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DO STATE LAWS AFFECT THE AGE OF MARRIAGE? A CAUTIONARY TALE  
ABOUT AVOIDANCE BEHAVIOR

Rebecca M. Blank  
Kerwin Kofi Charles  
James M. Sallee

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**ABSTRACT**

This paper investigates the response of young people in the United States to state laws dictating the minimum age at which individuals could marry, with and without parental consent. We use variation across states and over time to document behavioral responses to laws governing the age of marriage using both administrative records from the Vital Statistics and retrospective reports from the U.S. Census. We find evidence that state laws delayed the marriages of some young people, but the effects are much smaller in Census data than in Vital Statistics records. This discrepancy appears to be driven by systematic avoidance behavior of two kinds. First, some young people marry outside their state of residence, in states with less restrictive laws. Second, many young people appear to have evaded minimum age of marriage laws by misrepresenting age on their marriage certificate. This avoidance was especially pronounced in earlier years, when few states required documented proof of age and when there was greater gain to marrying out of state because of wider variation in laws. Our results have important implications about the quality of administrative data when it is poorly monitored; about the effect of laws when agents can avoid them; and about the validity of estimates using cross-state variation in laws as an instrumental variable. By contrasting two data sources, we achieve a more complete picture of behavioral response than would be possible with either one alone.

Rebecca M. Blank  
Brookings Institution  
1775 Massachusetts Avenue  
Washington, D.C. 20036  
and NBER  
blank@umich.edu

James M. Sallee  
University of Michigan Business School  
Ann Arbor, MI 48109-1234  
jsallee@umich.edu

Kerwin Kofi Charles  
Harris School of Public Policy  
University of Chicago  
1155 East 60th Street  
Chicago, IL. 60637  
and NBER  
kcharles@uchicago.edu

## **Introduction**

This paper studies the effect of state minimum age of marriage laws on the marital behavior of adolescents and young adults affected by these laws. Age of marriage laws were designed to reduce early marriage, in part because of concerns about health and social problems associated with childbearing at young ages. Before the 1970s, adolescents wishing to marry faced minimum age of marriage restrictions which varied widely across states. Over a short period in the early 1970s these laws converged, so that by 1975 the minimum permissible age of marriage was identical across almost all states. For young men, many states lowered the permissible age for marriage without parental consent from 21 to 18. For young women, the most frequent changes went in the other direction. While in the 1940s many states allowed adolescent women to get married at ages 12 or 14 with parental consent, by the mid-1970s most states required that young women be at least 16 if they were to be married.

Understanding how these laws affected marital behavior is important for several reasons. First, knowing the precise nature of these laws' effects could help explain the evolution of adolescent marriage over time. Second, understanding how young people's marital behavior changed in the face of these laws may permit a richer understanding of the likely effects of current policy proposals to affect marriage incidence and timing. Examples of current policy proposals include "marriage incentive" programs aimed at women (and their partners) at risk of out-of-wedlock childbearing. Third, while marriage is one of the most salient outcomes in a person's life and affects other important life decisions like human capital attainment and fertility, disentangling the causal effect of marriage is difficult because of endogenous selection into marriage. Because minimum age of marriage laws can reasonably be expected to have exogenously changed behavior, analyses using these laws as instrumental variables could potentially isolate variation in marriage that is free of these endogeneity concerns and thereby allow scholars to assess marriage's causal effects on other behaviors.

At first blush, it would appear that the "gold-standard" data source for assessing how marriage laws affect marriage behavior would be official marriage statistics from the National Vital Statistics System. These data are drawn from actual marriage certificates within the state and represent the official administrative record of marriage behavior collected at the point of marriage. Other surveys, like the decennial Census, enquire about marriage history, but rely on a person's retrospective report about behavior from years before. We compare marriage outcomes

among those aged 21 or younger in states with different minimum age of marriage laws. We find that results from the Vital Statistics about marriages in the early 1950s data are dramatically at odds with the retrospective data from the Census covering the same period. Specifically, the distribution of age at marriage in the Vital Statistics reveals relatively few marriages below the legal age of marriage and a large, discontinuous increase in the number of marriages occurring precisely at the legal ages within a state, as one would expect if these marriage laws affect marriage behavior. Surprisingly, this pattern is not evident in retrospective Census data covering the same set of marriages; there are more younger marriages and little evidence of a spike in marriages at the legal age of marriage.

We attempt to understand what accounts for this puzzling difference. We focus in particular on the obvious but frequently ignored fact that, for any law, some persons will attempt to evade or avoid the law because of their desire to engage in the activity the law prohibits. We argue that in the context of minimum age of marriage laws, there are two important potential mechanisms by which persons too young to marry legally in their state but wishing to get married nonetheless, might avoid minimum marriage age laws: if possible, they could systematically mis-represent their ages when completing marriage certificate information within their state; or they could travel to another state where they could legally marry. Interestingly, both of these types of avoidance would tend to produce exactly the difference between the Vital Statistics and Census estimates we document. A young person who misrepresented her age at the time of marriage because she was too young to legally marry would have no incentive to mis-represent her true age of marriage many years later when giving retrospective Census reports since she faces no sanction from doing so. Similarly, if she moved to a less restrictive state to legally marry there, her marriage would not be recorded in her state's marriage certificate records which would show a disproportionate share of marriages among those who actually complied with the state law.

Using various pieces of evidence, we demonstrate the importance of avoidance behavior. We show first that much of the difference in the distribution of age of marriage across the two data sources in 1950 essentially disappears by 1970. We regard this evidence as consistent with the fact that it became harder for individuals to successfully mis-represent their ages after documentary evidence of proof of age, such as driver's licenses and social security cards, became more common. We next examine out-of-state marriage, which we term "marriage migration," before and after the convergence in state age of marriage laws. We show that there was a statistically significant but modest level of cross-state marriage migration in the late 1960s, which

declined as state minimum age laws converged. On the whole, our results suggest that marriage laws induced young people to both mis-represent their ages and to migrate systematically. However, avoidance was much more pronounced in the 1950s than in later decades, principally due to the greater ease of age misrepresentation.

We conclude our empirical analysis by using Census data to estimate the degree to which marriage laws caused young people to actually delay their marriage, finding statistically significant but relatively modest effects. We contrast these estimates to the dramatically larger results that would be forthcoming from widely respected Vital Statistics data if the avoidance and consequent errors induced into these marriage certificate records were not accounted for.

The only work we know of which *does* study the effects of early marriage laws on marriage behavior is Dahl (2005), who uses information on age of marriage laws as one of several instruments to explain teenage marriage and school leaving behavior. Like us, Dahl finds that more restrictive laws (higher minimum ages of marriage with parental consent) reduce younger marriages among teenage women. Dahl does not, however, analyze the systematic avoidance behaviors that are of central importance to us.<sup>1</sup>

Our results raise an important set of cautions. The first set deal specifically with efforts to measure the impact of marriage laws on behavior. A significant literature in demography has focused on trends in the age of first marriage.<sup>2</sup> A separate and growing literature studies questions closely related to the issue of early marriage, including the effect of teenage childbearing on women's life outcomes, and the incidence of low education, higher levels of criminal activity, higher poverty and other negative outcomes among persons born to teenage mothers.<sup>3</sup> Our results suggest that, to the extent that these literatures rely on Vital Statistics information from earlier decades, they should be interpreted with care.

More generally, our results raise a cautionary note about empirical work that assesses people's

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<sup>1</sup> This paper differs from Dahl's work in other important ways. Specifically, Dahl's analysis: (a) uses information from the *World Almanac*, which does not have complete information on the laws in all states; (b) examines the impact of only those laws regulating the legal age of marriage *with* parental consent; (c) focuses only on women; and (d) is based only on the years 1935 to 1969 – before the major changes in marriage laws that are our focus.

<sup>2</sup> For instance, see Rele (1965), Rosenwaike (1967), Rodgers and Thornton (1985), or Clarke and Wilson (1994).

<sup>3</sup> For instance, see Ribar (1994), Klepinger, Lundberg and Plotnick (1995), Hoffman (1998), Hunt (2003),

behavioral responses to laws, and the data used to answer these questions. Empirical researchers are often interested in how the passage or presence of a law affects the particular behavior its enactment was meant to regulate. In addition, since the behavioral changes induced by laws can often be regarded as exogenous, much recent scholarship has used laws as instrumental variables in analyzing the relationship between the behaviors directly affected by the law and some other outcome. In the United States, this approach is greatly aided by differences across states in the timing and content of comparable laws. Moreover, the use of administrative data, specifically designed to measure the behavior affected by the law, often further raises confidence in the estimated effect of laws on behavior.

However, our results suggest that although researchers have come to regard administrative data which specifically records the behavior of interest as the best data possible, it is in these data where the incidence of systematic misreporting may be especially high. If this is so, standard regression or instrumental variables estimates of how behavior changed using these data may be very much at variance with changes that actually occurred in the population. Misrepresentation is merely one way in which agents can avoid a law. In the case of state laws, they may be able to conduct business in another state with a different law, a response that has been much-investigated with regard to tax laws<sup>4</sup> but which we investigate in the context of social policy regulation.

In the next section, we review the history of minimum age of marriage laws. In Section 3, we describe marriage data in the Vital Statistics and Census. Section 4 presents distribution of age of marriage results from the two data sources, highlighting the large differences between them. Sections 5 and 6 analyze, respectively, age mis-representation and systematic migration. In Section 7 we show that alternative explanations are unlikely to account for the results we document. We provide estimates of the actual effects of the laws on marriage ages in Section 8, and discuss the broader implications of our results. Section 9 concludes.

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and Dahl (2005).

<sup>4</sup> For instance, two recent contributions are Lovenheim (2007) and Asplund, Friberg and Wilander (2006).

## 2. State Regulation of the Age of Marriage

Because of the institution's deep religious and secular importance, states have virtually always regulated marriage in some manner. For instance, early state statutes defined the implications of marriage for property ownership (married women were typically not able to own property in their own name), and the circumstances under which divorce could occur. As frontier territory became organized into officially-recognized states, marriage legislation was typically included in the first set of statutes enacted by newly-created state legislatures.<sup>5</sup>

Legal regulations controlling the age of marriage became common in the last half of the 19<sup>th</sup> century. During this period, virtually all states enacted legislation detailing the ages at which men and women could marry with and without their parents' consent.<sup>6</sup> These ages varied across states and by gender. For instance, in 1900, the allowable age of marriage without parental consent ranged from 14 for men and 12 for women in New Hampshire, to 21 for both men and women in Pennsylvania. We refer to these laws as "non-consent laws." The allowable age of marriage with parental consent ranged from 14 for men and 12 for women in some (mostly southern) states, to 18 for men and 16 for women in other states. We refer to these laws as "consent laws." For men, the age of marriage without consent was typically 21, which was also the age of majority – the age at which men could own property and vote. We gathered information on the legislative statutes governing age of marriage in each state and over time. In most cases, this required tracing statutes back in time through each subsequent amendment. While most of these laws were initially enacted in the latter half of the 1800s, they were frequently amended in many states.

In this paper, we focus on minimum age of marriage laws in the post-World War II period. Table 1 summarizes the various minimum age of marriage laws across the states in 1950 and 1980. In 1950, the northeast and Midwest had somewhat more restrictive laws than the South and West. Furthermore, the ages at which women were allowed to marry were almost everywhere lower than the ages at which men could marry.

Over the next 30 years, these laws would change substantially. By 1980 the age of marriage

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<sup>5</sup> For a fascinating discussion of changing laws around marriage in the U.S., see Cott (2000).

<sup>6</sup> Couples could marry below the legal age if they were granted a waiver by a judge. Most commonly, waivers were granted to young pregnant women wishing to marry.

without consent was 18 for both men and women in virtually all states. Convergence was not as strong for the ages of marriage with consent, and there remained some variance in these ages across states in 1980. Most of the convergence in state laws occurred between 1971 and 1975. An important cause of the changes during this period was the passage of a constitutional amendment in 1971 allowing men and women to vote at age 18 in federal elections. This change was stimulated in part by the argument that men who were old enough to be drafted to fight in Vietnam were old enough to vote. With this change in the federal age of majority, most states enacted changes in state voting ages and in marriage statutes as well. The growing women's movement's increasing insistence on legal parity between men and women helped ensure that these new laws mandated similar minimum marriage ages for men and women.

Figures 1a and 1b show the share of states with different age limits on marriage without consent, over the period 1940 to 2002.<sup>7</sup> Figure 1a shows the pattern for men, indicating the rapid shift away from age 21 to age 18 over the early 1970s. Figure 1b shows the pattern for women. While age 18 was already previously the modal age at which women could be married without parental consent, the number of states with this age restriction increased in the early 1970s.

Figures 2a and 2b show the legal age of marriage with parental consent for men and women between 1940 and 2002. Figure 2a indicates that many states did not allow men to marry at all prior to age 18 in the 1940s and 1950s. When the age of marriage without consent was lowered to 18 for men, many states lowered men's age of marriage with consent to 16. Figure 2b shows the opposite pattern for women. In the early years a substantial minority of states allowed women below age 16 to marry with their parents' consent; by the end of the period most states required women to be at least age 16. Hence, statutory changes lowered legal ages of marriage among men and the legal age of marriage without consent for women over this time period, but raised the minimum age with consent for women.

As seen in the figures, there was substantial variation in the age-of-marriage laws across the different states between 1950 and 1980, and dramatic changes in marriage laws *over* time. Most of these changes in minimum marriage ages occurred over a relatively short time period, with pronounced activity in the late 1960s and early 1970s. A small set of changes were particularly common and constituted the majority of all changes. These include a reduction in the age of

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<sup>7</sup> The legal data include all fifty states, but exclude the District of Columbia, due to difficulty in obtaining historical statutes for the District.

marriage without parental consent from 21 to 18 for both men and women; the decrease in the legal age of marriage with consent from 18 to 16 for men; and the increase from 14 or 15 to 16 for women. The effect of these most common changes will be the ones best identified in the analysis to follow.

### **3. Data on Marriage Outcomes for Affected Cohorts of Adolescents**

How did these marriage laws affect the marital behavior of young men and women across various cohorts? In principle, this question could be answered with data from two different sources, the National Vital Statistics or the Decennial Census.<sup>8</sup> We discuss these sources in turn.

The National Vital Statistics System (currently located within the Centers for Disease Control, or CDC) collected information on marriage from 1940 to 1995.<sup>9</sup> Vital Statistics marriage data was provided voluntarily by the states, based on information from state marriage certificates. Couples complete marriage certificates just prior to their marriage in order to receive a marriage license and to have the marriage legally registered with the state. Over the time period that marriage information was collected by Vital Statistics, the number of states voluntarily providing information increased substantially: in 1950 only 18 states provided information, while virtually all states reported by 1980.<sup>10</sup> Because the data are collected at the time of marriage and are official administrative data, the Vital Statistics is typically considered the authoritative source of information on marriage in the U.S.

In addition to not being available in all states in all years, Vitals Statistics information is not available in age-disaggregated form. Data on marriages before 1968 are available only via published annual reports, so researchers are limited to the tables and breakdowns in these volumes.<sup>11</sup> The information reported varies somewhat from year to year. For instance, we know state-specific information on the number of first marriages by gender at each age within the

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<sup>8</sup> Apart from the Census and Vital Statistics, the only other systematic data source is the June supplement to the Current Population Survey, which includes questions about marriage in some years. Relative to the Census, the June CPS samples are smaller and cover more recent years which are of less interest to us.

