Changing the Price of Marriage: Evidence from Blood Test Requirements

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Abstract:

We exploit variation in state laws about blood test requirements for a marriage license to examine the impact of changes in the price of marriage. We find that lowering the price of marriage increases the marriage rate, particularly among lower educated women. We provide evidence of this effect using marriage certificate data, natality data indicating whether the mother is married at the time of birth, and Census data reporting current marital status among women who had their first child in the last three years. We find that among new mothers, about 60% of the deterred marriages chose to cohabit instead and the other 40% remain married.

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1. Introduction

Policy makers and researchers have long been interested in the effects of public policy on the decision to marry. These policies include those that relate to the marriage contract directly (such as minimum age requirements and divorce laws) and those that affect couples' economic incentives to marry (such as income taxes or transfer programs). This concern for the effects of policy on marriage has emerged amidst a growing interest in promoting healthy marriages and in understanding family structures. A recent announcement from the Department of Health and Human Services invited applications to establish a National Center for Marriage Research, saying:

> Marriage and family structure are intertwined with all aspects of life—health, economic security, child and adult well-being, and others—so an accurate, rigorous understanding of the role of family structure is essential to inform policy research across the health and human services domains. (DHH 2007)[1]

Economists in particular have studied how changes in the economic or other costs associated with marriage might affect marriage behavior. Minimum age requirements for marriage (Blank, Charles, and Sallee; Dahl 2005), unilateral divorce laws (Rasul 2006), income tax policy (Moffitt 1998), the Earned Income Tax Credit (Eissa and Hoynes 2000), and welfare reform (Bitler et al. 2004) have all been shown to affect marriage rates. In this paper, we examine the effect on marriage of states' blood test requirements for obtaining a marriage license. This is an especially interesting policy to consider for several reasons. One, the economic costs of the tests are relatively small, which allows us to study the effects of a small change in the cost of marriage. Two, the state law changes occurred over a wide window of time (nearly three decades) allowing us to separate the effect the law change and overall shifts in marriage rates. Three, while the

effects of the policy may vary by socio-economic status or demographic group, the policy itself was applied uniformly to the entire population considering marriage (unlike age requirements or tax or transfer policies). Finally, because the tests were originally enacted in the interest of public health but were repealed after they became obsolete, the effects of the policy change should not directly affect other outcomes such as health, fertility, or labor force participation.

The blood test requirements we consider are most commonly for rubella, syphilis, or other venereal diseases. In 1980, the majority of states required a blood test in order to receive a marriage license; by 2006, all but Mississippi, Montana, and the District of Columbia had repealed their laws. Since blood tests must be paid for by the individual wishing to be married, the blood test requirement increases the dollar cost of marriage. There are also likely to be other nonpecuniary costs associated with going to the doctor and having blood drawn or the potential cost of testing positive for and having to reveal that condition to one's partner. These costs might be relatively greater for certain populations, including those with lower income and lower education levels.

In this paper, we first use CDC reports of state marriage rates (defined as marriage licenses issued per 1,000 state residents) to show that blood test requirements are associated with a 5.6% decrease in marriage licenses issued. Since couples can obtain marriage licenses outside of their state of residence, we also use individual-level marriage license data, which contains information on state of residence. We find that while some couples are driven out of state for their marriage licenses, the tests do actually deter marriage for others. We confirm this result using birth certificate data, showing that the tests are associated with lower rates of marriage among young first-time mothers. The

[1] The funds to establish the Center were awarded to Bowling Green State University.

marriage-deterrent effect seems to be greater for those with low education and for nonwhites. Finally, we use Census and American Community Survey data to show that for young couples who do not marry in response to the blood test requirement, most choose to cohabit rather than remain single.

In the next section, we discuss the literature on the effects of public policies on marriage, and describe in detail the blood test requirements we study. Section 3 describes our data sources and methods, and Section 4 discusses our findings. The last section concludes.

2. Background

2.1 Marriage and Public Policy

Researchers have considered many ways in which public policy might influence a couple's decision to marry or stay married. First, there is wide variation across states and across time in the structure of the marriage contract itself and how it might be dissolved. Stevenson and Wolfers (2007) provide a summary of both the theoretical and empirical literature on the effect of unilateral divorce laws on divorce rates, and conclude that more relaxed divorce laws had "at most a small effect on divorce rates." Rasul (2003) considers how unilateral divorce laws might affect rates of *marriage*. He argues that allowing one partner to dissolve the marriage alters the value of marriage—raising it by allowing the person to leave an unhappy marriage, and lowering it by making it possible for the partner to leave. To determine which effect dominates, he empirically examines the effect of unilateral divorce laws on marriage rates, and finds that the laws decreased marriage rates and also decreased rates of remarriage.

