector which we will estimate.

[21] Individuals who debut at age 20 or higher are included in most of our models, but as they do not debut during the window of time that we analyze, they are never recorded a debut indicator variable since our sample stops at age 19. This exclusion of older debut times is ultimately inconsequential, for as Tables 2 and 3 show, nearly all respondents make their debut by age 19.

[22] The current analysis does not incorporate Hispanics, as the NLSY97 does not include a measure of Hispanic ethnicity in its main race variable.

In this context, the elements of β measure the effects of laws that bind the sexual behavior of teenagers.

Because survival times are intrinsically discrete, we use the proportional odds model to handle the discrete nature of time in our data. The proportional odds model assumes that the relative odds of making a transition at age t, given non-sexual activity up to that age, is summarized by an expression

$$\frac{\lambda(t,x)}{1-\lambda(t,x)} = \frac{\lambda_0(t)}{1-\lambda_0(t)} e^{\mathbf{x}_{i(t)\beta}} \tag{2}$$

where $\lambda(t,x)$ is the discrete time hazard rate for age t, and λ_0 is the corresponding baseline hazard arising when $\mathbf{x}$=0. The relative odds of making a transition at any given age is given by the product of two components: the relative odds common to all respondents, and an individual-scaling factor. It follows from this expression, then, that taking the log will yield an expression which can be estimated using a logit model. This is the logistic hazard model, and because of its precise derivation, has a proportional odds interpretation.

Estimating this model requires specifying the functional form for the duration dependence. We chose a non-parametric specification of the baseline hazard. For this, we created a duration-interval-specific dummy variable for each spell year that the respondent was "at risk" of making a transition into sexual activity. Since the total duration were ages 10 to 19, this translated into 9 dummy variables for ages 11 to 19.[23] The baseline hazard reflects the risk, at age of the respondent, that that person would naturally transition into sexual activity absent any covariate values (i.e., for a person with "baseline" characteristics).

Tables 3 and 4 present the cumulative fraction of male and female respondents from the NLSY79 and NLSY97 (reported separately) who reportedly had sexual intercourse by each age period. Note that, as stated, all respondents with a reported debut earlier than 10 were dropped from the sample. As can be seen, most males made their debut during the 16th year. These average transitional times mask considerable racial differences in debut times: for Black males, well over half had made their debut before turning 16, whereas for White males, nearly half had made their debut before turning 17. By age 19, between 92.63 of all males in the sample had made their transition into sexual activity. The transitions

[23]Thus the model explicitly controls for the unique effect of "age" on debut with a vector of age indicator variables.

reported for females are, on the other hand, smaller at every point in comparison. Half of all female respondents reportedly made their debut before their 18th birthday - though again, this average effect masks considerable racial variation. The average age of debut for Black females was roughly half a year earlier (16.9 years of age) than for White or Hispanics (17.6 and 17.9, respectively). By age 19, 85% of the females in the sample had transitioned into sexual activity.

We estimated models for males and females separately for all races combined, Whites only, and Blacks only. As a matter of robustness, we estimated the same models after dropping the 19-year-olds from the sample, as well as by including a vector of state-age interacted fixed effects, thus forcing the identification of the parameters to come from within state-age variation. Both exercises support our underlying finding that restrictions on the age of teens delay sexual debut.

Table 6 presents selected coefficient estimates from the models for transition into sexual activity. As stated, each model had been estimated with maximum likelihood using a logit specification, and a non-parametric characterization of the baseline duration intervals (i.e., dummy variables for each age of risk to debut). State, year and age fixed effects were also included in all models, as age was treated as the unit of exposure to risk of debut. We divided the sample into two sub-samples: males alone and females alone. For each sub-sample, we estimated the effect of the legislative changes in two ways: the first column beneath male or female uses the continuous measure of the law, which we've termed "Potential Partners." Looking across the column (1) models, we find that the potential partners variable is associated with a 5.7% increase in the odds of making a debut for males and a 9.0% increase for females. Both of these are statistically significant ($p - values$ less than 0.01).