<sup>9</sup> Unfortunately, Vital Statistics stopped collecting marriage data from the states in 1995.

<sup>10</sup> Two additional states report incomplete information in 1950, which we do not use. New York reports data omitting New York City, and Louisiana reports data omitting New Orleans. Nearly all states report at least some data after 1970. After 1960, these data come from samples of marriage licenses rather than from a complete census.

<sup>11</sup> These volumes are available online from the Vital Statistics System. The current url is <http://www.cdc.gov/nchs/products/pubs/pubd/vsus/1963/1963.html>.

eighteen reporting states in 1950 (as well as for several years in the 1940s), but this information is not available again at a state-specific level until 1968.<sup>12</sup> During the rest of the 1950s and 1960s, published reports include information on the total number of marriages by age only in grouped categories: total first marriages among all persons less than age 19 and among all persons aged 20-24.

We are interested in the impact of marriage laws on marriage outcomes at particular ages, so the lumpy nature of the Vital Statistics information is limiting. To conduct detailed, age-specific comparisons with the Vital Statistics data, we therefore focus on changes between the years 1950 and 1970 – two years for which the detailed age information is available.

The decennial Censuses represent an alternative source of data about marriage outcomes for the populations of young people affected by marriage laws. In the 1960, 1970 and 1980 Censuses, respondents were asked about the date of their first marriage, as well as the date of their birth. It is thus straightforward to calculate individuals' age at marriage from these two pieces of retrospective information. Indeed, because of the large samples in Census and the fact that the retrospective Census data come in age-disaggregated form, many previous studies have used Census data to study aspects of marriage different from the specific questions we study. The obvious drawback of Census information is that marriage data is retrospective. In general, one would expect younger marriages to be under-reported in the Census, particular if those marriages are of relatively short duration. However, if there are errors in recall, such errors likely diminish the closer to the event the retrospective question is asked. A comparison of results from different Censuses can therefore provide a good sense of how serious a concern recall error is. A more serious limitation is that retrospective Census data provide no information about where a marriage occurred. The location information available in the Census is limited to information about a person's state of residence at the time they respond to the Census, and their state of birth so one must assume that marriages occur in the state of birth.

The differences between these two data sources notwithstanding, a reasonable expectation is that the contemporaneous information about marriage from the Vital Statistics and the retrospective information from the Census should show essentially the same distribution of marriage by age among each cohort of young persons. We examine these marriage patterns in the next section.

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<sup>12</sup> Microdata files for 1968 to 1995 are maintained by the National Bureau of Economic Research. The current url is <http://www.nber.org/data/marrdivo.html>.

#### 4. Marriage Laws and the Distribution of Age of Marriage

Did marriage laws cause young people to delay their marriages? How would any such effect be detected in the data? To organize thinking about this question, suppose that the number of women of age  $a$  wishing to marry in state  $s$  at time  $t$  is  $n_{st}^a$ . Let  $\pi_a$  present the share of parents of persons of age  $a$  who would consent to them marrying at age  $a$ . Suppose that  $\hat{a}_s$  is the age at which persons within the state can marry without parental consent. Finally, let  $f_t(a)$  be the fraction of all marriages occurring in state  $s$  in year  $t$ . If marriage laws are binding, then the probability density function of ages at marriage is described as

$$f_{st}(a) = \begin{cases} \frac{\pi_a n_{st}^a}{\sum_{a < \hat{a}_s} \pi_a n_{st}^a + \sum_{a \geq \hat{a}_s} n_{st}^a} & \text{if } a < \hat{a}_s \\ \frac{n_{st}^a}{\sum_{a < \hat{a}_s} \pi_a n_{st}^a + \sum_{a \geq \hat{a}_s} n_{st}^a} & \text{if } a \geq \hat{a}_s \end{cases} \quad (1)$$

Equation (1) implies that, barring the unrealistic assumption that parents would grant consent to any proposed marriage, the probability density function of ages at marriage should display a discrete jump or “spike” at the age of legal non-consent within a state. Furthermore, these “spikes” should occur at different ages in different states, depending upon the marriage laws in effect in the state.

For the analysis of a consent law,  $\pi_a$  could be interpreted as the proportion of marriages that a judge would allow below the legal of age marriage with parental consent. In this section, and the next several sections, we focus on non-consent laws. We think that non-consent laws are more interesting because they are more likely to bind. They apply to ages at which young people are more likely to marry, and are thus more likely to delay marriage or induce avoidance.

##### *Vital Statistics Estimates of Distributions of Age of Marriage*

Figure 3a is the distribution of age of marriage of women marrying in 1950 in the states that report marriage certificate information to the Vital Statistics in that year. The dark line shows the

distribution of age at first marriage in 1950 in the four states with a female non-consent age of 21; the dashed line shows the distribution of age at first marriage in the sixteen states with a female non-consent age of 18. Figure 3a suggests that, in 1950, marriages of 18 year old women constituted a significantly higher fraction of all marriages in states allowing women to marry at age 18 without consent than was true in states with a female non-consent age of 21. Interestingly, although women in states with a non-consent age of 21 *could* have married at younger ages with the consent of their parents, the figure suggests that only a small share of all marriages occurred among women at these younger ages. The patterns suggest that more stringent marriage laws lead some young women to delay marriage.

Figure 3b depicts the same information for men in 1950. The difference in the distribution of marriage ages for men across the two sets of states is smaller than that among women, with male marriage revealing a peak in marriage at age 21 in both age-18 and age-21 non-consent states. One possible explanation for the difference is the fact that men usually marry later than women. If a larger share of men desire to marry at age 21 or older, a constraint mandating a minimum age of 18 will be less binding on male behavior. Nonetheless, the patterns in this figure also indicate that more men marry at a younger age in states with lower minimum age of marriage laws.

We conduct a series of formal tests to confirm that the differences which are visually apparent in Figure 3a and 3b are statistically significant. Although in these and later figures, we present the full probability density distribution of ages of first marriage over a full set of ages, the specific formal tests we wish to conduct focus on the share of all marriages represented by particular *groups* of ages. For example, in the case of Fig 3a we wish to test first whether the share of all marriages by women less than 18 is the same across the two sets of states. Second, we test whether the share of marriages by women aged 18-20 is strictly larger in states with a lower age of non-consent. Finally, since the entire distribution must sum to one, we are interested in whether the fraction of marriages occurring to women aged 21 and higher is larger in states where 21 is the age of consent than in states with 18 as the age of consent.

Treating these age groups as discrete bins, the data on age of marriage in Figure 3a may be thought of as a set of binomial distributions. We report a set of pairwise tests of the equality of proportions across legal regimes, for different age bins. Since we have large samples, the binomial distribution is well approximated by the normal distribution, which implies that the

differences are also approximately normal. The difference statistics have a  $z$  distribution.<sup>13</sup>

Table 2 presents the results of tests for the differences across the two sets of states represented by particular age ranges in 1950. In Appendix Figure 1, we show the distribution of marriage ages in age bins that correspond to the test we are conducting.<sup>14</sup> The upper panel of the table confirms what is evident in Figure 3a: there is a statistically significant higher proportion of marriages to women aged 18-20 (and, specifically to women aged 18) in states with a lower legal non-consent age of marriage.

The results further show that this difference across the two sets of distributions at ages 18-20 is offset entirely by a difference in the relative prevalence of marriages to women aged 21 and older; there is no difference across the states in the incidence of marriage among women less than 18. The evidence in this table suggests that in 1950, more stringent minimum age of marriage laws led some young women to delay their marriages not only until the age permitted by the law, but beyond. The bottom panel of the table shows very similar results for men (based on the distributions in Appendix Figure 1b), although the estimated effects are much smaller, probably because of the greater tendency of men to marry later in life.

#### *Census Data Estimates of Age of Marriage Distributions*

The evidence from contemporaneous Vital Statistics evidence suggests that higher age of marriage laws generated significant reductions in young marriage and a corresponding delay in the age of first marriage. As noted above, a second source of data that enables analysis of the effect of marriage laws is retrospective data on marriage from the decennial Censuses. We present results for marriages in the 1950s using retrospective information from the 5% public use micro sample of the 1980 Census.<sup>15</sup> To do so, we assume that a person's state of birth is the same as their state of marriage.

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<sup>13</sup> Note, it is possible to test the equality of any pair of distributions, collapsed or not, using discrete goodness of fit tests. In such tests, the role of each age in causing a rejection of equality is less transparent than in the straightforward tests we conduct. Moreover, the effect of marriage laws that we hypothesize has no predictions about differences in the incidence of marriage at *each particular age* above the relevant threshold. The tests we conduct thus test directly for the relationships that are most clearly predicted.

<sup>14</sup> To conserve space we do not present these modified distributions for all of the figures in the table. They are available from the authors upon request.

<sup>15</sup> We find essentially identical results in the 1960 and 1970 1% public use Census files. We present only the results from the 1980 Census which is larger than the other Censuses and also provides retrospective information about marriages in both the 1950s and 1970s.

As shown in Figures 4a-4d, we document large, surprising differences between the results from the Census versus the Vital Statistics. Consider first the age distribution of marriages in 1950 as estimated in the Census.<sup>16</sup> Figure 4a compares the distribution of age at first marriage for women in 1950 in the 15 states where the age of marriage without parental consent was 18.<sup>17</sup> For ease of comparability, the figure reproduces the distribution of age of marriage in the Vital Statistics, presented earlier in Figure 3a. It is important to stress that these Census results are for the same set of states and, putatively, for the same set of marriages shown in Figure 3a.

In Figure 4a, the solid line shows the data from the 1980 Census while the dashed line shows Vital Statistics data from the same set of states. The sharp spike in age 18 marriage in the Vital Statistics data is entirely absent from the Census data. Also surprising is the fact that the Census shows higher marriage rates at earlier ages. From age 19 onward, the Census and Vital Statistics data lie on top of each other and look quite similar. The discrepancy in early marriages is quite large, with a six point difference in marriage rates at age 18 between the two data sets. Indeed, the discrepancy may be even larger than it appears if the retrospective Census data underreports early marriages.

Figure 4b shows a similar comparison for the 4 states in 1950 where the age of marriage without consent was 21 for women. Again, the Census data shows a much higher incidence of early marriages among all marriages occurring in 1950 than does the Vital Statistics data. Vital Statistics shows a peak at age 21 which is totally absent in the Census data.

The difference between Census and Vital Statistics estimates is evident for men as well. Figure 4c shows less of a discrepancy between data sources in states with age of consent less than 21. Even so, there is a spike in the Vital Statistics at 21, and Census data show a higher prevalence of marriage at younger ages. Figure 4d compares the distribution of age at first marriage for men in 1950 in states where the legal age of marriage without parental consent was 21. The Census data does not show the spike at age 21 found in the Vital Statistics. Like the women's data, the Census shows a higher incidence of younger marriages among all men who marry; for ages

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<sup>16</sup> As noted above, we have the age of first marriage data from Vital Statistics available within states for several years in the 1940s as well as in 1950. We have compared Census and Vital Statistics for these years as well and see the same pattern of discrepancy as are shown here for 1950.

<sup>17</sup> For consistency, the Census data in Figures 4a-4d are based only on those states where Vital Statistics data are also available. The overall number of marriages in the Census and Vital statistics in these states is

greater than 22, the Census and Vital Statistics data are identical.

In Table 3 we test formally for the difference in the distributions shown in Figure 4. As before, we conduct simple pairwise tests of the difference in the probability distributions across different age bins. The difference estimates in the table are highly significant, and confirm what it is clear in the graphs. Among women marrying in 1950 in states that permit marriage without consent at age 18, the age of marriage reported retrospectively by these women to the Census are significantly lower relative to the age of marriage those same women reported at the time of marriage. Specifically, retrospective Census data imply that the share of young marriages (those to women 17 or less) was 8.8 percentage points higher than implied by the Vital Statistics data, which is an 80 percent higher prevalence of younger marriages. Both at the legal marriage age of 18 and older ages, retrospective Census data suggest a statistically significant and smaller prevalence of marriage. The effect is especially pronounced exactly at age 18, where the 5.8 percentage point difference in stated prevalence is more than 30 percent lower than the Vital Statistics reports.

The second panel of the table compares the two sets of reports for women getting married in 1950 in states with a non-consent age of 21. The discrepancies are strongly statistically significant and show the same patterns. Retrospective reports indicate a 9.4 percentage point higher incidence of marriage at ages less than the non-consent age than is implied by the Vital Statistics contemporaneous reports. This represents a 20 percent differential. Like the results from states with lower minimum marriage ages, the discrepancy between the contemporaneous and retrospective reports seems to come from both a lower likelihood of marriage at the legal age of 21 and at higher ages. Indeed, the discrepancy between the prevalence marriages at ages greater than 21 between the two sets of data is especially striking in this comparison.

In the bottom two panels of the table, we present the results for contemporaneous and retrospective reported age of marriage for men getting married in 1950 in the different legal regimes. For men, the two sets of states are those with a marriage non-consent age of 21, and states with non-consent ages of 18, 19 or 20. The patterns for men are essentially the same as for women, if slightly less pronounced. The age of marriage reported retrospectively by men to the Census is significantly lower relative to ages reported by this same cohort on Vital Statistics marriage certificates at the time of marriage.

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not identical. We adjust for this difference in the probability distribution function.

The differences in inference between the Vital Statistics and Census reports about marriage are striking. The contemporaneous administrative data suggests that marriage laws may have a large effect on marriage behavior, while retrospective information from the same set of men and women suggest substantially more modest effects, if any. What accounts for the differences in these two data sources?

We speculate that the divergence between the retrospective reports and the contemporaneous reports may reflect the fact that age of marriage laws induced some persons to systematically evade or avoid the laws. We focus on two types of possible avoidance. The first possibility is systematic age mis-representation. Specifically, some young people, intent on not delaying their marriages to satisfy their state's minimum age rules, simply lied about their age when filling out marriage certificates. Thirty years later, facing no possible sanction from reporting the truth to the Census Bureau, they honestly reported their actual age at marriage. The second possibility is that teenagers, residing in states with higher age of marriage laws, traveled to marry in states where younger marriages were legal. In this case, state Vital Statistics data, which are based on marriages occurring within a state, would show compliance with the law in the state. On the other hand, Census data, which reports information only about marriage among persons residing in a given state with no restriction on where those persons got married, would reflect non-compliance with the home-state's law if people traveled to legally marry elsewhere. We discuss these two possible mechanisms in the next two sections.

## **5. Systematic Age-Misrepresentation and Differences Across Data Sources**

Especially powerful evidence in support of the possible importance of age mis-representation on marriage certificates is the fact that the “spikes” in the Vital Statistics data occur at the relevant legal ages, and the fact that the distribution of age of marriage in the Census data is generally “thicker” at younger ages. This latter effect is particularly persuasive since, as noted above, one would expect to see under-reporting of younger marriages in the retrospective Census data. In fact, we expect that there probably *is* some under-reporting of younger marriages in the Census, and that our graphs underestimate the true differences between actual age at marriage and reported age on the marriage certificates that feed into Vital Statistics data.