Additionally, researchers have considered the effects of minimum age requirements for marriage. Blank, Charles, and Sallee (2007) find that when states have a higher minimum age for marriage, some marriages are delayed. However, they also find that many young people marry out of their home state to avoid restrictive laws. Dahl (2005) obtains similar results in his work using minimum age requirements as an instrument for early marriage. We expect that blood test requirements may operate in much the same manner—deterring marriage for some individuals, and driving others to less restrictive states to obtain their licenses. We explore both possibilities below.

Economists have also studied how tax and welfare policies might have affected (whether intentionally or not) couples' incentives to marry. First, the U.S. tax system has a "marriage penalty," in which married couples who file jointly are taxed at a higher rate than they would be if they were single and filed separately. Moffitt (1998) provides a review of the literature examining the impact of the marriage penalty on marriage rates from the 1970s to the 1990s, and concludes that most research supports a marriage disincentive effect. However, recent research has focused on the interaction of the income tax system and transfer systems such as the EITC—see Dickert-Conlin and Houser (1998) for a description of how marital status affects the net income of low-income families. Eissa and Hoynes (2000) show that the EITC increased marriage rates for low-income families and lowered them for middle-income families. The effects of the 1996 welfare reform on marriage are also studied by Bitler, et al. (2004), who find that the policy change may have decreased entry into marriage.

The research described in this section is a small part of the large body of work on public policy and marriage. While the literature is at times inconclusive, there is both

theoretical and empirical support for an effect of public policy on marriage rates. There is also evidence that policy may affect where couples marry, and some policies might have a greater impact on certain socio-economic groups. In this paper, we examine the consequences of a previously unstudied public policy on marriage—state blood test requirements for marriage licenses.

2.2 Blood Test Requirements

Historically, many states have required applicants for a marriage license to obtain a blood test. These tests were for venereal diseases (such as syphilis), for genetic disorders (such as sickle-cell anemia), or for rubella. Tests for venereal diseases were introduced to inform the potential marriage partner of the risk of contracting a communicable disease. Screenings for genetic disorders and for rubella were usually implemented in the interest of minimizing the risk of genetic disease or birth defects in the couple's offspring.[2] It was thought that women getting married could soon be pregnant, and policy makers wanted both the women and their mates to be aware of such risks.

However, as rubella vaccinations became commonplace and treatments for venereal diseases became more effective, the need for the screening decreased. This improvement in medical technology, combined with increasing concerns about protecting privacy, led to the repeal of the requirements in many states. Using individual state statute volumes, we found that there were 18 states that repealed blood test laws in the 1980s, another 7 in the 1990s, and 5 more in between 2000-2005, leaving only 3 with

[2] According to a report from the March of Dimes, "about 25 percent of babies whose mothers contract rubella during the first trimester of pregnancy are born with one or more birth defects." (National Toxicology Program 2007).

these laws in 2005.[3] Figure 1 shows the timing of changes in blood test requirement laws in each of the US states.

We exploit both the cross-state variation in the presence of blood test laws and within-state variation in the repeal of such laws to examine the laws' impact on marriage. The requirements may have increased the price of obtaining a marriage license in several ways. First, to comply with blood test requirements, individuals applying for a marriage license must pay for the doctor's visit and blood test in most cases, which "can cost couples hundreds of dollars" (Leblanc 2005). In addition to the financial and time costs involved in taking the test, there may be psychic costs as well. As James Bowman observes in a 1977 Phylon article, "the mandatory testing for carriers of genetically determined diseases at the time of marriage application can result in serious psychological trauma, for the decision has already been made to marry." Applicants may wish to avoid learning about their disease status, or may want to keep this information from their partners. Finally, there may be non-negligible disutility from a visit to the doctor, or from the actual procedure of having blood drawn. Thus, we believe the blood test laws may have been a deterrent to obtaining a marriage license in states with the laws, and may have also decreased couples' likelihood of marrying at all.

Figure 2 shows the average number of marriage licenses issued in each state per 1,000 state residents, before and after the repeal of a blood test requirement. Data are from the CDC's reports of state marriage rates (described in more detail in the next section) for the 24 states who had a requirement in place in 1980, but who repealed their law by 2001. For each state, we center the figure at the year the law was repealed and

[3] An article noting the repeal of Massachusetts' law in 2005 reported that "there are so few syphilis cases now among engaged couples that the test is outdated and an added economic burden . . . The test is also

report the marriage rates for the five years before and after the repeal of the law. The marriage rates are trending downward over this period (highlighting the need to control for trends in marriage in our empirical specifications). However, this downward trend appears to be interrupted in the year that states repeal their blood test requirements, when an increase of about 2% in marriage licenses issued is observed. This increase persists in the years immediately following the repeal, and it appears that in the long run marriage rates may remain above the pre-repeal trend. In the next section, we describe our empirical strategy for confirming these results and for examining the impact of the requirements on marriages more generally.