The second column uses the minimum age of consent and the age-span provision, which are indicator variables equalling 1 if the respondent lived in a state with a "binding" minimum age of consent statute. To be binding, the person must be of or below the age of consent that restricts them from having sexual intercourse. Hence, a 12-year-old living in a state where the minimum age of consent was 15 would receive a value of "1", but a 16-year-old would not. We also use a variable called "Agespan Provision" which was equal to 1 if and only if the "Potential Partners" variable was greater than 0 but less than 9. When we used this set of

dummy variables, the omitted value was the fully unrestricted state for the respondent (i.e., "Potential Partners" equalling 9). For both males and females, minimum age of consent laws deter sexual debut: males are 43.4% less likely (1-0.576=0.434) to debut if they are bound by a minimum age of consent law, whereas females are 55.9% less likely (1-0.441=0.559). Agespan laws also limit sexual behavior, though the effects are slightly smaller.

Briefly, we also mention that each of the covariates were found to influence the risk of debut. Though the magnitudes and precisions differed by cut of sample, model specification and demographic under consideration, qualitatively the results were stable. As found in previous studies (Oettinger 1999), we find that Blacks have a considerably higher risk of debut than Whites, particularly for males wherein the Black indicator was associated with more than twice as likely risk of debut at every age. While this seems high, we note that it is similar to what others have found. In both the NLSY79 and NLSY97, Black males have considerably younger sexual debut dates than all other demographics. Secondly, we find that the more frequently a respondent attends religious services, the less likely that person is to make their sexual debut, with an effect that is stronger for females (-40% for females vs. -31% for males). And finally, the more educated a respondent's mother is, the longer that person will wait to make their debut. Maternal education may affect the risk of debut by changing the opportunity cost of time. The more educated a person's mother is, the more likely they are themselves to believe they will achieve higher levels of education, and the higher their expected wage to be.

In tables 7 and 8, we estimated the same models for Whites and Blacks separately. Reading across the results from table 7, we find large deterrent effects of state law changes on debut for White males and White females. When the age bands on debut are relaxed by one year, a White male's risk of debut increases 7.7%, which is statistically significant $(p - value < 0.01)$. For a White female, it's even larger at 9.4%. Minimum age of consent laws appear to have a larger deterrence effect for White males and females than the age-span provision laws themselves, on the other hand. Table 8, though, reveals a stark difference in the effect of the laws by race. Black males and Black females do not appear to have the same response to these laws as White males and White females. The law changes have no effect, for instance, on Black male debut. The coefficient on potential partners is close to zero

(under 1%) and the effect is statistically indistinguishable from zero. Black females, on the other hand, appear to respond by delaying their debut both when they live in a regime with restricted minimum age of consent (-46.8% less likely to debut) as well as when they live in a state that restricts their sexual partner's age (-35.8% less likely to debut). Expanding the age band by one year increases the odds of a Black female debuting by 7.2%. All of these estimates are statistically significant.

3.2 Robustness Check 1: Dropping 19-year-olds

As a robustness check, Tables 9-11 are reproductions of Tables 6-8 without the 19-year-olds. Dropping these individuals from our sample has a large effect on the precision of our estimates of the effect as well as the magnitudes, though we still find limited effects for minimum age of consent laws on White males. Table 9 shows that for 10-18 year olds, minimum age of consent laws are associated with a 8.8% lower probability in debut, which is statistically significant at the 10% level. A closer examination shows that this imprecision is coming primarily from weaker evidence for delayed debut among White females, and for Blacks. Table 10 finds that for White males, there is a 1.9% higher probability of debut as the age of potential partners increases by 1 year. This is coming primarily from the implementation of minimum age of consent laws which lower the odds of a White male making his debut by 17.1% (1-0.829=0.171). We find no statistically significant or economically meaningful effects for White females or Black males or females when we drop the 19-year-olds. A possible explanation of this is that are original results are driven by a duration effect by exposure to living in a less restrictive state, reflecting that there is a time lag for matching to occur. By age 19, all people in our sample have been living in an unrestricted state for two years, and therefore, may be more likely to make a match by the end of this second year.