The plausibility of an important role for systematic mis-representation of age is a function of how

easy it was to misrepresent age on a marriage certificate for this generation of young persons. Clearly, if a state required that an individual show a birth certificate, driver's license, or some other document, it would have been harder to evade the law. Misrepresentation should have been easiest when age was self-declared, with no external verification.<sup>18</sup> Common experience today suggests that lying without forged documents is difficult because proof of age is routinely required for many things. But was this true in 1950? In earlier decades, a much larger share of the population did not hold a driver's license, either because they did not drive (especially younger women) or because states did not require people to carry licenses. The use of social security numbers for identification (other than employment) was relatively uncommon and many younger people did not have a social security number. Some in the population (especially black Americans in rural areas) did not even have birth certificates.

We do not have detailed information for 1950, but in 1929 the Russell Sage Foundation commissioned a document specifying detailed marriage regulations in all states in the late 1920s (May, 1929). The first column of Table 4 summarizes the information in this document. In that year, 15 states indicated that information on the marriage certificate had to be certified by the oath of the parties involved, while another 13 states accepted an affidavit (essentially, a signature). Most of the remaining states did not specify that *any* testimony of age be offered, or indicated merely that such testimony could be requested at the clerk's discretion. In short, age was self-reported and certified by the signature or oath of the potential marriage partners.

We collected information on current requirements in all 50 states, and summarize this information in the second column of Table 4. By the mid-2000s, virtually all states required some sort of identification from those applying for marriage licenses, usually in the form of social security numbers or birth certificates. Only a few states still have statutes that require only affidavits, and even these states appear to enforce standard practices that require marriage license applicants to show identification with proof of age.<sup>19</sup>

We attempted to trace the statutory history of policies requiring documentary verification of age

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<sup>18</sup> While it may always be possible to forge such a document, we doubt that many teenagers have the knowledge or capacity for such forgeries.

<sup>19</sup> Our research assistant called at least one county office in each state requiring only an affidavit and asked what he would need to bring with him to apply for a marriage license. In every case, he was told to bring a driver's license or birth certificate. Being somewhat persistent, he responded saying "You know that state law doesn't require this." The response was inevitably an out-of-patience clerk who replied, "You want a marriage license, you bring your driver's license!"

for a marriage license. The complexity and thinness of the documentary record made this a prohibitively time intensive activity to conduct across all states. We therefore selected a set of fourteen geographically and demographically diverse states and tried to determine the date at which these states started to require documentary proof of age to grant marriage licenses. In a few cases we could verify that such requirements were in place before or after a specified date, but could not find the year they were initially implemented. Column 3 of Table 4 provides this information for these 14 states. In all cases except Massachusetts, these “identifying documents” requirements appeared to go into effect sometime after 1960.

In short, our (admittedly fragmentary) evidence suggests that few states in 1950 appeared to require individuals to do more than swear to their stated age in order to receive a marriage license. By 1970, a growing number of states required that documentary proof of age be presented for a license. Lying about one’s age to a county clerk almost surely became more difficult over the time period we study.

Evidence to support this interpretation is evident in the comparison between 1950 and 1970 data. Recall that after 1950, the CDC stopped providing data on the actual pattern of first marriages by age within individual states from marriage certificates; it is not until 1970 that we can plot charts similar to those in Figure 4. When we plot the 1970 data, the discrepancies between Vital Statistics and the Census that were present in the 1950 data largely disappear. Figures 5a through 5d plot an identical set of graphs as Figures 4a through 4d, but are based on 1970 Vital Statistics data and reported marriages in 1970 from the 1980 Census.

Figures 5a and 5b show distributions of age of first marriage for women marrying in 1970 in states with legal ages of marriage without parental consent of 18 and more than 18, respectively. A comparison across the two figures indicates some evidence of more early marriage in the states with the lower legal age limit. Relative to 1950 marriages, however, the discrepancies between the age distributions from the two types of data is remarkably small. The test of differences presented in Table 5 confirms that any difference between the two distributions is statistically significant only at age 18, and even this difference is very small in magnitude. Indeed, in the case of marriages in states with ages other than 18, the two distributions are not statistically different at all.

Figures 5c and 5d show equivalent graphs for men in states where the legal age of marriage

without parental consent less than age 21 or age 21. As with the women, there is some evidence of slightly higher incidence of younger marriage in states with lower legal age limits. These figures do show evidence of a difference between the contemporaneous and retrospective marriage reports. However, the differences are substantially smaller than comparable differences for male marriages in the 1950s.<sup>20</sup>

The tests in Table 5 formally confirm that the differences between the retrospective and the contemporaneous data largely disappear by 1970. This is a time period when it became mechanically harder for prospective brides and grooms to mis-represent their age, strongly suggesting an important role for mis-representation. We next turn to the role of systematic marriage migration.

## 6. **Systematic Marriage Migration as a Method for Avoiding Marriage Laws**

Did young people systematically marry outside their state of residence in order to avoid minimum age of marriage laws in their home state? It is certainly plausible that a couple wishing to get married at a younger age than was legal in their state could “shop around” for a nearby state with a lower minimum marriage age.<sup>21</sup> We call this behavior “marriage migration.” Evidence of selective marriage migration is best seen in the marriage rates for Nevada, which significantly liberalized its marriage laws to eliminate waiting periods and other delaying requirements. For many years, Reno, NV, had a thriving “chapel” business aimed at people seeking a fast marriage, with few questions asked. As a result, marriage rates (which are calculated as number of marriages in the state divided by the relevant population in the state) in Nevada are much higher than in any other state in our data.<sup>22</sup>

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<sup>20</sup> The results in this section imply that comparisons of age of marriage distributions from Census data across states with different regimes would reveal patterns similar comparisons using Vital Statistics. In Appendix Figure 2a we show the female distribution of age of 1950 marriages using Census data from all states whose legal age of marriage without consent was 18 or 21. Appendix Figure 2b shows the same data from the Census for men in 1950. Appendix Figures 3a and 3b repeat this exercise for 1970 marriages. In all cases, the states with lower age laws show somewhat earlier patterns of marriage.

<sup>21</sup> The only two references to this that we could find in the literature are an early paper by Rosenwaike (1967), and Dahl’s (2005) paper. Dahl indicates that in 1968-1969 data there is evidence of marriage migration, showing that women who marry out of state are more likely to marry in less-restrictive states. Unfortunately, the data to do this type of analysis in earlier years is not available.

<sup>22</sup> In 1970, for example, the implied marriage rate in Nevada was 68% for women ages 14-19 and 37% for men, as opposed to an average of 7% and 3%, respectively, in other states with available data. Clearly, these high numbers are due to non-residents marrying inside the state.

Ideally, we would like to look at trends in marriage migration from 1950 onward, but unfortunately the data do not allow this. In the retrospective Census data, we have no information on *where* a person got married, so we must assume throughout that marriages occur in the state of birth.<sup>23</sup> Such evidence as we are able to provide about marriage migration must come from the Vital Statistics.

In the early years, data restrictions in the Vital Statistics limit the scope for analysis. We have access only to the published tables from Vital Statistics in these early years and so cannot compare out-of-state marriage rates across different age categories, which is the ideal way to assess the importance of migration. In addition, the set of reporting states is very limited in the early years. Starting in 1968, however, we have access to the underlying micro-data which indicate both state of residence and state of marriage for brides and grooms. This allows us to look at marriage migration in some detail. We use these data, which start before the numerous law changes of the mid-1970s.

As non-consent ages converged across states, it should have become more difficult to locate a state with a minimum age of marriage lower than that in one's home state. The incentives to migrate in order to marry should have therefore decreased dramatically in the face of such convergence. Of course, there remain some differences across states in the minimum ages for marriage *with* parental consent after the mid-1970s. There might have been some migration to take advantage of this, but this incentive too should have been greatly reduced. We compare marriage migration before and after these legal changes, as a way to investigate the magnitude of marriage migration occurring to avoid restrictive state age-of-marriage laws.

Table 6 provides evidence about the extent to which people married outside their state of residence during the years 1968-71, that is, before convergence in the legal age of marriage. As the first row indicates, between 1968 and 1971, 15.7 percent of all men and 10.3 percent of all women who marry, marry outside their state of residence. Men under the age of 21 are those most likely to be affected by legal age limits. The results show that these men are somewhat less likely to marry outside their state of residence (13.6 percent), while younger women marry away from home at about the same rate as all women (10.6 percent.) If we break this down by age, for younger teens we find relatively higher rates of marriage outside one's state of residence (at times

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<sup>23</sup> In general, one would expect that errors induced by this limitation of the Census data would add noise to the state-specific Census marriage data and smooth it relative to the Vital Statistics data.

exceeding 20 percent), and relatively lower rates among older teens.

Of course, people marry out of their state of residence for many reasons. Most commonly, since marriages are more likely to occur in the bride's home location, the groom may have to travel to the state where the bride or the bride's parents live. For instance, approximately 8 percent of men married in New York in 1970 were not residents of the state, but less than 4 percent of brides were nonresidents.

How many of these young "marriage migrants" might have been seeking to avoid age of marriage laws? As Table 6 indicates, 66.8 percent of young men and 73.7 percent of young women who marry out of state did so in an adjacent state. Among these men, 25.8 percent of them were too young to marry without consent in their own state, but could marry legally in the adjacent state where their marriages actually took place. Among women, this rate is 19.4 percent. Since these persons were all too young to marry in their own state but could legally marry in an adjacent state, it can reasonably be argued that they were all migrating to avoid their home state's minimum marriage age. These marriages constitute only 2.4 percent of all marriages among men under age 21 and only 1.5 percent of all marriages among women under age 21. While this is only an approximate estimate of marriage-related migration (some movers could have gone to non-adjacent states; some going to adjacent states may not have been consciously avoiding the laws, etc.), it suggests that a relatively small share of those under age 21 are likely to be migrating as a way to avoid age of marriage laws.

To further explore the importance of marriage migration, we compare migration in the period before and after age of consent laws converge across states. Figure 6 looks at these patterns. The solid dark line in Figure 6 shows the percentage of younger male migrants who move from more restrictive to less restrictive states, as classified by 1968 laws. The denominator is the number of men under age 21 who live in a state where the 1968 age of consent for marriage is 21 but who marry out of state; this is the number of 'marriage migrants' who are too young to marry in historically restrictive states. The numerator is the number of these men who marry in a state where the 1968 age of consent law would have allowed them to marry legally. The ratio represents the share of younger marriage migrants who could plausibly be avoiding the law, *if the 1968 laws were still in effect*. We show this percentage for all years from 1968 to 1979, using the 1968 state laws to define restrictive and less restrictive states. If marriage migration is important, there should be more movement in the late 1960s between these states (when the restrictions were

actually in place) than in the late 1970s (when almost all states had adopted age 18 as the legal age for marriage without parental consent). The dashed line shows the same data for women under age 21. Both of these lines decline during the period when marriage consent laws converge.<sup>24</sup>

As one final check on the extent of marriage migration prior to convergence in age-of-marriage laws, we estimate difference-in-difference regressions. Our sample consists of all marriages among men (women) under age 25 in the periods 1968-71 and 1976-79. The dependent variable is a binary variable which denotes whether the man (woman) migrates to a state where the male (female) non-consent law is less than age 21 in 1968. We difference between the early and late period, and between men younger than age 21 and those ages 21-25. This implicitly compares changes over time (before and after the laws bind) in migration rates to states with historically lower non-consent laws among men who are of an age to be affected by these laws versus changes over time in migration rates among men who are too old to be affected.

We find that there was a statistically significant 1.8 percent higher incidence of marriages among younger men in less restrictive states in the early period than in the late period. This is quite consistent with our estimate of marriage migration in Table 6, suggesting a relatively small (but significant) marriage migration effect before the laws converge. Similar estimates among women find slightly larger effects. We estimate a statistically significant 2.9 percent greater rate of marriage among younger women in less restrictive states in the earlier period than in the later period.

In short, we find clear evidence of migration to states with less restrictive age of marriage laws among those who marry before age 21 in the period when there are significant cross-state differences in these laws. “Marriage migration” appears to be regularly used as a way to avoid state age of marriage laws. The magnitude of this effect is relatively small, however, and seems to have affected only somewhere between 1 and 3 percent of all younger marriages. Unfortunately, we can say nothing about the trend over time in legal avoidance through marriage migration before the late 1960s, but we strongly suspect the ability of teens to go out of state to avoid marriage laws would have been no greater and probably smaller in earlier years. If we take

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<sup>24</sup> If we redo Figure 6 using age of marriage with parental consent (rather than age of nonconsent), we find a decline among men but no decline among women in the propensity to migrate to a state with a lower age of nonconsent. The age of parental consent laws change less over this period and fewer marriages are affected by them.

our estimate of marriage migration from the 1970s as a maximal estimate of this phenomenon in 1950, it will explain less than half of the discrepancy between Census and Vital Statistics data in 1950, suggesting that *both* migration and misrepresentation were occurring in this year.

## 7. **Alternative Explanations for Differences Across Surveys**

In the preceding section, we have explored two explanations associated with systematic attempts to evade minimum age of marriage laws for why Census and Vital Statistics results might differ. Could more mechanical explanations, related to with the difference in the construction of the two datasets account for these discrepancies instead? We explore this question here.

One possibility is the role of recall error in Census marriage data. Since marriage data in the Census is retrospective, it might be especially sensitive to recall error. But our focus on young marriage suggests that there would be an undercount of younger marriages in the Census, both because people forget and because they may be less likely to report an early marriage of relatively brief duration. Moreover, the Census form explicitly instructs respondents to discount annulled marriages. This too would lead the Census to undercount marriages at young ages.

Since both our 1950 and 1970 Census numbers comes from the same 1980 Census, retrospective recall problems may be worse for those who married in 1950 than those who married in 1970. There would thus be more noise in the 1950 marriage data from the 1980 Census. If the mis-measurement is classical, it may flatten the distribution of marriage ages in the Census. We do not believe that this is a problem because we have duplicated the 1950 results using the 1960 and 1970 Census and find virtually identical results. Furthermore, as we have already noted, if the mis-measurement is due to selective editing of annulled or short-lived young marriages, it would tend to understate young marriages. We find the opposite discrepancy. In addition, we see no reason why recall problems would be largest at exactly the ages where legal age limits bind. The fact that our primary differences between the Census and the Vital Statistics data occur at these specific ages is persuasive evidence that this difference is not caused by recall bias.

A second possibility is that the Census results are faulty because we have to assume that state of

birth is the same as state of marriage.<sup>25</sup> This assumption could cause several problems. If people moved randomly prior to marriage, so that the errors we make in assigning people's state of marriage are random, this would tend to smooth the Census data relative to Vital Statistics data. However, we would expect this to be a larger problem in 1970, since income levels were higher and families were more mobile in 1970 than in 1950. The fact that the discrepancies between the two data series go away rather than increase between 1950 and 1970 suggests that classification errors caused by random mobility is not likely to be a major cause of changes over these years in these two data sets. Note we distinguish this point from the systematic migration to which we devote much attention above.