3. Data and Methods

We will be using within- and across-state variation in whether states require a blood test for a marriage license to examine the impact of the laws on marriage behavior. The general specification is:

$$y_{st} = \beta_0 + \beta_1 * bloodtest_{st} + \alpha_s + \delta_t + \varepsilon_{st} \quad (1)$$

where $bloodtest_{st}$ is a dummy variable equal to one if state *s* had a blood test for the entire year in year *t*, α_s represents state fixed-effects, and δ_t are year dummies. The dependent variable will be a measure of marriage behavior in state *s* and period *t* and will vary with the particular data set and specification.

As with any identification strategy using variation in state laws, one must be concerned with the endogeneity of the laws. If states enact or repeal blood test requirements in a way that is correlated with state characteristics, we might obtain biased estimates. Returning to Figure 1, we see that there are no noticeable patterns in the law

designed to detect rubella, but people are now vaccinated against that disease" (LeBlanc 2005).

changes and there is variation both geographically and politically. To be cautious, however, all of our specifications include state fixed effects and most include state-specific time trends. We also conduct a set of placebo tests in which we use our same empirical strategy on a set of outcomes that should not be affected by the blood test laws. We find that the laws were not associated with changes in the state's adult population or school spending and find imprecise estimates for state-level political leanings.

We use four different synthetic panel data sets in our analysis.[4] First, we use annual state marriage rates obtained from the CDC's Vital Statistics data for 1980-2006. Marriage rates are defined as the number of marriage licenses issued per 1,000 state residents. Thus, estimating equation (1) using these marriage rates as the dependent variable will tell us whether the laws had any effect on states' applications for marriage licenses. The advantage of this data set is that it is available for the entire time period we are interested in studying, and for all states. States might also be interested in knowing the effects of the laws on license applications, since marriage license fees are a source of revenue for local and state governments. However, even if we see that the laws decrease marriage licenses, we will not be able to identify decreases in actual marriages using this data set—couples in states with requirements could still be marrying but obtaining their licenses in another state. Furthermore, this data is not available at a more detailed level (for example, subdivided into racial or education categories).

For these reasons, we also use the Marriage and Divorce Detail Files from Vital Statistics, which contain individual-level data from marriage licenses. The data are available from 1981 to 1995, when Vital Statistics stopped collecting marriage and

[4] See the data appendix for detailed information on data sources.

divorce data due to funding cuts. Further, not all states report their individual license data in all periods. However, the data is ideal for analyzing the impact of a change in blood tests on marriage, as both the state of residence and state of marriage are reported. Thus, we are able to examine the impact of blood test requirements on marriage licenses issued per 1,000 state residents, *even if the couple married in another state*. This allows us to see if the laws actually deterred marriage, as opposed to simply sending residents out of state for their marriage licenses. Also, because these are micro data we are able to construct marriage rates by racial group.[5] Finally, we can use the data to see whether the laws affect couples' likelihood of marrying in their state of residence or in an adjoining state.

Because individual-level marriage license data is unavailable for several states and for all states after 1995, we supplement our analysis using the Vital Statistics Natality Detail files for 1982-2004. The data contain a virtual census of births to women in the United States, with about four million births per year. For most states women are asked to report whether or not they are married at the time of birth, and we use this data to obtain both marriage and birth information for women ages 18 to 25.[6] We choose this group because young first-time mothers are plausibly "at-risk" for marriage, so the blood test requirements might have an effect on this population. These mothers are also important for policy makers interested in rates of out-of-wedlock childbearing or in outcomes for children born in and out of marriage. The model is similar to equation (1), but the dependent variable is a binary variable equal to one if the mother is married at the

[5] We also constructed marriage rates by education, but because education is only reported on the marriage license data through 1988, those results are not reported here.

time of birth. We are also able to include controls for mother's race and education, and we can divide the sample to test the hypothesis that the blood test requirements have a greater effect on low-SES women.