3.3 Robustness Check 2: Controlling for State-Age Heterogeneity

Because our identification comes primarily from discrete differences in state statutes as it varies at the state-age level, it's possible that our identification is merely picking unobserved heterogeneity at the state-age level. Hence, as an additional robustness check, we re-estimate the same models as shown in Tables 6-11 with state-age fixed effects. These are interaction

terms from the age of each individual in our sample and the state of residence (e.g., Alabama 10-year-olds, Alabama 11-year-olds, etc.). By including these additional fixed effects, the identification of the effect of state statutes on sexual debut is limited to changes over the sample *within* the state-age cell. This identification strategy is considerably more intensive on the data. Interacting 9 age dummies with 50 state dummies yields 450 additional fixed effects.

Changes in state laws in our sample primarily occur when states modify the agespan provision, rather than raising the minimum age of consent law. As a consquence, the "Potential Partners" variable (which ranges from 0 to 9) will have variation in situations when neither "Minimum Age of Consent" nor "Agespan Provision" will. For instance, a state could change the restriction on 14-year-olds from +1 agespan to a +2 agespan. As a result, there will be variation in the "Potential Partners" variable depending on the year in which the individual was 14, but there would not be variation in either the "Minimum Age of Consent" nor "Agespan Provision" variables, since a 14-year-old either before or after the change in the law would be somewhat restricted in their potential mates. Thus, the variable of most interest for the following tables is the "Potential Partners" variable.

In Table 12, we find that for males, expanding a state's range of potential partners by 1 year increased the odds of a male making his sexual debut by 2.9%.[24] The effect on females is similar in size, but is less precise.[25] This result notes that restraining the possible age range of partners causes young males to delay their debut. The effect of the minimum age of consent law is imprecise.[26] This imprecision, as noted, is primarily due to a lack of variation for a state statute over the panel controlling for state-age time-invariant heterogeneity. We find no statistically significant effect of the laws on female debut, on the other hand.

Tables 13 and 14 examine the effect of the laws on White and Black respondent debut, respectively. In Table 13, we find that narrowing the White male's ability to have sex with someone by one year caused his likelihood of debut to fall by 3.3%, which was marginally significant.[27] We do not find large or statistically significant effects for White females, on

[24] $p - value$=0.048.
[25] The $p - value$ on the female coefficient was 0.15.
[26] $p - value$=0.19
[27] $p - value$=0.058

the other hand: the coefficient on "Potential Partners" is close to zero, and the sign on both the "Minimum Age of Consent" and "Agespan Provision" are both positive. In Table 14, we examine the effect of the law changes on Blacks, and as before, find no statistically significant effects on Black males. The effect on Black females, on the other hand, persist even accounting for state-age heterogeneity and year effects. Expanding a sex partner to be one year older causes Black females' debut odds to increase by 4.9%.[28] Most of this effect appears to come from the "Minimum Age of Consent" laws rather than the "Agespan Provisions". Minimum age of consent statutes that have become binding over time through legislative updates causes Black females' sexual debut odds to decrease by 40%.[29]

Next as an additional robustness check, we dropped the 19-year-olds from the sample and re-estimated the models with added state-age fixed effects. Tables 15-17 contain these estimates. As can be seen, dropping the 19-year-olds from the sample has no meaningful effect on the magnitudes of All male, White male or Black female coefficient estimates, nor the precision. Our results are driven entirely by law changes over the sample period that affected primarily teens younger than 19.

4. Conclusions

A teen's decision to engage in sexual activity is difficult to model. Depending on assumptions, restricting the number of partners can have the unintended effect of creating more matches, rather than preventing them. An implicit assumption of the statutory rape laws is that young people will be more likely to have intercourse if they are pressured into it by an older partner. However, it is clear that many debuts occur with partners of similar ages; if the law of the state includes an age span provision, the conduct may not even be illegal.

We do however find that restrictive laws can be successful in preventing sexual debut for both males and females. Specifically, we find the strongest effect of the laws on White males and Black females, a small effect on White females, and no deterrent effect on Black males.

[28] $p - value$=0.06
[29] $p - value$=0.07

The strongest evidence that we find is when we conditional our analysis on state-age fixed effects, thereby exploiting legislative changes in the agespan provision at the state-age level of variation, we still find that limiting the kinds of partners a person can potentially match with will reduce the probability of debut for Black females and White males by 4.9% and 3.3%, respectively. But, these effects are only statistically significant at the 10% level.