Two final points about the possible importance of mechanical differences between the surveys bears some discussion. In the Census our estimates of people's age at marriage are based on their reports about the quarter and year they married, rather than the exact day. We assess the sensitivity of our results to any resulting imprecision in the estimated age of marriage, and find that our results are robust to these tests.<sup>26</sup> The other issue is the possibility of attrition bias in the Census. Some respondents will have died or emigrated from the United States in the years since their marriage. Census data contain no marriage information for these missing persons. Notice, however, that if these missing persons are as likely to have made one marriage decision as another, it is not clear that their absence biases the Census estimates in any particular direction. The longer the retrospective period of recall, the greater the attrition this will produce in the Census marriage reports. Since we are looking at teenage marriages reported no more than 30 years later, we assume this is not a major problem in our data.

In summary, we think that differences between the distributions found in the 1950s between the Census and Vital Statistics derive from a combination of age-misrepresentation and systematic migration. Differences in survey construction, in our view, are responsible for very little, if any, of the observed age of marriage differentials.

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<sup>25</sup> We only include people in our Census sample who report being born in the U.S. This excludes U.S. marriages among those who were born outside the U.S. but immigrate prior to marriage; these immigrant marriages are included in the Vital Statistics data. We ignore this discrepancy, given the years we are focusing on are years when immigration into the U.S. is relatively low.

<sup>26</sup> Specifically, we take the Vital Statistics data that is available in electronic form for the 1970s and estimate age of marriage in precisely the same way as the Census would (thereby causing some imprecision in the estimated age.) We compare the distribution of actual age at marriage (which is known precisely in the Vital Statistics) with the less precise Census-like calculation, and find that this makes virtually no

## 8. Summary of the Effect of Age of Marriage Laws: Avoidance and Actual Delayed Marriage

We return to the substantive question with which the paper began: How much actual delay in marriage did marriage laws cause? Despite the fact that some young persons appear to have systematically avoided marriage laws, the generally leftward shift in the age of marriage distributions in states with younger legal ages of marriage, evident in both Vital Statistics and the Census, suggests that more stringent marriage laws may have indeed caused some people to delay their marriages. Our earlier results indicated that systematic mis-representation of age seems to have been the more important route by which people avoided the effect of marriage laws. Since this problem appears to have affected marriage certificate data in the Vital Statistics, we use data from the Census to measure how actual age of marriage was affected by marriage laws.

### *Census Results*

In the Census we have information on marriage at each age and in each year. This allows us to estimate age-specific regressions, which is the most desirable method for assessing the importance of marriage laws on actual marriage ages. We estimate the following equation:

$$Y_{gst}^i(a) = \beta_0 + \beta_1 P_{gst}(a) + \Gamma_b + \Gamma_s + \varepsilon_{gst}^i \quad (2)$$

where  $g$  indexes gender,  $s$  indexes state, and  $t$  denotes birth cohort within the Census. In (2), the vectors  $\Gamma_b$  and  $\Gamma_s$  are, respectively, birth cohort and state fixed effects; and  $\varepsilon_{gst}^i$  is a random error term. The binary outcome variable  $Y_{gst}^i$  indicates whether an individual  $i$  of a given gender, state and birth cohort is ever married by age  $a$ ;  $P_{gst}$  is a binary variable indicating whether, in a given year and state, the person was never able to legally marry before turning age  $a$ . So, for example, to assess the impact of non-consent laws on marriage before age 18,  $Y$  measures whether the individual was ever married by age 17,  $P_{gst}$  equals 1 if there was no time in the years before they turned 18 that the marriage laws allowed the person to legally marry. The coefficient  $\beta_1$  measures how much a legal age constraint against marriage lowered the

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difference to the age of marriage distribution.

likelihood of marrying. The inclusion of state and cohort effects in (2) means that  $\beta_1$  is identified from changes in marriage laws within states and across cohorts.

Figures 1a and 1b show that only a few legal changes occur over this time period with any frequency. For identification purposes, we focus on the most frequent legal changes that occur within multiple states. Because we have information on a full range of ages in the Census data, we can look at the effect of changes in age of marriage with and without parental consent.<sup>27</sup>

Table 7 presents the results from estimating equation (2). The top panel shows results for men and the bottom panel shows results for women. The first row of the top panel shows the estimate of the effect of laws that do not allow men to marry without parental consent before the age of 21 on the probability of being married by age 20. The results suggest that there is a significant negative effect of these laws on the cumulative probability of marriage at a younger age. The magnitude of the coefficient can be estimated by dividing it by the share of men married by age 20, which is 0.235 in 1970.<sup>28</sup> This suggests that the likelihood of being married by age 20 is reduced by 3.2 percent in a state that has a legal marriage age of 21 (without consent) versus a state with a lower legal marriage age. While statistically significant, this is not a large effect.

We also look at the effect of changing the age of marriage with parental consent. For men, a significant number of states reduced this minimum age from 18 to 16 during the time period studied in the regressions. Hence, we estimate the effect of not being able to marry without consent before age 18 on the probability of marriage by age 17. The point estimate is unexpectedly positive, but small and statistically insignificant. The implication is that minimum marriage ages with parental consent had little effect on men. This is not surprising, given that few men marry before age 17 (only 2.1 percent in 1970).

The bottom panel shows similar estimates for women. When the legal age of marriage without

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<sup>27</sup> We experimented with including controls for adjacent state laws, as a way to control for potential migration effects. There were two problems with this approach. First, adjacent and own state laws often changed at the same time and we had limited identification on the adjacent laws variable; for instance, we couldn't identify any adjacent effect on women's age of marriage without consent. Second, we could not directly compare the adjacent state coefficients with the own-state coefficients without dropping state fixed effects. This is because there was no way to control for adjacent state fixed effects, and so this coefficient reflected not just the effect of changes over time within adjacent states, but also reflected cross-sectional differences among adjacent states. This led to somewhat odd results in a few cases. In the end, we did not find this effort very informative and do not present these results.

parental consent was 20 or 21 among women, there is a statistically significant and negative effect on younger marriages. The estimate suggests that the percent of women married by age 18 in 1970 is 3.6 percent lower in states that do not allow marriage without consent before age 19.

We also look at the effect of age limitations on marriage with parental consent for women. For women, we look at the effect of allowing women to marry with parental consent at age 16 versus at younger ages. The results indicate that imposing a 16-year-old age of consent reduces marriage among women age 15 or younger. This effect is of the expected sign and highly significant. Relative to the mean number of marriages at age 15 or younger, our estimate suggests that the legal restriction is associated with a 15.3 percent decline in young marriages among women. It is worth noting, however, that this represents a relatively large increase on a very small base; only 2.4 percent of women marry by age 15 in 1970. In short, the legal age of marriage with parental consent appears to have had a relatively large effect on the small share of women who considered early marriage.<sup>29</sup>

Our estimates suggest that age of marriage laws did impact the marriage choices of the young adult population, with larger effects on women than on men. Changes in the age of marriage without parental consent have a significant but not particularly large effect, with about a 2 to 3 percent change in the probability of marriage.

#### *Comparable Vital Statistics Estimates*

It is instructive to compare these estimates from the Census to the estimates one would get from the Vital Statistics data, if the contamination in marriage certificate information because of the systematic age mis-representation were unknown or naïvely ignored.

Unfortunately, as discussed above, we are severely constrained in the types of models we can estimate because of the form in which Vital Statistics information is available in early years. Nonetheless, we use Vital Stats data from 1951 through 1979, and conduct analyses which exploit changes over time in minimum age of marriage laws within states, roughly comparable to the models we run for the Census data. Our simple panel models control for state and year fixed

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<sup>28</sup> This is the average including data from all states.

<sup>29</sup> In this respect, our results agree closely with Dahl (2005), who focuses only on age of marriage with consent laws on women.

effects. We estimate the effects of changes in minimum age laws by comparing the average marriage rate during the three years prior to the legal change with the average marriage rate during the three years after the legal change.<sup>30</sup>

We focus on the most common changes in age of marriage without parental consent: the reduction in age of marriage without consent among men from 21 to 18 (which occurs in 27 states), and among women from 21 to 18 (which occurs in 7 states). Unfortunately, as noted above, we do not have age-specific marriage rates by state, but must estimate the effect of these legal changes on aggregate marriage rates age 19 and below. Both legal changes, because they involved lowering the age of marriage without consent, should have resulted in a significant increase in marriages below age 19 among men and women.<sup>31</sup>

In both cases, we estimate significant, positive, and relatively large effects on marriage rates in the Vital Statistics data as a result of these legal changes. The change in the age of marriage without consent from 21 to 18 is associated with a 6.8 percent increase in the rate of marriage for men under age 19 and a 16.5 percent increase in the rate of marriage for women under age 19. If we assume that this effect is driven exclusively by changes among 18 and 19-year-old men and women, then the legal reform raised the 18 and 19-year old marriage rates by 7.6 percent for men and 23.5 percent for women.

### *Discussion*

Although the two sets of estimates discussed in this section are not perfectly comparable, these results do give a sense of the massively different conclusions a researcher might be led to draw about the actual effect of marriage laws on marriage delay, if sufficient attention were not paid to

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<sup>30</sup> The Vital Statistics data provides us with information on the number of marriages among men and women below age 19 in a state. To produce a gender-specific marriage rate, we divide this by the population of men or women ages 14-19 in each state. We do not have state population numbers for these specific age groups by gender in all states in all years, but produce them with an interpolation of the data available. For instance, in most years we know state population by gender, ages 5-17 and 18-20. We estimate the share of the male or female population that is 14-17 in the first age group, using information in the nearest decennial Census about the age distribution of these cohorts. We do the same to estimate the population 18-19 in the second age group. We add these two estimates to get a 14-19 population estimate by gender and by state.

<sup>31</sup> Given changes in the age of marriage with parental consent over the 1950-1980 time period, we would like to estimate these effects as well. Here our limited data create serious problems, since all of these legal changes occur among lower ages than age 19 (for instance in 8 states the age of marriage with consent among women rises from 16 to 18 over this time period). Hence these legal changes should have limited

the nature and consequence of systematic avoidance that we have highlighted. Our sense is that most researchers would have expected Vital Statistics data to more accurately reflect the effect of marriage laws on delayed marriage, but this interpretation ignores the two types of systematic avoidance that we have noted.<sup>32</sup> Papers studying the changing age of first marriage using historical Vital Statistics marriage data, especially any paper either studying state marriage laws directly or using state laws as instrumental variables are likely to produce estimated effects which overstate the impact of those laws on delayed marriage, and consequently produce estimates of the effect of early marriage on other outcomes which are downwards biased.

Our results suggest a broader lesson for *all* empirical scholars and especially those wishing to use information about laws as instrumental variables in their analyses. What we have found in the case of marriage laws is likely true for other behavior and laws: a law changes behavior among both compliers and non-compliers. Non-compliers – that is, persons whose actual behavior is *not* changed by the law – have an incentive to report information to administrative bodies in such a way as to suggest that it has. Laws will be found to generate a “stronger” first stage effect than is justified by the law’s direct effect on the actual behavior of interest. These biases, depending on the question being addressed, may be especially pronounced with administrative data.<sup>33</sup>

When is the quality of administrative data and results about the effect of laws likely to be an especially important concern? Again, our specific example may offer some insights. The relatively greater accuracy of the Vital Statistics data on age of marriage in 1970, when age had to be proved by the presentation of some official documentation, compared to 1950 when only sworn testimony to a county clerk sufficed, suggests that greater effectiveness in the monitoring and implementation of legal statutes can dramatically improve the quality of administrative data.

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effects on the aggregate marriage rate between the ages of 14-19.

<sup>32</sup> For instance, O’Connell (1980) benchmarks the accuracy of the retrospective Census data by comparing it to Vital Statistics data. He notes that the CPS reports a ‘more youthful distribution of women by age at first marriage’ than the Vital Statistics in the 1940s and 1950s, while the two are more similar in later years, but he does not pursue this discrepancy.

<sup>33</sup> Examples of the use of administrative data abound in empirical economics. Previous work hinting at some of the issues we have discussed operating in other contexts include the use of administrative data giving the ages at which young men volunteered to join the armed forces in the 1940s and 1950s. Similarly, it has been suggested that the number of children and custody of those children reported in tax filings might have become more inaccurate following the growth in tax benefits accruing to the custodial parents from growth in the Earned Income Tax Credit and the Child Tax Deduction. Finally, differences between reported income and earned income have long been a concern in the study of taxation. Recognizing some of the issues we discuss here, Slemrod (1992) proposes a hierarchy of responses to tax policy and emphasizes that both timing and reporting are likely to be more responsive than actual economic behavior.

Similarly, our evidence about systematic migration underscores the point that in a federalist system, with states enacting particular versions of a given type of law, movement from one state to another to avoid the impact of laws in one's state can both blunt the degree to which a given state's laws affect the intended behavior and simultaneously cause administrative records to incorrectly show exaggerated effects on behavior. This effect has been discussed in other contexts, such as the research on welfare migration (McKinnish, 2007), tax avoidance (Asplund, Friberg and Wilander, 2007), and abortion access (Levine, Kane, Staiger, and Zimmerman, 1999). Greater variance across states in legal statutes is likely to evoke this cross-state migration than situations when state-specific legal regimes are very similar.

In general, the conventional view that administrative data is the standard against which survey data should be compared typically ignores the greater susceptibility of administrative data to the effects of avoidance of the sort we discuss. Administrative data is almost surely better when it is directly and impartially observed (such as collecting actual height/weight information rather than having it self-declared), or when the information is verified as part of the data collection process (such as requesting a birth certificate along with the declaration of age). Administrative data may be better than survey data in some circumstances, but it is important for a researcher to understand the conditions under which the administrative data are collected and verified.

## **9. Conclusions**

In this paper, we study how minimum age of marriage laws affected young people's propensity to delay marriage. We use contemporaneous data from the Vital Statistics marriage certificates and retrospective data from the Census covering the same population. Among marriages occurring in 1950, marriage certificate information suggests that many young people delayed their marriages until an age when they were no long bound by the minimum marriage ages in their state. Interestingly, we find far less evidence of delay in the retrospective Census data about marriage ages for the same population. Even more strikingly, we show that the discrepancy between the Census and Vital Statistic data evident in 1950 marriages is totally absent among marriages occurring 20 years later.

After discussing and rejecting other reasons for the discrepancy, we argue that the data show divergent patterns because of two types of avoidance behavior. Individuals who did not wish to wish to comply with the law – that is, young people who wished to marry despite the restrictive

minimum ages in their states – could avoid the law by: (a) systematically mis-representing their ages on contemporaneous marriage certificate information; or (b) marrying in nearby states which permitted earlier marriage than their state of residence. We present evidence to show that the ability to engage in the first type of avoidance was much harder later in the century, and that the incentive to engage in the second – systematic cross-state migration – was relatively small in the later period. Consistent with this reasoning, we showed that that discrepancy between the two data sources evident in 1950 essentially disappeared by 1970.

We discuss the various implications of our results for how systematic and predictable efforts to evade a law can affect the relative quality of administrative data as compared to survey data, both in the context of the specific question about marriage that we study, and more generally. We also discuss how the naïve use of a given type of data to study the effect of laws, with little attention paid to the agents' efforts to evade the law's effects, can mislead instrumental variables and other estimates, especially and perhaps surprising when administrative data are used.

Finally, although age-of-marriage laws seem to have induced young people to take actions to evade the effect of the laws, we show that the exposure to minimum age of marriage laws *did* lead some young persons to delay their marriage, presumably as state legislatures intended. Overall, however, the behavioral changes induced by the laws seem to have consisted principally of marriage delay among some, and age-misrepresentation among others.