Finally, we turn to estimating the effect of the laws on respondents' reported relationship status in the 1990 and 2000 Decennial Census and the in 2001-2006 American Community Survey (ACS). The advantage of this data is that starting in 1990, the US census included "unmarried partner" as one of the relationship codes. This information has also been collected in the ACS. We pool data from the 1990 and 2000 5% and 1% PUMS and the 2000-2006 ACS. Unfortunately, we do not observe whether individuals entered marriages or cohabiting relationships in the past year in these surveys, and thus can not produce marriage rates equivalent to those in the Vital Statistics and CDC data. Instead, we observe whether an individual reports that she is in one of three alternative states: currently married, cohabiting, or single. Because these measures are stock rather than flow variables, they are noisy measures of the decision to enter into a marriage or cohabiting relationship, which will bias our results toward zero (making it more difficult to detect a true response to the blood test laws).

One way we address this is by looking at women whose oldest child was born in the last three years. As such, this provides a sample of women that is very similar to our analysis of first-time mothers using the natality data. We use the relationship codes of the child's mother and her spouse or partner, and exclude all three-generational households (9% of the sample) because it is difficult to know which group the mother belongs to in these cases. Our analysis sample includes 504,380 households, of which

[6] In states where the mothers are not asked the marriage questions directly, marital status is imputed by the NCHS. In 1980, marital status is imputed for seven states; by 2006, only two states (MI and NY) still

81.2% are married, 7.8% are cohabiting, and 11% are single mothers. While we may not know when the couple was married we are capturing marital status right when the couple is beginning to have children.

In this analysis, we estimate equations like equation (1) above, but with a categorical dependent variable representing these three options using a multinomial logit model. Using this model, we test whether blood test requirements influence which of the three groups that a person will be in. We control for the mother's characteristics including age, race/ethnicity, and education and include state and year fixed effects.

4. Results

4.1 Effect of Laws on Marriage Licenses Issued

We first estimate the effect of states' blood test requirements on the number of marriage licenses issued by the state. Data are from CDC reports of state marriage rates from 1980-2006—the same data that were used to create Figure 2. Results are reported in Table 1. Each cell in each column contains the coefficient estimate of the effect of the presence of a blood test requirement on the number of marriage licenses issued per 1,000 state residents (β_1 in equation (1)). We report our results with and without state-specific time trends. Particularly in the results with Nevada and Hawaii included, we see that the inclusion of state-specific time trends can significantly affect the coefficients. We believe this is because many states were seeing dramatic declines in marriage rates over this period, largely due to social and cultural forces. If these changes coincided with the repeal of the blood test requirements, we might erroneously attribute decreases in marriage rates to those repeals. As such, for the remainder of the paper we focus on

impute marital status.

results with state-specific time trends where possible. Also, as marriage destinations, Hawaii and Nevada are outliers in the distribution of marriage licenses issued per state residents, so we concentrate on the results that omit them from the sample.

We find that for the 1980-2006 period, marriage licenses decrease by about 0.5 per 1,000 state residents—corresponding to a 5.6% decrease in marriage licenses issued. This effect is even larger when the sample is restricted to the years 1990-2006, where the coefficient -0.8760 reflects a 10.5% decrease in marriage licenses issued. We might expect blood test requirements to have a larger effect in later years for several reasons. The stigma of cohabiting may have lessened in the later period, so that couples are more likely to decide to live together rather than marry in response to a blood test requirement. Decreases in travel costs may have made it easier to travel to another state to obtain a license. Finally, as more states repeal their laws, couples have more options when looking to marry in a state that does not require a test.

The results in Table 1 show a large and statistically significant effect of the blood test requirements on marriage licenses issued by a state. Policy makers might be interested in this finding, since marriage license fees are a source of revenue for state and local governments. However, while these results are consistent with the hypothesis that blood test requirements actually deter *marriage*, we cannot test this directly with this data. It is possible that the observed decrease in licenses issued is driven by couples who are still getting married, but are just doing so in another state. To study the effect of blood test requirements on the likelihood of marriage, we turn to results using individual marriage license data.

4.2 Effect of Laws on Marriages to State Residents

The results in Table 2 are based on state marriage rates constructed from individual-level marriage license data. This data includes information on the bride and groom's state of residence, and as long as the couple marries in a reporting state, we observe the marriage. This allows us to approximate the number of *marriages* per 1,000 state residents, as opposed to the number of *marriage licenses* issued by the state (as in Table 1). The actual number of marriages observed will be an underestimate, since not all states report individual-level license data. The fact that not all states report will only bias our results if couples that choose to marry out of state in response to blood test requirements are more likely to marry in non-reporting states than other couples who marry out of state.[7] The individual level data also allows us to examine marriage rates by racial group.