What is unclear is the effects that the laws also may have on the choice of mates and the nature of the relationship. For instance, it could be that the rise in teenage fathers is a result of the prevalence of age span provisions in the last few decades. Furthermore, the rise in teenage pregnancy rates may be due to matching with a younger, inexperienced male (because of an age span provision). The inexperienced male has less knowledge of contraception and therefore, more pregnancies result. We leave this question for future work. Additionally, we could look at the frequency of sexual activity under the different laws as proxied by the transmission of sexual transmitted diseases.

It is uncontrovertible that the state has a legitimate interest in protecting young children from being forced into sexual relationships. However, it is debatable as to whether the statutory rape laws that all states use today are the best means of achieving those goals, given the effects that they have particularly on the "victims." But we do find that the laws have an effect on the likelihood of debut, meaning that the laws are effective at least in this regard.

5. Appendix

Table 1: Age of Most Recent Sex Partner

Table 1: Age of Most Recent Sex Partner

	Partner's Age			Partner's Age	
Female's Age	% younger	% older	Male's Age	% younger	% older
16	2	81	16	36	31
17	8	67	17	37	24
18	11	71	18	44	25
19	12	67	19	53	23
20	14	69	20	52	25
21	16	66	21	57	26
22	20	62	22	57	24
23	19	63	23	62	24
24	19	70	24	58	27
25	18	57	25	59	32

Note - Data taken from the NLSY97.

Table 2: Summary of State Laws

State	Min Age	Min Age Year	Age Span	Age Span Year	Mistake of Age?	Previous Chaste?	Code Reference
Alabama	16	1977	2	1977	0	0	13A-6-62,-61
Alaska	16	1983	3	1983	1	0	11.41.434,.436,.438
Arizona	18	1977	0	-	0	0	13-1405
Arkansas	14	1975	2	1975	0	0	5-14-103,-104,-108,-109
California	18	1970	3	1970	0	0	261.5
Colorado	15	1975	4	1975	0	0	18-3-403,-405
Connecticut	16	1969	2	1969	0	0	53a-70,-71
Delaware	16	1953	4	1988	0	0	11-768,-770
DC	16	1948	0	-	0	0	22-3501
Florida	18	1892	-	-	0	1	794.05
Georgia	14	1918	-	-	0	0	16-6-3
Hawaii	14	1986	0	1986	0	0	707-730;707-732
Idaho	18	1972	0	0	0	0	18-6101
Illinois	18	1961	5	1961	1	0	ch. 720 par. 5/12-13-15
Indiana	16	1976/1994	0	-	1	0	35-42-4-3,-5,-9
Iowa	16	1976	6	1976	0	0	702.17, 709.1, .3, .4
Kansas	16	1969	-	-	0	0	21-3503
Kentucky	16	1974	5	1974	0	0	510.040, .050, .060
Louisiana	17	1942	2	1977	0	0	14:80,:81;14:43.1,:43.3
Maine	16	1975	5	1975	1	0	17A-253, -254, -255
Maryland	14	1976	4	1976	0	0	463, 464A, 464B, 464C
Massachusetts	16	1697	-	-	0	0	265-23
Michigan	16	1931	-	-	0	0	750.520d,.520b
Minnesota	16	1975	2	1975	0	0	609.342,609.344
Mississippi	18	1848	0.5	1917	0	1	97-3-65,-67, 97-5-23
Missouri	17	1977	3	1977	1	0	566.030-.100
Montana	16	1973	3	1973	1	0	45-5-501,-502,-503,-511
Nebraska	16	1977	3	1977	0	0	28-319
Nevada	16	1977	5	1977	0	0	200.364,.368
New Hampshire	16	1975	-	-	0	0	632-A:3
New Jersey	16	1978	4	1978	0	0	2C:14-2,-3
New Mexico	17	1975	4	1975	0	0	30-9-11,-13
New York	17	1965	4	1965	0	0	130.05,.25,.30+
North Carolina	13	1979	4	1979	0	0	14-27.2,.4
North Dakota	15	1973	-	-	0	0	
Ohio	16	1972	4	1972	0	0	2907.04,.06
Oklahoma	16	1981	2	1981	0	0	21-1111,-1112,-1114
Oregon	16	1971	-	-	0	0	163.355
Pennsylvania	16	1995	3	1995	0	0	18-3121
Rhode Island	16	1984	3	1984	0	0	11-37-6,-8.1,-8.3
South Carolina	15	1977	-	-	0	0	16-3-655
South Dakota	16	1877	3	1877	0	0	22-22-1
Tennessee	18	1989	4	1989	0	0	39-13-506
Texas	17	1973	3	1973	0	0	21.11
Utah	18	1953	3	1953	0	0	76-5-402.1,-403.1,-404.1,-406
Vermont	16	1977	-	-	0	0	13-3252
Virginia	15	1950	3	1950	0	0	18.2-61,-63
Washington	16	1988	4	1988	0	0	9A.44.073-.089
West Virginia	16	1976	4	1976	0	0	61-8B-5
Wisconsin	18	1987	-	-	0	0	940.225, 948.09
Wyoming	16	1982	4	1982	0	0	6-2-303