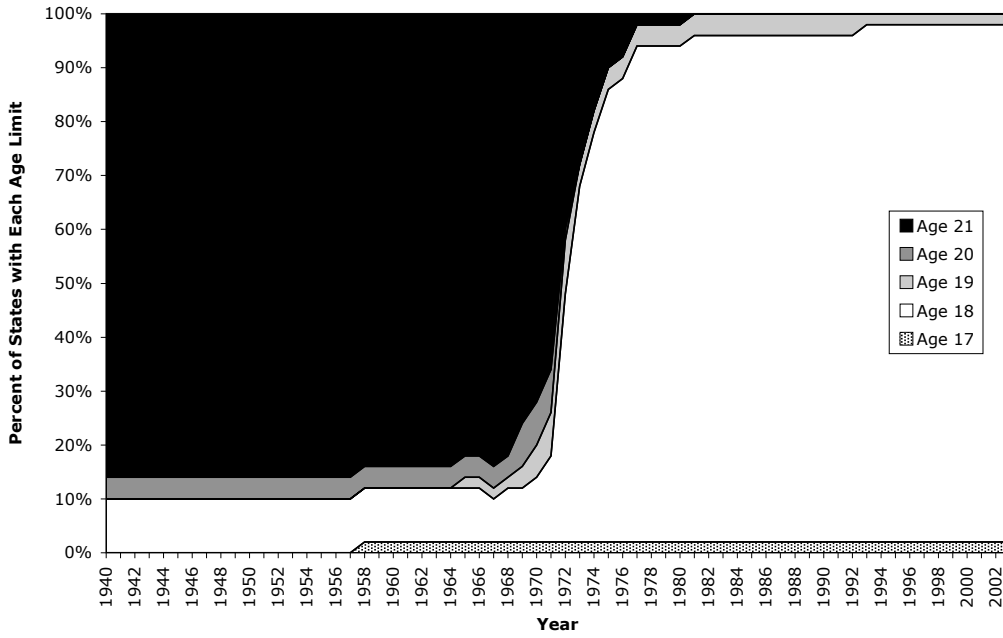
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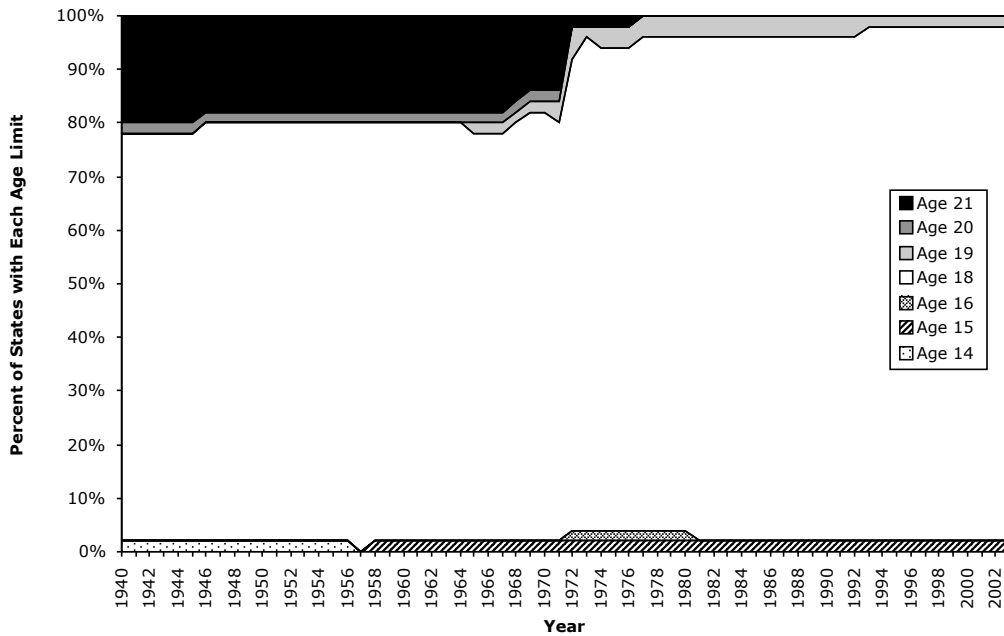
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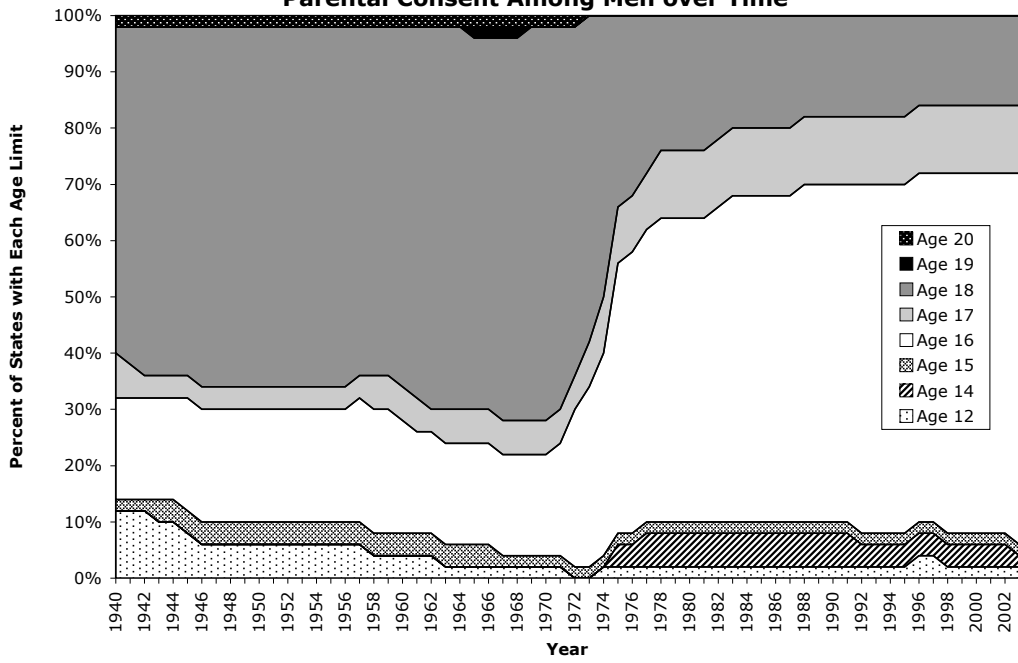
**Figure 1a: State Distribution of the Legal Age of Marriage without Parental Consent Among Men over Time**



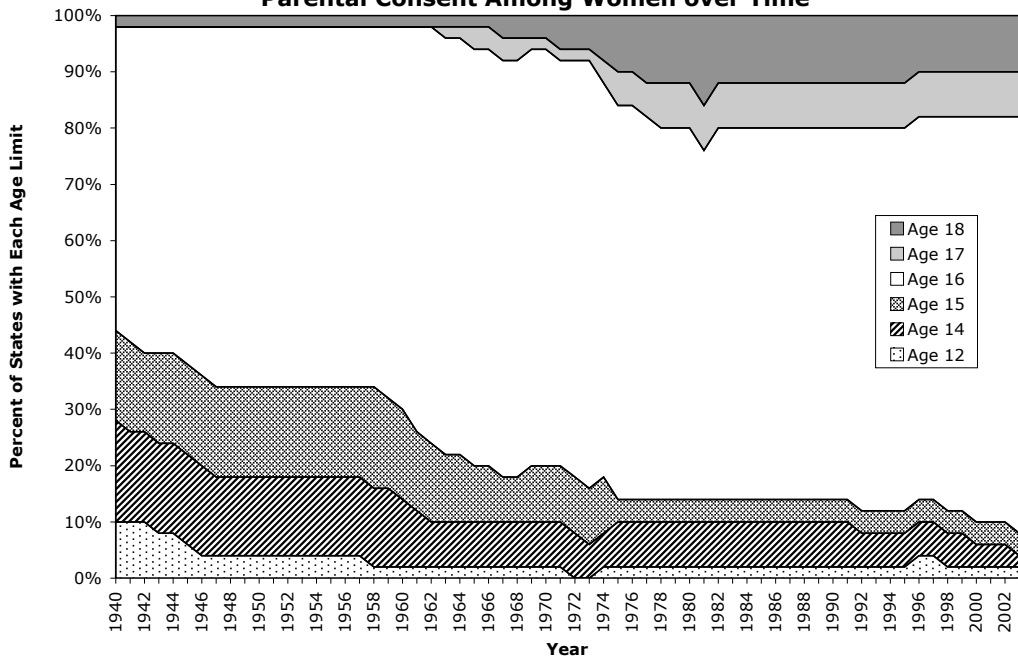
**Figure 1b: State Distribution of the Legal Age of Marriage without Parental Consent Among Women over Time**



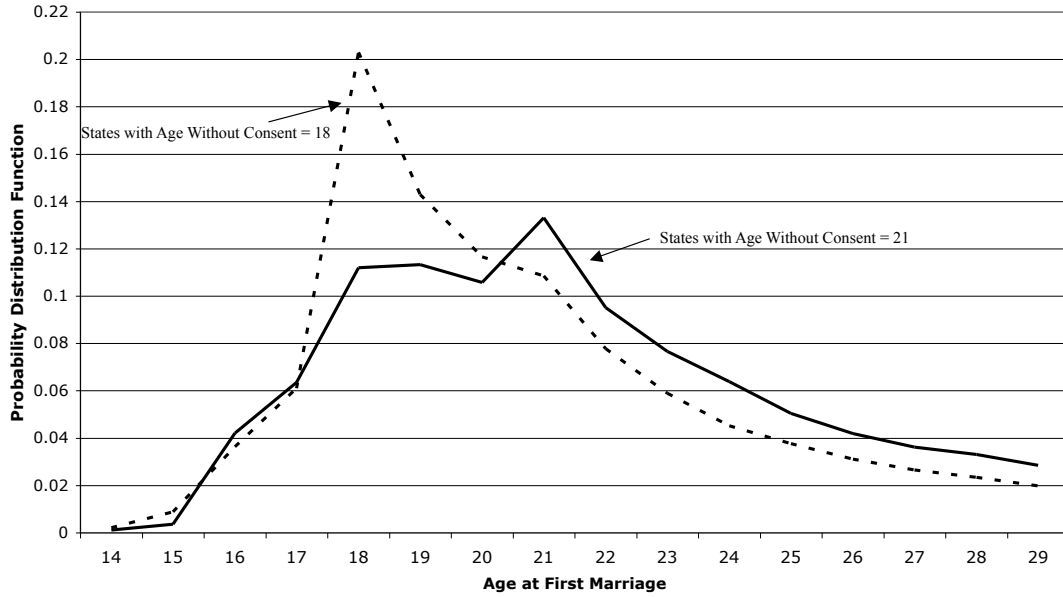
**Figure 2a: State Distribution of the Legal Age of Marriage with Parental Consent Among Men over Time**



**Figure 2b: State Distribution of the Legal Age of Marriage with Parental Consent Among Women over Time**

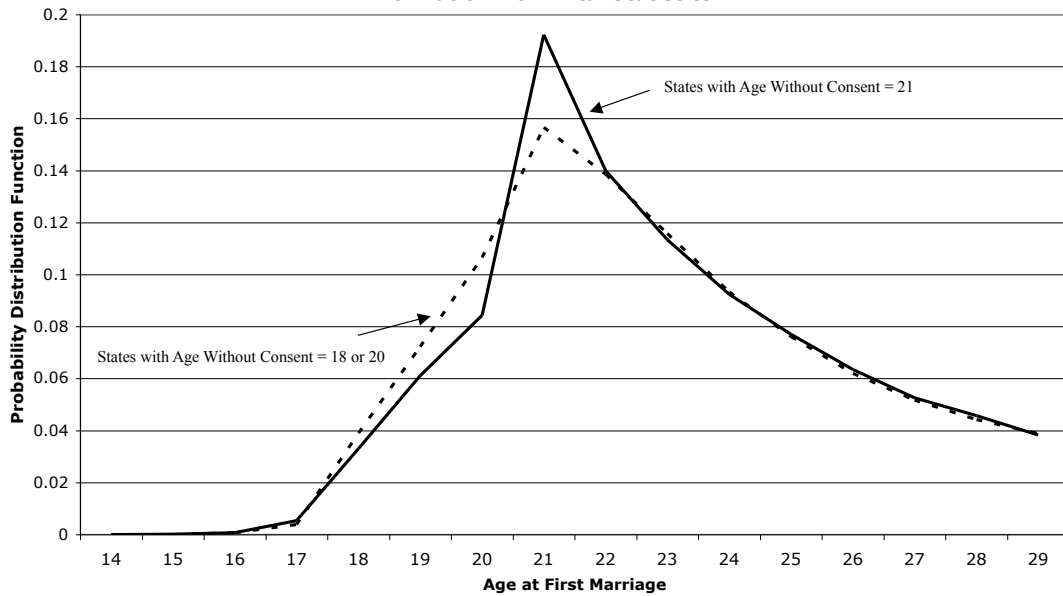


**Figure 3a: Distribution of Age at First Marriage for Women in 1950 by Legal Regime Across States: Data from Contemporaneous Marriage Certificate Information from Vital Statistics**



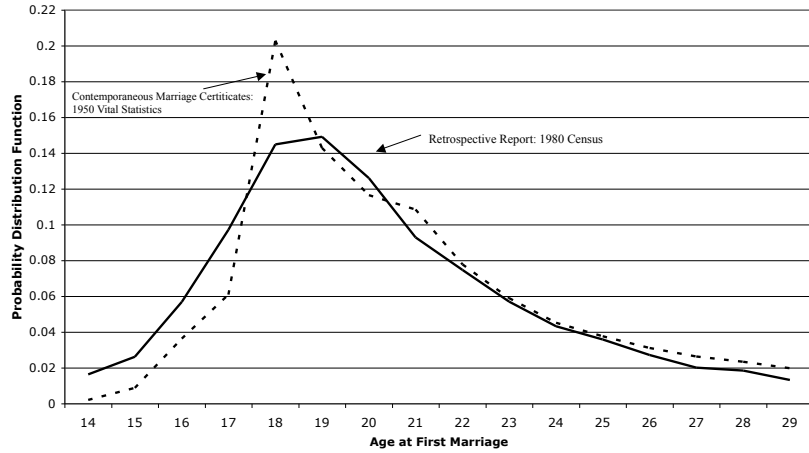
Based on the following 15 states with female non-consent age equal to 18 (DE, ID, IA, KS, ME, MI, MS, MT, NH, ND, OR, SD, TN, VT, WY) and 3 states with female non-consent equal to 21 (CT, FL, NE).