First, when state marriage rates are constructed using the groom's state of residence, we see a decrease of about 0.2 marriages per 1,000 residents in response to blood test requirements, for a 2.5% decrease in the marriage rate. While the results for racial groups are not statistically significant at conventional levels, they do suggest that the blood test requirements are more of a deterrent to marriage for blacks than for whites. The coefficient -0.5811 represents an 8.9% decrease in marriage rates for blacks. When the sample is restricted to marriages where the groom is under age 30, the effect of the laws is greater in magnitude and is again strongest for blacks. These results suggest that blood test requirements do have more of an impact on lower-SES groups, who might find the economic or other costs of the tests to be a greater deterrent. The results are similar when state marriage rates are constructed using the bride's state of residence.

[7] The non-reporting states are AZ, AR, NV, NM, ND, OK, TX, and WA.

Taking Tables 1 and 2 together, we see that blood test requirements are associated with a 5.6% decrease in marriage licenses issued in a state between 1980 and 2006, and a 2.5% decrease in marriages to state residents between 1981 and 1995. Thus, it appears that some of the decrease in licenses issued is due to couples choosing to marry in other states, while other couples choose not to marry at all. To further explore the issue of couples marrying in other states in response to a blood test requirement, we use data on state of residence and state of marriage to examine the laws' impact on couples' likelihood of marrying in their state of residence or in an adjoining state. These results are reported in Table 3. In Panel A, the dependent variable is constructed by taking the total number of marriages to a state's residents as the denominator, and the number of those marriages that took place in the state as the numerator. We see that the percent of couples marrying in the groom's state of residence was 1.54 percentage points lower when the groom's state had a blood test requirement in place. The effect is larger for whites than for blacks, and is statistically significant. For grooms under 30, we also see lower in-state marriage rates, though the coefficient is smaller. The fact that higher-SES groups are less likely to marry in-state in response to the requirements may be due to their ability to bear the costs of an out-of-state marriage. Results are very similar when the bride's state of residence is used.

The results in Panel B show the effect of blood test requirements on couples' likelihood of marrying in an adjoining state. While the effect is only marginally significant, we see that the percent of couples marrying in an adjoining state is 1.37 percentage points higher when a requirement is in place. The magnitude of the coefficients in Panel B is slightly less than the corresponding coefficients in Panel A—

suggesting that when couples are driven out of state for their marriage licenses, most marry in an adjoining state, while a few travel even further away.

The estimates using the Vital Statistics Marriage License data show that blood test requirements send residents out of state for marriage licenses and in some cases deter marriage altogether. However, the data is only available for 1981 to 1995, and licenses are not reported for all states. We now look to confirm the marriage-deterrent effect of blood test requirements using an alternative data set.

4.3 Effect of Laws on Marital Status of First-Time Moms

Using the Vital Statistics Natality Detail data, we measure the effect of the laws on the fraction of first-time mothers who are married. We first examine this using data collapsed to the state-year level. These results are reported in Table 4. The estimates are reasonable in magnitude though not statistically significant. However, these results do support obtained using the marriage license data, and suggest that having a blood test requirement reduces the probability that a woman is married when she has her first child by approximately 1.4 percentage points (a 1.9% effect). When examining first time mothers ages 18-25, there is a 3.3% decrease in the fraction of mothers who are married at the time of the birth. Again, it appears that the laws have a greater effect on low-SES groups.

In Table 5, we further examine data for first-time mothers ages 18-25 using individual level data rather than data collapsed to the state-year level. We focus on young mothers both because the results in Table 4 suggest that they experience a larger effect and because this group can more reasonably be considered to be on the margin for getting married. Each column in Table 5 represents a separate regression. Looking at the

first column, we see that even after controlling for race and education, our reported coefficient estimate does not change appreciably from the results found using collapsed data, though the coefficient is now statistically significant at the 1% level. The natality data allow us to stratify the sample by educational groups for the first time, and it appears that blood tests impact those with less education more severely than those with more education and nonwhites more than whites. For women with less than a high school degree, there is a 14% decrease in the probability of being married when a law is in place; for women with a high school degree, the effect is only a 2.2% decrease. Using the Natality data and controlling for differences in education, it now appears that the deterrent effect is greatest for mothers in the "other" racial category, suggesting that much of the black-white differences observed using marriage license data can be attributed to differences in education.

Taken together, the results reported in Tables 4 and 5 suggest that marriage decreases the likelihood that first-time mothers are married and this is especially true among 18-25 year-olds and among women without a high school degree.