Table 3: Cumulative Percentages of Males and Females Who Have First Sexual Intercourse by Each Age, Separately by Race

	Males				Females			
Age	**Hispanic**	**Black**	**White**	**All**	**Hispanic**	**Black**	**White**	**All**
10	0.34	3.47	0.45	1.23	<.1	0.28	0.16	0.17
11	1.69	7.50	1.02	2.84	0.12	0.41	0.23	0.26
12	5.06	17.22	3.64	7.46	0.24	1.31	0.59	0.73
13	9.34	28.19	8.15	13.63	1.19	3.38	2.23	2.38
14	19.12	42.57	15.18	23.05	4.17	9.94	5.90	6.72
15	34.76	61.53	27.01	37.38	12.62	21.13	13.60	15.49
16	54.78	80.69	48.99	58.30	27.02	41.64	30.91	33.21
17	74.80	90.14	67.66	74.75	45.71	63.81	49.69	52.89
18	87.96	96.39	83.29	87.50	65.95	83.29	72.21	74.23
19	93.70	98.06	89.84	92.63	80.36	91.02	83.09	84.81
N	833	1,440	3,129	5,458	840	1,448	3,051	5,338

Note - the reported distributions were calculated using the NLSY79, having dropped all respondents who reported a debut earlier than age 10. Unlike Oettinger (1999), this analysis does not use the NLSY79 sample weights.

Table 4: Cumulative Percentages of Males and Females Who Have First Sexual Intercourse by Each Age, Separately by Race

	Males			Females		
Age	**Black**	**White**	**All**	**Black**	**White**	**All**
10	2.51	0.45	1.11	<0.1	<0.1	<0.1
11	6.08	1.44	2.92	0.59	0.29	0.38
12	14.48	4.01	7.34	3.52	1.57	2.21
13	30.60	9.37	16.12	10.55	6.33	7.71
14	51.06	21.62	30.99	27.73	18.29	21.38
15	69.02	38.20	48.00	46.97	36.52	39.95
16	82.43	58.15	65.88	66.70	57.14	60.28
17	91.12	73.56	79.15	81.74	73.62	76.28
18	96.81	87.52	90.48	92.29	86.71	88.54
19	98.36	93.42	94.99	96.00	94.05	94.69
N	1,036	2,220	3,256	1,024	2,100	3,124

Note - the reported distributions were calculated using the NLSY97, having dropped all respondents who reported a debut earlier than age 10.

Table 5: Summary Statistics

		NLSY79 Respondents			
Variables	**N×T**	**Mean**	**Std. Dev.**	**Min**	**Max**
Black	78278	0.23	0.04	0	1
White	78278	0.61	0.05	0	1
Hispanic	78278	0.16	0.36	0	1
Male	78278	0.46	0.50	0	1
Female	78278	0.54	0.50	0	1
Age	78278	14.18	2.31	11	19
Religious Attendance	78278	0.55	0.50	0	1
Maternal Education (< High School)	78278	0.38	0.48 0	1	
Maternal Education (High School Diploma)	78278	0.40	0.49	0	1
Maternal Education (Some College)	78278	0.10	0.29	0	1
Maternal Education (College Graduate)	78278	0.13	0.34	0	1
		NLSY97 Respondents			
Variables	**N×T**	**Mean**	**Std. Dev.**	**Min**	**Max**
Black	55510	0.23	0.42	0	1
White	55510	0.62	0.49	0	1
Male	55510	0.49	0.50	0	1
Female	55510	0.51	0.50	0	1
Age	55510	14.04	2.25	11	19
Religious Attendance	55510	0.77	0.42	0	1
Maternal Education (< High School)	55510	0.19	0.39	0	1
Maternal Education (High School Diploma)	55510	0.32	0.46	0	1
Maternal Education (Some College)	55510	0.22	0.41	0	1
Maternal Education (College Graduate)	55510	0.18	0.38	0	1