**Figure 3b: Distribution of Age at First Marriage for Men in 1950 by Legal Regime: Data from Contemporaneous Marriage Certificate Information from Vital Statistics**



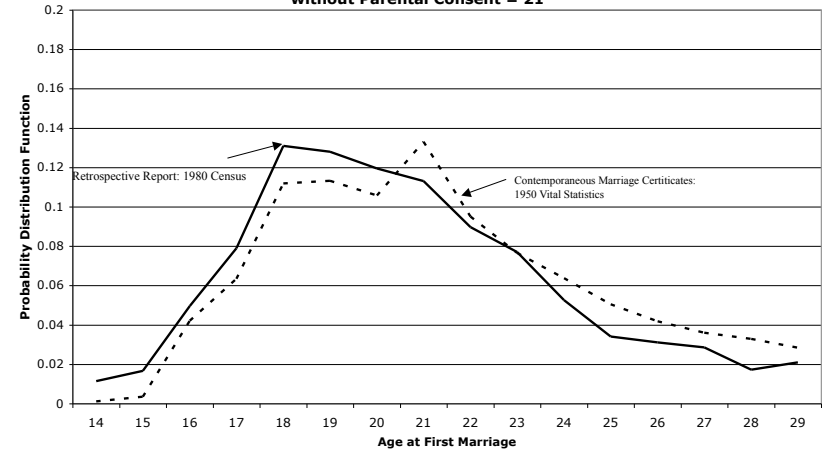
Based on the following 4 states with male non-consent age equal to 18 or 20 (ID, MI, NH, TN) and 14 states with male non-consent equal to 21 (CT, DE, FL, IA, KS, ME, MS, MT, NE, ND, OR, SD, VT, WY).

**Figure 4a: Distributions of Age at First Marriage from Contemporaneous vs Retrospective Reports for Women Marrying in 1950 in States where Age without Parental Consent = 18**



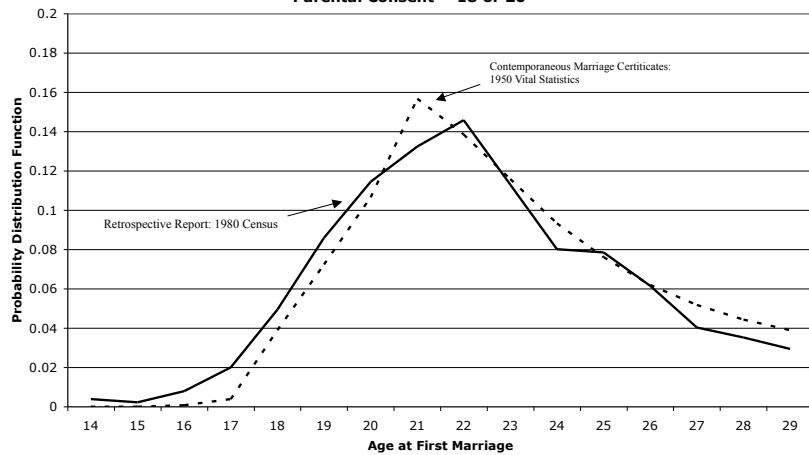
Based on the following 15 states with female non-consent age equal to 18: DE, ID, IA, KS, ME, MI, MS, MT, NH, ND, OR, SD, TN, VT and WY.

**Figure 4b: Distributions of Age at First Marriage from Contemporaneous vs Retrospective Reports for Women Marrying in 1950 in States where Age without Parental Consent = 21**



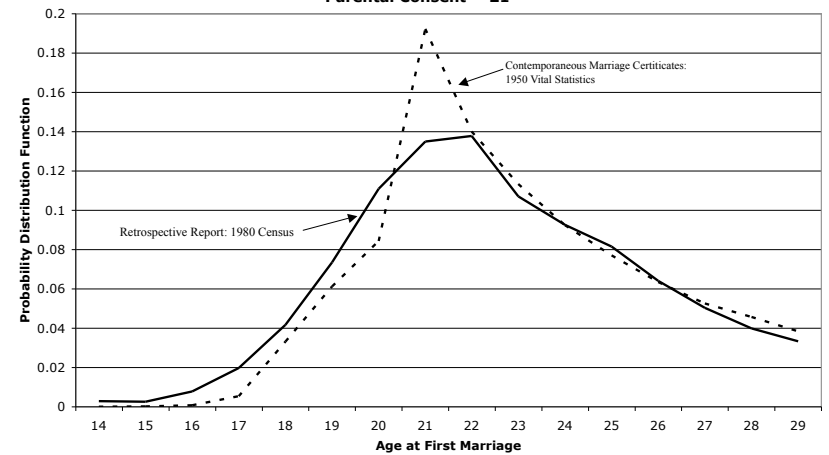
Based on the following 3 states with female non-consent age equal to 21: CT, FL and NE.

**Figure 4c: Distributions of Age at First Marriage from Contemporaneous vs Retrospective Reports for Men Marrying in 1950 in States where Age without Parental Consent = 18 or 20**



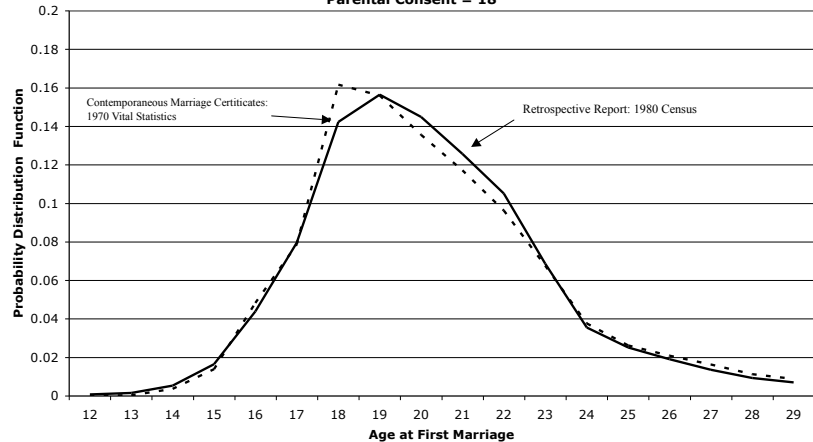
Based on the following 4 states with male non-consent age equal to 18 (ID, TN, MI) or 20 (NH).

**Figure 4d: Distributions of Age at First Marriage from Contemporaneous vs Retrospective Reports for Men Marrying in 1950 in States where Age without Parental Consent = 21**



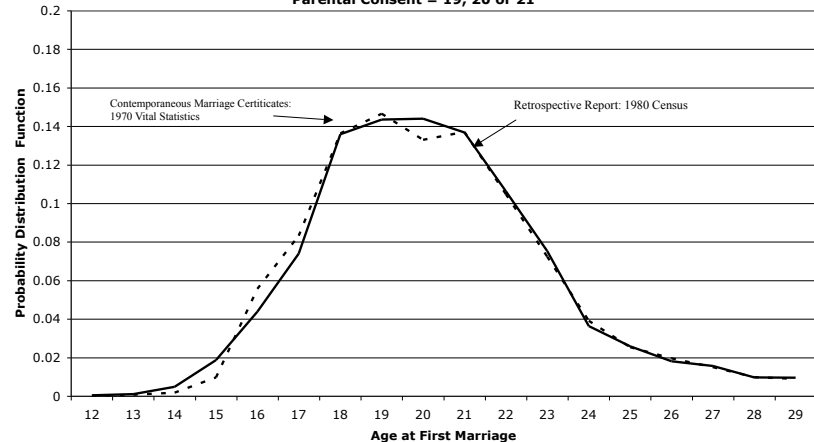
Based on the following 14 states with male non-consent age equal to 21: CT, DE, FL, IA, KS, ME, MS, MT, NE, ND, OR, SD, VT and WY.

**Figure 5a: Distributions of Age at First Marriage from Contemporaneous vs Retrospective Reports for Women Marrying in 1970 in States where Age without Parental Consent = 18**



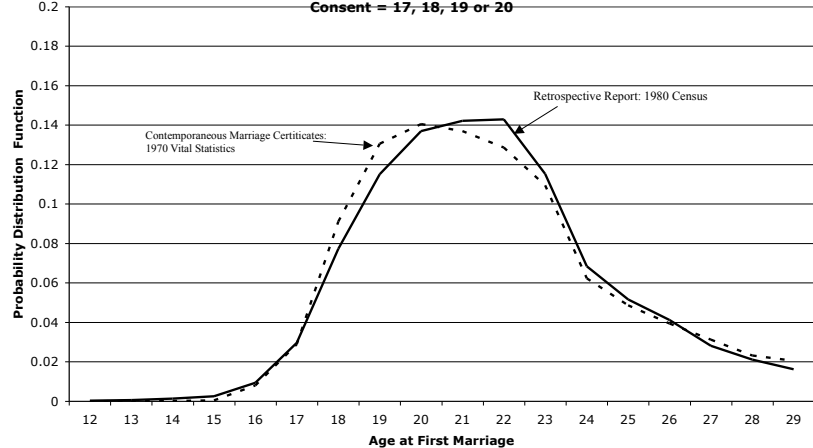
Based on the following 36 states with female non-consent age equal to 18: AK, AR, AL, CA, CO, DE, HI, IA, ID, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, NC, ND, NH, NJ, NV, OH, OR, SC, SD, TN, TX, UT, VT, WA, WI and WY.

**Figure 5b: Distributions of Age at First Marriage from Contemporaneous vs Retrospective Reports for Women Marrying in 1970 in States where Age without Parental Consent = 19, 20 or 21**



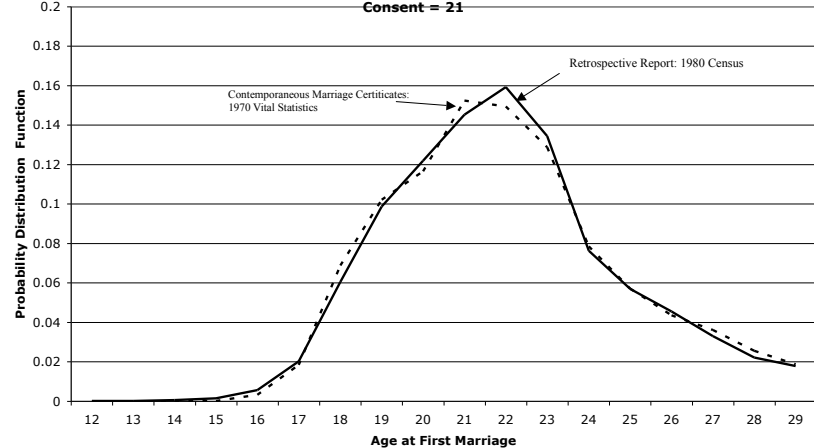
Based on the following 8 states with female non-consent age equal to 19 (GA), 20 (NE) and 21 (CT, FL, PA, RI, VA, WV).

**Figure 5c: Distributions of Age at First Marriage from Contemporaneous vs Retrospective Reports for Men Marrying in 1970 in States where Age without Parental Consent = 17, 18, 19 or 20**



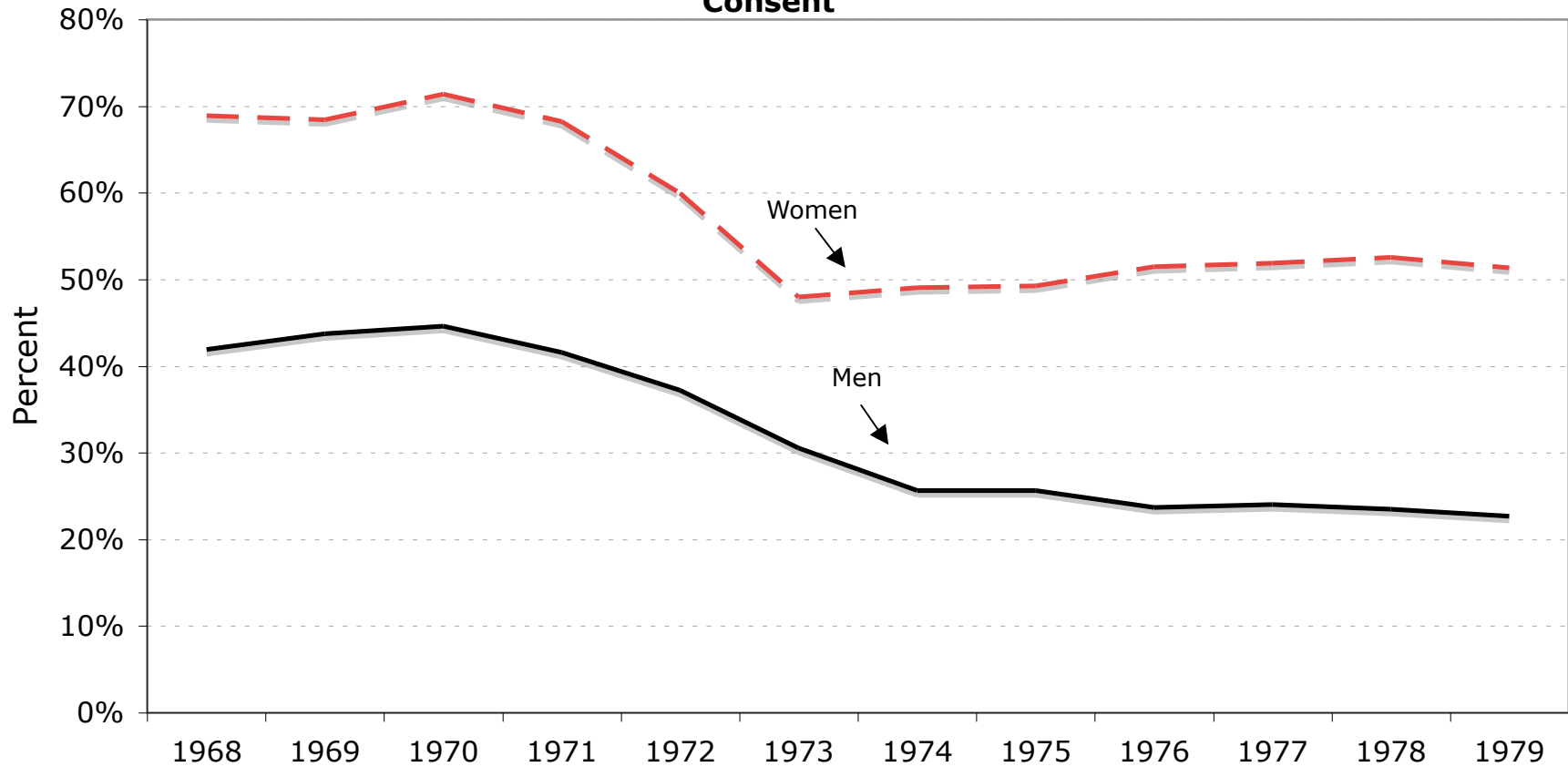
Based on the following 14 states with male non-consent age equal to 17 (MS), 18 (KY, MI, NC, SC, TN, WA), 19 (AK, GA, TX) and 20 (HI, ME, NE, NH).