4.4 Effect of Laws on Marriage and Cohabitation

If blood test requirements do in fact deter marriage as the previous results suggest, what are couples doing instead? We now turn to Census and American Community Survey data from 1990 and 2000-2006 to explore how marriage and cohabitation have changed as a result of the blood test laws. As described above, these data sets contain information on living arrangements, so that we are able to identify whether a person is married, single, or in a cohabiting relationship. Unfortunately, we do not observe when the individual entered the current state, so we can only examine the impact of the laws on

the probability of being in each state at the time of the survey. For this reason, we limit the sample to women whose oldest child is three years or younger. In this way, the results are comparable to those obtained using the Natality data.

Table 6 shows the results from a multinomial logit model that controls for race age, and education (where the omitted group for education is having less than a college degree). Each column represents the marginal effects for the alternative listed in the column heading. Blood test requirements reduce the probability of marriage by 1.04 percentage points (a 1.3% reduction). Of these deterred marriages, 57.7% chose to cohabit instead (raising the cohabitation rate for this group by 7.7%) and the other 42.3% remain unmarried (raising the rate of single mothers for this group by 4%). These results indicate that (at least in the short-run) cohabitation serves as a viable substitute for marriage for those couples who are deterred from marriage by changes in the price of marriage.

4.5 Placebo Tests

One concern with using state law changes to estimate the impact of a change in the price of marriage on marriage rates is that there may be unobservable factors at play in a particular state that are correlated with both the law change and the change in marriage rates. To address this concern we implement a few placebo tests using state level data.

The first test is to check the impact of our blood test laws on the states 18-25 year old population. We get our state-year-age population counts from the National Cancer Institute SEER website. We implement the same empirical strategy as in our earlier

analysis with state and year fixed effects and state-specific quadratic time trends and find that having a blood test law is associated with an increase in population of 14,750 people. With an average state population of 600,000, this represents on a 2.4% change and it is not statistically significant.

We also use state-level per-student expenditures on education as a measure of human capital investment in the state. Again, this is a measure that should be unrelated to the repeal of blood test laws. We find that blood test requirements are associated with a $211 increase in per-student expenditures. This is a 2.9% increase and is not statistically significant.

The final measure that we use is meant to capture the political climate in the state and is a binary variable for whether the electoral votes for that state went to the Democrat candidate for President. In this case, we find a much larger associated effect but again this relationship is not statistically significant.

5. Conclusion

In this paper, we consider the effect of the repeal of states' blood test requirements for marriage licenses on marriage. We begin by showing that blood test requirements decrease marriage licenses issued by a state. We then confirm that while some of this effect is due to couples traveling out of state for marriage, the laws do actually deter marriage for others. The deterrent effect seems to be greater for those with low education and for nonwhites. Finally, we show that those couples who are deterred from marrying by the blood test requirements are more likely to live together than to remain single.

Policy makers who are interested in promoting marriage may find these results useful when predicting the impact of policies that change the cost of marriage. While the issue of blood tests themselves is no longer relevant in most cases (Missouri, Montana, and D.C. being exceptions), other policies that change the cost of marriage include required premarital counseling, waiting periods, and license fees. We have shown that even small changes in the cost of marriage can have significant effects, particularly for certain populations. This result might also generalize to policies such as tax and transfer programs, where previous research has had difficulty in isolating the disincentive effects of changing costs.

These results should also be important for social scientists studying public policies and the marriage decision, for reasons discussed in the introduction. However, we suggest that our findings might also be useful for researchers interested in the effects of marriage on other outcomes, including health, labor force participation, economic well-being, and fertility. It appears that blood test requirements provide plausibly exogenous within- and across-state variation in the cost of marriage, and thus might be used to identify such effects. This strategy might be particularly helpful to researchers studying the effects of marriage for low-SES populations, as the laws have the greatest impact for these groups.

DATA APPENDIX

CDC-Reported Marriage Rates from 1980-2006 were obtained from:

See divorce/cdc/sources.doc

United States Census Bureau. 2007. "Annual Estimates of the Population for the United States, Regions, States, and for Puerto Rico: April 1, 2000 to July 1, 2006." http://www.census.gov/popest/states/NST-ann-est.html.

United States Government. 1998-2007. State Statutes.

Centers for Disease Control and Prevention. 2006. "Births, Marriages, Divorces, and Deaths: Provisional Data for 2005." *Vital and Health Statistics,* 54(20).

Centers for Disease Control and Prevention. 2007. "Births, Marriages, Divorces, and Deaths: Provisional Data for 2006." *Vital and Health Statistics,* 55(20).

Surveillance Epidemiology and End Result population data. accessible via: http://seer.cancer.gov/popdata/.