Table 6: Estimated Effect of State Law Changes on Probability of Debut – All Races

	Males Only		Females	
Potential Partners	1.057**		1.090**	
	(0.005)		(0.006)	
Binding Minimum Age of Consent		0.576**		0.441**
		(0.027)		(0.023)
Agespan Provision		0.675**		0.551**
		(0.030)		(0.025)
Black	2.171**	2.171**	1.428**	1.424**
	(0.067)	(0.067)	(0.044)	(0.044)
Religious Attendance	0.707**	0.708**	0.601**	0.601**
	(0.019)	(0.019)	(0.017)	(0.017)
Mother Education: < High School	1.196**	1.199**	1.054+	1.059+
	(0.037)	(0.037)	(0.033)	(0.033)
Mother Education: Some College	0.864**	0.864**	0.892**	0.893**
	(0.033)	(0.033)	(0.036)	(0.036)
Mother Education: College Graduate	0.782**	0.783**	0.792**	0.793**
	(0.030)	(0.030)	(0.033)	(0.033)
State×Age FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	63115	63115	70652	70652

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 7: Estimated Effect of State Law Changes on Probability of Debut – Whites Only

	Males Only		Females	
Potential Partners	1.077**		1.094**	
	(0.007)		(0.007)	
Binding Minimum Age of Consent		0.489**		0.423**
		(0.028)		(0.026)
Agespan Provision		0.629**		0.537**
		(0.033)		(0.029)
Religious Attendance	0.670**	0.672**	0.569**	0.569**
	(0.021)	(0.021)	(0.018)	(0.018)
Mother Education: < High School	1.236**	1.241**	1.043	1.050
	(0.045)	(0.045)	(0.039)	(0.039)
Mother Education: Some College	0.874**	0.874**	0.901*	0.901*
	(0.039)	(0.039)	(0.042)	(0.042)
Mother Education: College Graduate	0.773**	0.773**	0.783**	0.784**
	(0.034)	(0.034)	(0.038)	(0.038)
State×Age FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	49993	49993	52860	52860

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 8: Estimated Effect of State Law Changes on Probability of Debut – Blacks Only

	Males Only		Females	
Potential Partners	1.009		1.072**	
	(0.010)		(0.011)	
Binding Minimum Age of Consent		0.886		0.532**
		(0.081)		(0.051)
Agespan Provision		0.916		0.642**
		(0.083)		(0.055)
Religious Attendance	0.825**	0.825**	0.714**	0.714**
	(0.045)	(0.045)	(0.042)	(0.042)
Mother Education: < High School	1.078	1.079	1.081	1.081
	(0.063)	(0.063)	(0.065)	(0.065)
Mother Education: Some College	0.857*	0.857*	0.835*	0.837*
	(0.067)	(0.067)	(0.067)	(0.067)
Mother Education: College Graduate	0.810**	0.810**	0.817*	0.816*
	(0.062)	(0.062)	(0.071)	(0.071)
State×Age FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	13122	13122	17473	17473

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 9: Estimated Effect of State Law Changes on Probability of Debut – All Races, drop 19 year olds

	Males Only		Females	
Potential Partners	1.008		1.003	
	(0.006)		(0.006)	
Binding Minimum Age of Consent		0.912+		0.962
		(0.047)		(0.056)
Agespan Provision		0.994		0.946
		(0.048)		(0.047)
black	2.374**	2.372**	1.539**	1.539**
	(0.075)	(0.075)	(0.050)	(0.050)
Religious Attendance	0.706**	0.706**	0.595**	0.595**
	(0.020)	(0.020)	(0.018)	(0.018)
Mother Education: < High School	1.234**	1.232**	1.118**	1.119**
	(0.039)	(0.039)	(0.037)	(0.037)
Mother Education: Some College	0.837**	0.837**	0.898*	0.898*
	(0.034)	(0.034)	(0.038)	(0.038)
Mother Education: College Graduate	0.762**	0.762**	0.788**	0.789**
	(0.030)	(0.030)	(0.035)	(0.035)
State×Age FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	60942	60942	67610	67610