**Figure 5d: Distributions of Age at First Marriage from Contemporaneous vs Retrospective Reports for Men Marrying in 1970 in States where Age without Parental Consent = 21**



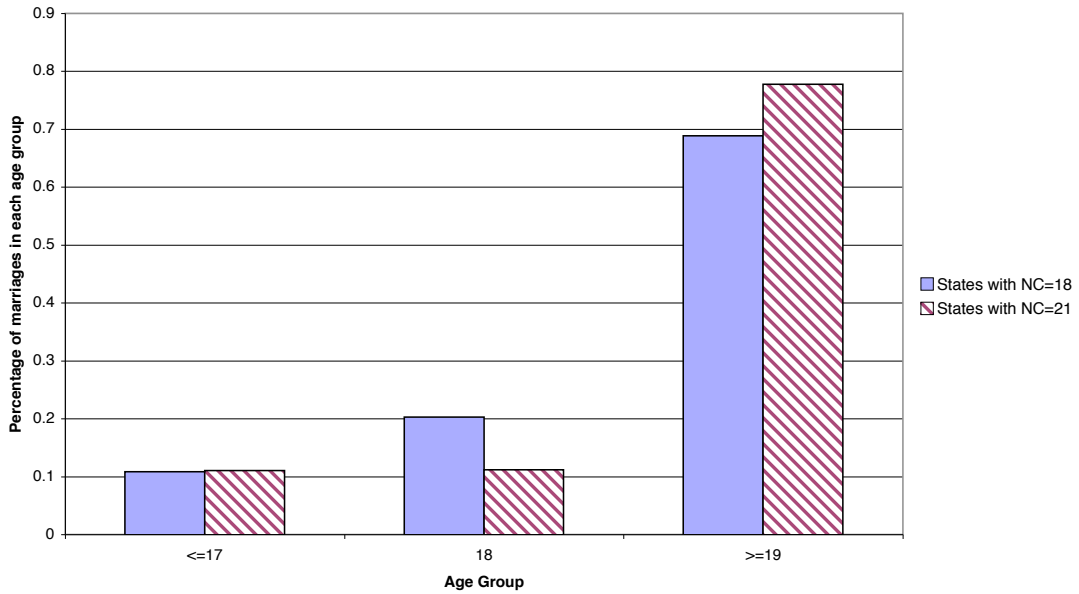
Based on the following 31 states with male non-consent age equal to 21: AL, AR, CA, CO, CT, DE, FL, IA, ID, IL, IN, MA, MD, MN, MO, MT, ND, NJ, NV, KS, OH, OR, PA, RI, SD, UT, VA, VT, WI, WV and WY.

**Figure 6:  
Percentage of Young 'Marriage Migrants' From Restrictive States Who Move to  
Less Restrictive States, Classified by 1968 Laws on Age of Marriage without  
Consent**



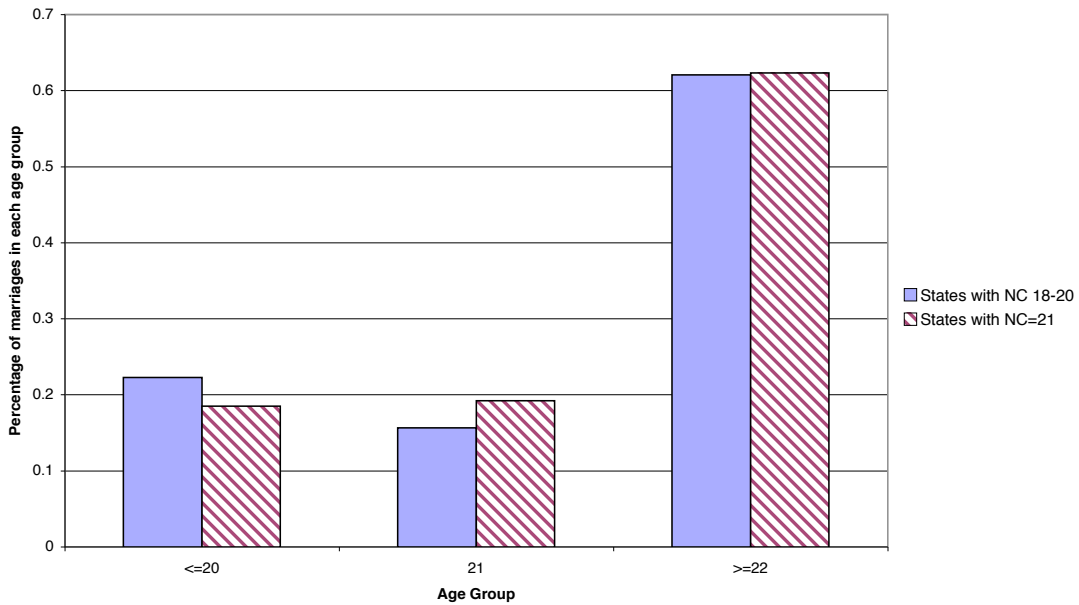
Note: The denominator for the men's (women's) line is men (women) under age 21 who live in a state where the 1968 age of consent law was 21 but who marry outside their home state; the numerator is the number of these 'marriage migrants' who marry in a state where they could legally marry based on 1968 age of consent law. The line thus shows the percent of young marriage migrants from historically more restrictive states who marry in historically less restrictive states. Data from Vital Statistics.

**Appendix Figure 1a: Distribution of Age at First Marriage for Women in 1950 by Legal Regime, Vital Statistics Data, Collapsed Age Groups**



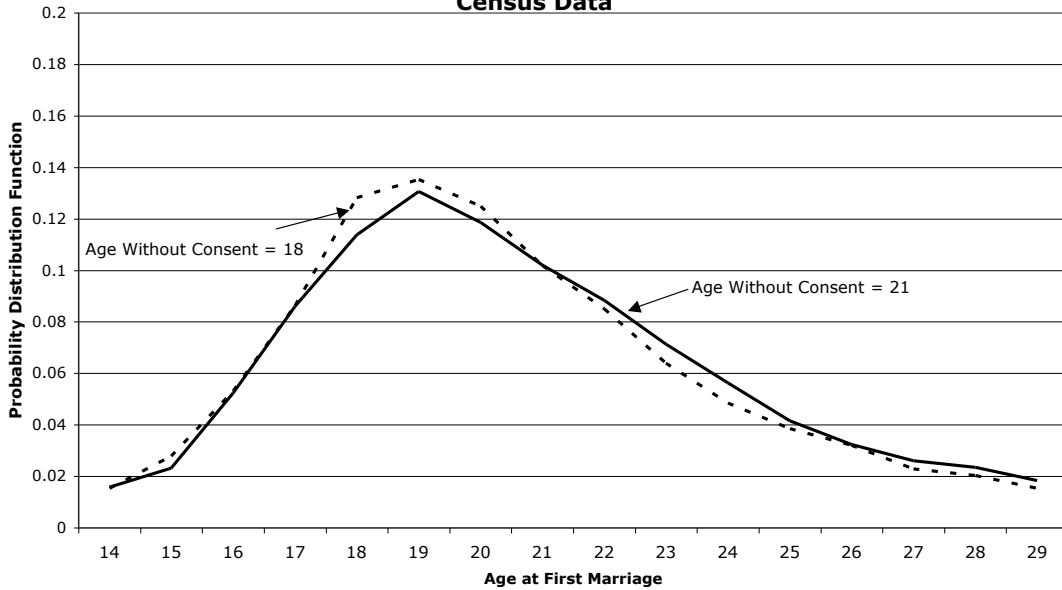
Based on the following 15 states with female non-consent age equal to 18 (DE, ID, IA, KS, ME, MI, MS, MT, NH, ND, OR, SD, TN, VT, WY) and 3 states with female non-consent equal to 21 (CT, FL, NE).

**Appendix Figure 1b: Distribution of Age at First Marriage for Men in 1950 by Legal Regime, Vital Statistics Data, Collapsed Age Groups**



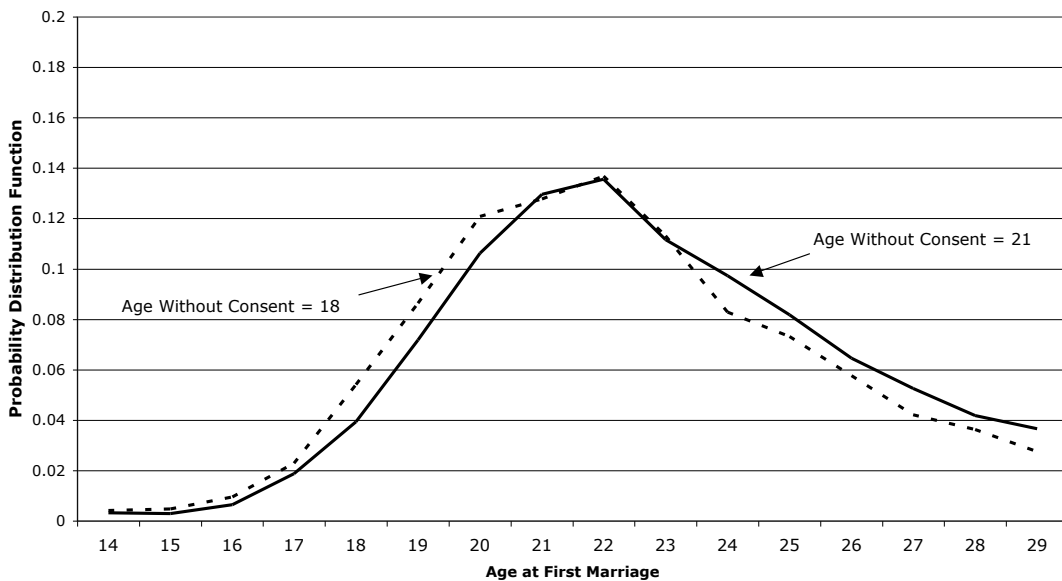
Based on the following 4 states with male non-consent age equal to 18 or 20 (ID, MI, NH, TN) and 14 states with male non-consent equal to 21 (CT, DE, FL, IA, KS, ME, MS, MT, NE, ND, OR, SD, VT, WY).

**Appendix Figure 2a: Distribution of Age at First Marriage for Women in 1950 by Legal Regime Across States: Retrospective Census Data**



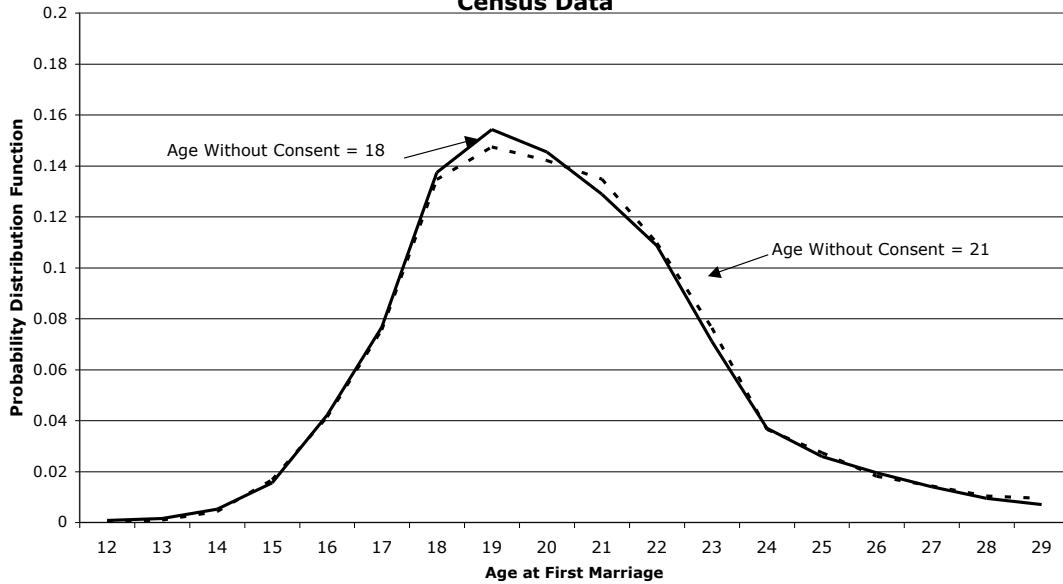
Based on the following 39 states with female no consent age equal to 18 (AL, AK, AZ, AR, CA, CO, DE, GA, ID, IL, IN, IA, KS, ME, MD, MA, MI, MN, MS, MO, MT, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, SD, TN, TX, UT, VT, WA, WI and WY) and 9 states with female no consent equal to 21 (CT, FL, KY, LA, NE, PA, RI, VA and WV).

**Appendix Figure 2b: Distribution of Age at First Marriage for Men in 1950 by Legal Regime Across States: Retrospective Census Data**



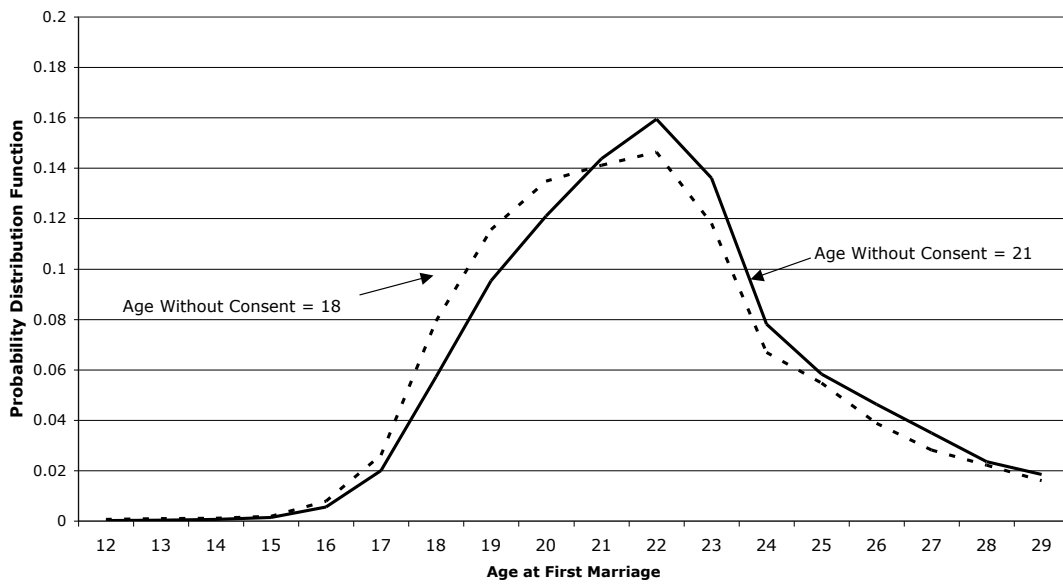
Based on the following 5 states with male no consent age equal to 18 (ID, MI, NC, SC and TN) and 43 states with male no consent equal to 21 (AL, AK, AZ, AR, CA, CO, CT, DE, FL, GA, IL, IN, IA, KS, KY, LA, ME, MD, MA, MN, MS, MO, MT, NE, NV, NJ, NM, NY, ND, OH, OK, OR, PA, RI, SD, TX, UT, VT, VA, WA, WV, WI and WY).

**Appendix Figure 3a: Distribution of Age at First Marriage for Women in 1970 by Legal Regime Across States: Retrospective Census Data**



Based on the following 40 states with female no consent age equal to 18 (AL, AK, AZ, AR, CA, CO, DE, HI, ID, IL, IN, IA, KS, KY, ME, MD, MA, MI, MN, MO, MT, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, SC, SD, TN, TX, UT, VT, WA, WI and WY) and 7 states with female no consent equal to 21 (CT, FL, LA, PA, RI, VA and WV).

**Appendix Figure 3b: Distribution of Age at First Marriage for Men in 1970 by Legal Regime Across States: Retrospective Census Data**



Based on the following 6 states with male no consent age equal to 18 (KY, MI, NC, SC, TN and WA) and 36 states with male no consent equal to 21 (AL, AZ, AK, CA, CO, CT, DE, FL, ID, IL, IN, IA, KS, LA, MD, MA, MN, MO, MT, NV, NJ, NM, NY, ND, OH, OK, OR, PA, RI, SD, UT, VT, VA, WV, WI and WY).