REFERENCES

Bitler, Marianne, Jonah Gelbach, Hilary Hoynes, Madeline Zavodny. 2004. "The Impact of Welfare Reform on Marriage and Divorce." *Demography*, 41(2): 213-236.

Blank, Rebecca; Kerwin Charles, and James Sallee. 2007. "Do State Laws Affect the Age of Marriage? A Cautionary Tale About Avoidance Behavior" NBER working paper #13667.

Bowman, James. 1977.

Dahl, Gordon. 2005. "Early Teenage Marriage and Future Poverty." Working Paper, UC San Diego.

Dickert-Conlin and Houser. 1998.

Eissa, Nada and Hillary Hoynes. 2000. "Explaining the Fall and Rise in the Tax Cost of Marriage: The Effect of Tax Laws and Demographic Trends, 1984-1997", *National Tax Journal*, 53, 683-711.

Moffit, Robert. 1998.

LeBlanc, Steve. February 3, 2005. "Bay State Abolishes Blood Test for Marriage License." The Standard-Times: A5.

National Toxicology Program, Department of Health and Human Services. 2007. "Rubella." http://cerhr.niehs.nih.gov/common/rubella.html.

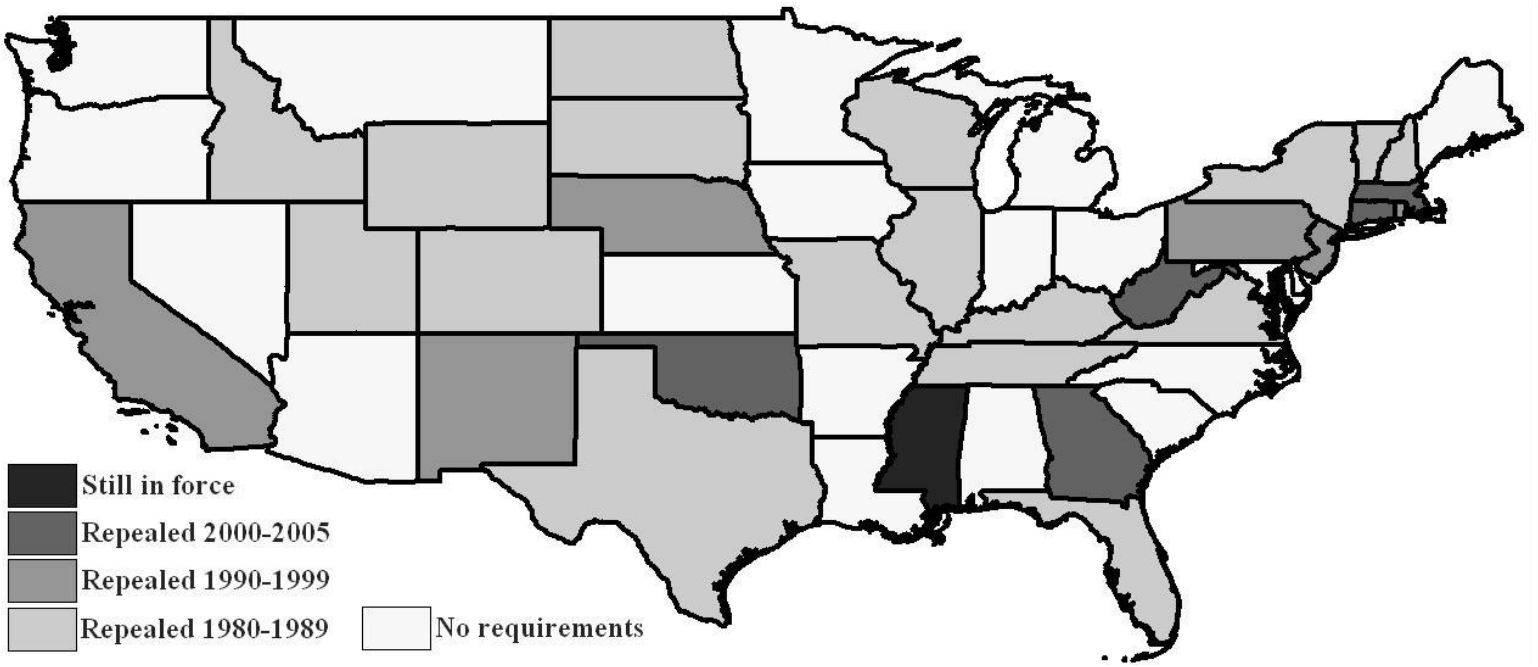
Rasul, Imran. "Divorce laws and Marriage markets" *Journal of Law, Economics, and Organization* Vol. 22 No.1 Nov. 2005

Rasul, Imran.2003. "The Impact of Divorce Laws on Marriage", Mimeo University of Chicago.