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 10: Estimated Effect of State Law Changes on Probability of Debut – Whites Only, drop 19 year olds

	Males Only		Females	
Potential Partners	1.019**		1.004	
	(0.007)		(0.008)	
Binding Minimum Age of Consent		0.829**		0.930
		(0.052)		(0.066)
Agespan Provision		0.983		0.963
		(0.056)		(0.058)
Religious Attendance	0.667**	0.666**	0.564**	0.564**
	(0.022)	(0.022)	(0.019)	(0.019)
Mother Education: < High School	1.299**	1.296**	1.114**	1.114**
	(0.049)	(0.049)	(0.044)	(0.044)
Mother Education: Some College	0.851**	0.851**	0.906*	0.906*
	(0.040)	(0.040)	(0.045)	(0.045)
Mother Education: College Graduate	0.755**	0.755**	0.777**	0.777**
	(0.035)	(0.035)	(0.040)	(0.040)
State×Age FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	48084	48084	50393	50393

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 11: Estimated Effect of State Law Changes on Probability of Debut – Blacks Only, drop 19 year olds

	Males Only		Females	
Potential Partners	0.997		0.998	
	(0.010)		(0.011)	
Binding Minimum Age of Consent		0.997		1.071
		(0.097)		(0.114)
Agespan Provision		1.012		0.958
		(0.095)		(0.088)
Religious Attendance	0.826**	0.826**	0.701**	0.700**
	(0.045)	(0.045)	(0.043)	(0.043)
Mother Education: < High School	1.082	1.082	1.123+	1.123+
	(0.064)	(0.064)	(0.070)	(0.070)
Mother Education: Some College	0.827*	0.826*	0.837*	0.837*
	(0.065)	(0.065)	(0.070)	(0.070)
Mother Education: College Graduate	0.793**	0.792**	0.814*	0.815*
	(0.062)	(0.062)	(0.074)	(0.074)
State×Age FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	12858	12858	16891	16891

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 12: Estimated Effect of State Law Changes on Probability of Debut – All Races

	Males Only		Females	
Potential Partners	1.029*		1.023	
	(0.014)		(0.016)	
Binding Minimum Age of Consent		0.789		0.798
		(0.145)		(0.156)
Agespan Provision		0.948		0.959
		(0.187)		(0.202)
black	2.208**	2.207**	1.509**	1.509**
	(0.072)	(0.072)	(0.050)	(0.050)
Religious Attendance	0.718**	0.718**	0.600**	0.601**
	(0.020)	(0.020)	(0.017)	(0.017)
Mother Education: < High School	1.211**	1.211**	1.109**	1.109**
	(0.038)	(0.038)	(0.035)	(0.035)
Mother Education: Some College	0.865**	0.865**	0.894**	0.894**
	(0.034)	(0.034)	(0.036)	(0.036)
Mother Education: College Graduate	0.782**	0.782**	0.793**	0.792**
	(0.030)	(0.030)	(0.033)	(0.033)
State×Age FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	62931	62931	69683	69683

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 13: Estimated Effect of State Law Changes on Probability of Debut – Whites Only

	Males Only		Females	
Potential Partners	1.033+		1.006	
	(0.018)		(0.021)	
Binding Minimum Age of Consent		0.734		1.021
		(0.169)		(0.312)
Agespan Provision		0.907		1.186
		(0.221)		(0.380)
Religious Attendance	0.683**	0.683**	0.565**	0.566**
	(0.022)	(0.022)	(0.019)	(0.019)
Mother Education: < High School	1.272**	1.273**	1.102*	1.102*
	(0.047)	(0.047)	(0.042)	(0.042)
Mother Education: Some College	0.868**	0.869**	0.901*	0.901*
	(0.040)	(0.040)	(0.043)	(0.043)
Mother Education: College Graduate	0.771**	0.771**	0.779**	0.779**
	(0.035)	(0.035)	(0.038)	(0.038)
State×Age FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	49529	49529	50915	50915