Table 1  
**Age of Marriage Laws by Gender and Parental Consent Status, 1950 and 1980**

State	Legal Age of Marriage without Parental Consent				Legal Age of Marriage with Parental Consent			
	1950		1980		1950		1980	
	Women	Men	Women	Men	Women	Men	Women	Men
Alabama	18	21	18	18	14	17	14	14
Alaska	18	21	18	18	16	18	16	16
Arizona	18	21	18	18	16	18	16	16
Arkansas	18	21	18	21	16	18	16	17
California	18	21	18	18	16	18	18	18
Colorado	18	21	18	18	16	16	16	16
Connecticut	21	21	18	18	16	16	16	16
Delaware	18	21	18	18	16	18	18	18
Florida	21	21	18	18	16	18	18	16
Georgia	18	21	18	18	14	17	17	16
Hawaii	20	20	18	18	16	18	18	16
Idaho	18	18	18	18	15	15	15	16
Illinois	18	21	18	18	16	18	18	16
Indiana	18	21	18	18	16	18	18	17
Iowa	18	21	18	18	14	16	18	18
Kansas	18	21	18	18	16	18	18	18
Kentucky	21	21	18	18	14	16	12	12
Louisiana	21	21	18	18	16	18	16	18
Maine	18	21	18	18	16	16	16	16
Maryland	18	21	18	18	16	18	16	16
Massachusetts	18	21	18	18	16	18	18	18
Michigan	18	18	18	18	16	18	16	18
Minnesota	18	21	18	18	16	18	16	16
Mississippi	18	21	15	17	12	12	15	17
Missouri	18	21	18	18	15	15	15	15
Montana	18	21	18	18	16	18	18	18
Nebraska	21	21	19	19	16	18	17	17
Nevada	18	21	18	18	16	18	16	16
New Hampshire	18	20	18	18	18	20	18	18
New Jersey	18	21	18	18	16	18	16	16
New Mexico	18	21	18	18	16	18	16	16
New York	18	21	18	18	16	16	16	16
North Carolina	18	18	18	18	16	16	16	16
North Dakota	18	21	18	18	15	18	16	16
Ohio	18	21	18	18	16	18	16	18
Oklahoma	18	21	18	18	15	18	16	16
Oregon	18	21	18	18	15	18	17	17
Pennsylvania	21	21	18	18	16	16	16	16
Rhode Island	21	21	18	18	16	18	16	18
South Carolina	14	18	18	18	14	18	14	16
South Dakota	18	21	18	18	15	18	16	16
Tennessee	18	18	18	18	12	12	16	16
Texas	18	21	18	18	14	16	14	14
Utah	18	21	18	18	14	16	14	14
Vermont	18	21	18	18	16	18	16	16
Virginia	21	21	18	18	16	18	16	16
Washington	18	21	18	18	15	12	17	17
West Virginia	21	21	16	18	16	18	16	18
Wisconsin	18	21	18	18	15	18	16	16
Wyoming	18	21	19	19	16	18	16	16

Data on legal age requirements by state and year collected by the authors from state statutes.

Table 2  
**Statistical Tests of the Equivalence of Marriage Proportions Across Legal Regimes in 1950 using Vital Statistics Data**

<b>Part a: Women</b>				
Proportion of Women Marrying in Several Age Categories in 1950, According to Vital Statistics				
Age Group	States with Non-consent Age of 18	States with Non- consent Age of 21	Difference	Standard Error
<=17	0.108	0.110	-0.002	0.002
18	0.203	0.112	0.091	0.002
>=19	0.689	0.778	-0.089	0.002
<=17	0.108	0.110	-0.002	0.002
18-20	0.463	0.331	0.132	0.002
21	0.109	0.133	-0.024	0.002
>=22	0.321	0.425	-0.105	0.003
Sample Size	201,564	45,623		

These tests correspond to Figure 3a.

There are 15 states in the sample with non-consent age of 18: DE, ID, IA, KS, ME, MI, MS, MT, NH, ND, OR, SD, TN, VT and WY.

There are 3 states in the sample with non-consent age of 21: CT, FL and NE.

<b>Part b: Men</b>				
Proportion of Men Marrying in Several Age Categories in 1950, According to Vital Statistics				
Age Group	States with Non-consent Age of 18 to 20	States with Non- consent Age of 21	Difference	Standard Error
<=20	0.223	0.185	0.038	0.002
21	0.157	0.192	-0.036	0.002
>=22	0.621	0.623	-0.002	0.002
<=17	0.005	0.006	-0.001	0.0003
18-20	0.218	0.179	0.039	0.002
21	0.157	0.192	-0.036	0.002
>=22	0.621	0.623	-0.002	0.002
Sample Size	71,012	196,015		

These tests correspond to Figure 3b.

There are 4 states in the sample with non-consent age of 18 to 20: ID, MI, NH and TN.

There are 14 states in the sample with non-consent age of 21: CT, DE, FL, IA, KS, ME, MS, MT, NE, ND, OR, SD, VT and WY.

Table 3  
**Statistical Tests of the Equivalence of Marriage Proportions Across Data Sets in 1950**

**Part a: Women, States with Non-Consent Age of 18**

Proportion of Women Marrying in Several Age Categories in 1950, in States with non-consent age of 18

Age Group	Vital Stats	Census	Difference	SE
<=17	0.108	0.197	-0.088	0.004
18	0.203	0.145	0.058	0.003
>=19	0.689	0.658	0.030	0.004
N	201,564	12,289		

These tests correspond to Figure 4a.

There are 15 states in the sample with female non-consent age of 18: DE, ID, IA, KS, ME, MI, MS, MT, NH, ND, OR, SD, TN, VT and WY.

**Part b: Women, States with Non-Consent Age of 21**

Proportion of Women Marrying in Several Age Categories in 1950, in States with non-consent age of 21

Age Group	Vital Stats	Census	Difference	SE
<=20	0.441	0.535	-0.094	0.012
21	0.133	0.113	0.020	0.008
>=22	0.425	0.352	0.074	0.012
N	45,623	1,672		

These tests correspond to Figure 4b.

There are 3 states in the sample with female non-consent age of 21: CT, FL and NE.

**Part c: Men, States with Non-Consent Age of 18 to 20**

Proportion of Men Marrying in Several Age Categories in 1950, in States with non-consent age of 18 to 20

Age Group	Vital Stats	Census	Difference	SE
<=17	0.005	0.034	-0.029	0.003
18-20	0.218	0.250	-0.032	0.008
21	0.157	0.132	0.024	0.006
>=22	0.621	0.584	0.037	0.009
N	71,012	3,059		

These tests correspond to Figure 4c.

There are 4 states in the sample with male non-consent age of 18 to 20: ID, MI, NH and TN.

**Part d: Men, States with Non-Consent Age of 21**

Proportion of Men Marrying in Several Age Categories in 1950, in States with non-consent age of 21

Age Group	Vital Stats	Census	Difference	SE
<=20	0.185	0.259	-0.074	0.006
21	0.192	0.135	0.057	0.005
>=22	0.623	0.606	0.017	0.007
N	196,015	5,263		

These tests correspond to Figure 4d.

There are 14 states in the sample with male non-consent age of 21: CT, DE, FL, IA, KS, ME, MS, MT, NE, ND, OR, SD, VT and

Table 4  
**Statutory Provisions for Proof of Age Among Those Applying for a Marriage License**

State	Late 1920s	Current	Date of Statutory Change Requiring Documentation
Alabama	Not specified*	SSN	
Alaska	NA	SSN	1997
Arizona	Oath	Affidavit and SSN	
Arkansas	Affidavit*	BC	
California	Oath may be requested	Photo ID	Before 1988
Colorado	Affidavit	"Satisfactory proof" of age	
Connecticut	Oath	SSN	
Delaware	Oath	Affidavit and SSN	
Florida	Affidavit	Affidavit and SSN	
Georgia	Oath	BC, DL, or PP	1975
Hawaii	NA	SSN	
Idaho	Affidavit	BC	1967
Illinois	Affidavit	"Satisfactory proof" of age	
Indiana	Not specified	BC or DL	
Iowa	Affidavit or Certificate of age	SSN	1961
Kansas	Oath	Affidavit	
Kentucky	Not specified*	BC or DL	
Louisiana	Not specified	BC	
Maine	Not specified	Oath and SSN	
Maryland	Oath	Affidavit and SSN	
Massachusetts	Oath	BC, DL, or PP	1931
Michigan	Affidavit	BC	1968
Minnesota	Oath	Affidavit	
Mississippi	Affidavit	BC or DL	
Missouri	Not specified	SSN	
Montana	Not specified	BC	
Nebraska	Not specified	Photo ID	
Nevada	Oath may be requested	Affidavit	
New Hampshire	Not specified	BC, DL, or PP	
New Jersey	Oath	Oath by witness and SSN	
New Mexico	Not specified	Affidavit	
New York	Affidavit	BC, DL, or PP	Before 1974
North Carolina	Oath may be requested	BC	1957
North Dakota	Oath	BC	1981
Ohio	Oath	Affidavit and SSN	
Oklahoma	Evidence can be requested	BC	1961
Oregon	Affidavit	"Reasonable proof" of age	
Pennsylvania	Oath	Affidavit	
Rhode Island	Oath		
South Carolina	Affidavit	BC	1962
South Dakota	Testimony of witnesses	BC, DL, or PP	
Tennessee	Not specified*	Affidavit	
Texas	Not specified	BC, DL, or PP	Before 1997
Utah	Affidavit		
Vermont	Oath		
Virginia	Not specified		
Washington	Affidavit	Affidavit	
West Virginia	Not specified	BC or DL	
Wisconsin	Oath	BC	
Wyoming	Testimony of witnesses	Affidavit	

SSN: Social Security Number; BC: Birth Certificate; DL: Driver's License; PP: Passport

\* Financial penalty specified for misinformation.

Late 1920 data from May (1929); current data and data on changes in statutes collected by authors.

Table 5  
**Statistical Tests of the Equivalence of Marriage Proportions Across Data Sets in 1970**

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**Part a: Women, States with Non-Consent Age of 18**

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Proportion of Women Marrying in Several Age Categories in 1950, in States with non-consent age of 18

Age Group	Vital Stats	Census	Difference	SE
<=17	0.145	0.148	-0.003	0.002
18	0.162	0.142	0.019	0.002
>=19	0.694	0.710	-0.016	0.002
N	121,687	46,480		

These tests correspond to Figure 5a.

There are 36 states in the sample with female non-consent age of 18: AK, AR, AL, CA, CO, DE, HI, IA, ID, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, NC, ND, NH, NJ, NV, OH, OR, SC, SD, TN, TX, UT, VT, WA, WI and WY.

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**Part b: Women, States with Non-Consent Age of 19 to 21**

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Proportion of Women Marrying in Several Age Categories in 1950, in States with non-consent age of 21

Age Group	Vital Stats	Census	Difference	SE
<=20	0.567	0.566	0.001	0.006
21	0.137	0.137	0.000	0.004
>=22	0.295	0.297	-0.002	0.005
N	24,365	11,691		

These tests correspond to Figure 5b.

There are 8 states in the sample with female non-consent age of 19 (GA), 20 (NE) and 21 (CT, FL, PA, RI, VA, WV).

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**Part c: Men, States with Non-Consent Age of 17 to 20**

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Proportion of Men Marrying in Several Age Categories in 1950, in States with non-consent age of 18 to 20

Age Group	Vital Stats	Census	Difference	SE
<=17	0.038	0.044	-0.006	0.002
18-20	0.362	0.330	0.033	0.004
21	0.137	0.142	-0.005	0.003
>=22	0.463	0.485	-0.021	0.004
N	43,662	17,209		

These tests correspond to Figure 5c.

There are 14 states in the sample with male non-consent age of 17 (MS), 18 (KY, MI, NC, SC, TN, WA), 19 (AK, GA, TX) and 20 (HI, ME, NE, NH).

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**Part d: Men, States with Non-Consent Age of 21**

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Proportion of Men Marrying in Several Age Categories in 1950, in States with non-consent age of 21

Age Group	Vital Stats	Census	Difference	SE
<=20	0.310	0.309	0.000	0.003
21	0.152	0.145	0.007	0.002
>=21	0.538	0.545	-0.007	0.003
N	99,671	36,639		

These tests correspond to Figure 5d.

There are 31 states in the sample with male non-consent age of 21: AL, AR, CA, CO, CT, DE, FL, IA, ID, IL, IN, MA, MD, MN,

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Table 6  
**Incidence of First Marriage Outside State of Residence Among Youth**

	Males	Females
<u>Among those who marry, percent marrying outside state of residence:</u>		
All Ages	15.7%	10.3%
Ages < 21	13.6%	10.6%
By age:		
Age 14	13.4%	21.6%
Age 15	17.4%	20.1%
Age 16	19.5%	13.2%
Age 17	20.1%	9.6%
Age 18	13.7%	11.9%
Age 19	12.8%	10.0%
Age 20	13.2%	8.7%
<u>Among those &lt; age 21 who marry outside state of residence:</u>		
% marrying in an adjacent state	66.8%	73.7%
<u>Among those &lt; age 21 who marry in an adjacent state:</u>		
% younger than own state's no-consent law but above no-consent law in marriage state	25.8%	19.4%
Assuming all marriages in the previous row are due to marriage avoidance, % of marriages among those < age 21 who avoid state law by marrying outside of home state	2.4%	1.5%

Note: All statistics are for first marriages. Data based on Vital Statistics records from 1968-1971, weighted by Vital Statistics sample weights. Data come from all 47 states with information reported during this time period.

Table 7  
**The Effect of Marriage Laws on the Probability of Marriage before a Specified Age**

<b>Part a: Men</b>		
	Dependent Variable: Probability of marriage by	
	Age 20	Age 17
Marriage law		
Never able to marry without consent before age 21	-0.0075 (0.0024)	
Never able to marry with consent before age 18		0.0004 (0.0003)
Cohort fixed effects	x	x
State fixed effects	x	x
Birth cohorts included in regression	1930-1962	1930-1962
Number of observations	1,868,463	2,149,555
Share of men married by age 20 in 1970 = 0.235 Share of men married by age 17 in 1970 = 0.021		
Percent effect of marriage laws limiting marriage without parental consent before age 21 (coefficient/1970 share) = -3.19%		
Percent effect of marriage laws limiting marriage with parental consent before age 18 (coefficient/1970 share) = 2.03%		
<b>Part b: Women</b>		
	Dependent Variable: Probability of marriage by	
	Age 18	Age 15
Marriage law		
Never able to marry without consent before age 19	-0.0088 (0.0030)	
Never able to marry with consent before age 16		-0.0036 (0.0005)
Cohort fixed effects	x	x
State fixed effects	x	x
Birth cohorts included in regression	1930-1962	1930-1962
Number of observations	2,145,866	2,238,084
Share of women married by age 18 in 1970 = 0.245 Share of women married by age 15 in 1970 = 0.024		
Percent effect of marriage laws limiting marriage without parental consent before age 19 (coefficient/1970 share) = -3.58%		
Percent effect of marriage laws limiting marriage with parental consent before age 15 (coefficient/1970 share) = -15.32%		

Standard errors in parentheses; standard errors are clustered on just cohort cells.  
Data are from the 1980 Census, including all 50 states (but not Washington, D.C.)