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 14: Estimated Effect of State Law Changes on Probability of Debut – Blacks Only

	Males Only		Females	
Potential Partners	1.037		1.049+	
	(0.026)		(0.026)	
Binding Minimum Age of Consent		0.760		0.600+
		(0.238)		(0.169)
Agespan Provision		0.895		0.762
		(0.310)		(0.240)
Religious Attendance	0.816**	0.816**	0.728**	0.729**
	(0.046)	(0.046)	(0.044)	(0.044)
Mother Education: < High School	1.056	1.056	1.113+	1.113+
	(0.064)	(0.064)	(0.069)	(0.069)
Mother Education: Some College	0.864+	0.864+	0.817*	0.817*
	(0.069)	(0.069)	(0.068)	(0.068)
Mother Education: College Graduate	0.798**	0.799**	0.792**	0.791**
	(0.063)	(0.063)	(0.071)	(0.071)
State×Age FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	12861	12861	16737	16737

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 15: Estimated Effect of State Law Changes on Probability of Debut – All Races, 19-year-olds Dropped

	Males Only		Females	
Potential Partners	1.028*		1.021	
	(0.014)		(0.016)	
Binding Minimum Age of Consent		0.800		0.805
		(0.147)		(0.159)
Agespan Provision		0.954		0.958
		(0.189)		(0.204)
black	2.312**	2.312**	1.568**	1.568**
	(0.077)	(0.077)	(0.054)	(0.054)
Religious Attendance	0.706**	0.706**	0.597**	0.597**
	(0.020)	(0.020)	(0.018)	(0.018)
Mother Education: < High School	1.217**	1.217**	1.125**	1.126**
	(0.039)	(0.039)	(0.038)	(0.038)
Mother Education: Some College	0.838**	0.838**	0.885**	0.885**
	(0.034)	(0.034)	(0.038)	(0.038)
Mother Education: College Graduate	0.763**	0.763**	0.786**	0.786**
	(0.030)	(0.030)	(0.035)	(0.035)
State×Age FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	60771	60771	66647	66647

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 16: Estimated Effect of State Law Changes on Probability of Debut – Whites Only, 19-year-olds Dropped

	Males Only		Females	
Potential Partners	1.032+		1.007	
	(0.018)		(0.022)	
Binding Minimum Age of Consent		0.745		1.042
		(0.172)		(0.319)
Agespan Provision		0.912		1.229
		(0.225)		(0.396)
Religious Attendance	0.668**	0.668**	0.563**	0.563**
	(0.022)	(0.022)	(0.020)	(0.020)
Mother Education: < High School	1.283**	1.283**	1.119**	1.119**
	(0.049)	(0.049)	(0.045)	(0.045)
Mother Education: Some College	0.845**	0.846**	0.895*	0.894*
	(0.040)	(0.040)	(0.045)	(0.045)
Mother Education: College Graduate	0.751**	0.751**	0.774**	0.773**
	(0.035)	(0.035)	(0.040)	(0.040)
State×Age FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	47631	47631	48455	48455

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 17: Estimated Effect of State Law Changes on Probability of Debut – Blacks Only, 19-year-olds Dropped

	Males Only		Females	
Potential Partners	1.037		1.044+	
	(0.026)		(0.026)	
Binding Minimum Age of Consent		0.759		0.598+
		(0.238)		(0.169)
Agespan Provision		0.896		0.725
		(0.311)		(0.230)
Religious Attendance	0.814**	0.814**	0.725**	0.725**
	(0.046)	(0.046)	(0.045)	(0.045)
Mother Education: < High School	1.061	1.061	1.136*	1.136*
	(0.064)	(0.064)	(0.072)	(0.072)
Mother Education: Some College	0.832*	0.832*	0.802*	0.802*
	(0.068)	(0.068)	(0.069)	(0.069)
Mother Education: College Graduate	0.785**	0.785**	0.791*	0.790*
	(0.063)	(0.063)	(0.074)	(0.074)
State×Age FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
N	12647	12647	16179	16179

Standard errors in parenthesis. $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

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