Stevenson, Betsey and Justin Wolfers. 2007

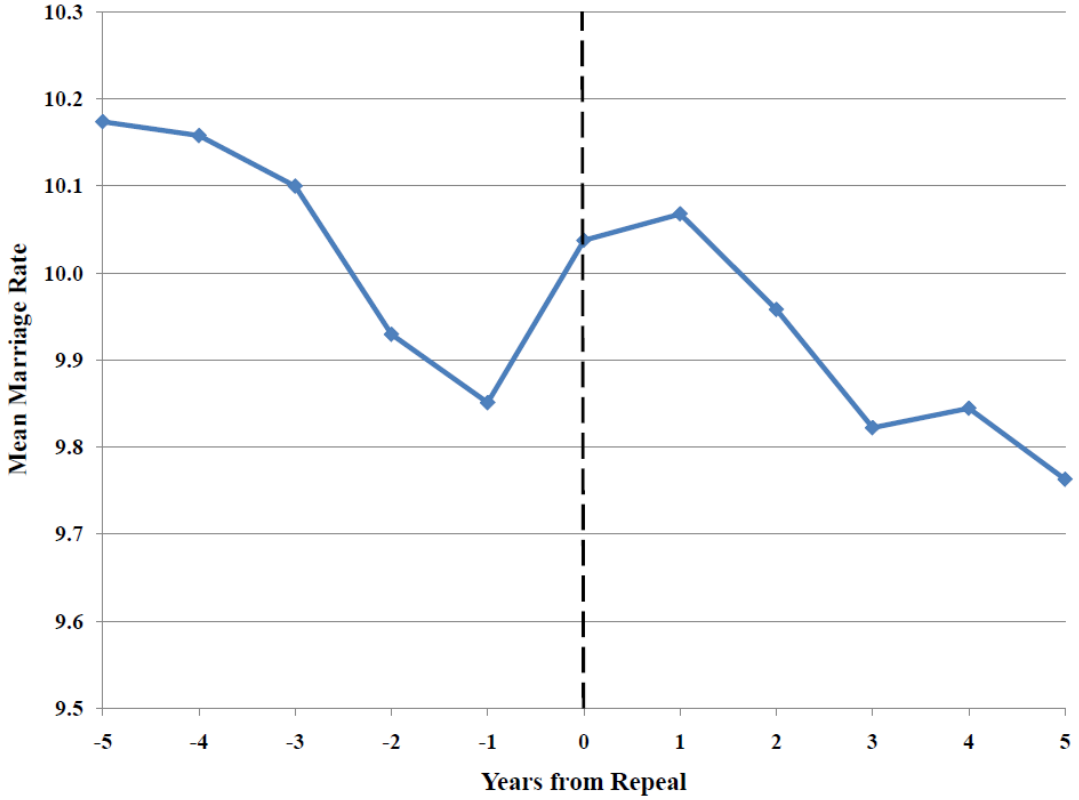
U.S. Department of Health and Human Services (DHH). 2007.

Figure 1. Timing of Blood Test Requirement Repeals 1980-2006



Source: State Statute Books. Hawaii repealed it's law in 1995 and Alaska had no requirements in 1980.

Figure 2: Effect of Blood Test Requirement Repeal on Marriage Licenses Issued



Source: CDC reports of state marriage rates, 1975-2005. Mean marriage rate is the average marriage rate for the 24 states who had a blood test requirement in place in 1980 but who repealed the law by 2000 (with the exception of California which is omitted because of missing data).

Table 1: Effect of Blood Test Laws on Number of Marriage Licenses Issued by the State, per 1,000 State Residents

1980-2006

	All	Omit HI & NV	All	Omit HI & NV
Effect of Blood Test Requirement	-1.8649*	-0.5346**	-0.3959*	-0.5032**
	(1.0929)	(0.2617)	(0.2238)	(0.1990)
State and Year Fixed Effects	Yes	Yes	Yes	Yes
State-Specific Time Trends	No	No	Yes	Yes
Average Marriage Rate	10.81	9.01	10.81	9.01
(std. dev)	(12.28)	(2.17)	(12.28)	(2.17)

1990-2006

	All	Omit HI & NV	All	Omit HI & NV
Effect of Blood Test Requirement	-1.699792	-0.8760**	-0.8390**	-0.8760**
	(0.6261)	(0.2438)	(0.2184)	(0.2298)
State and Year Fixed Effects	Yes	Yes	Yes	Yes
State-Specific Time Trends	No	No	Yes	Yes
Average Marriage Rate	9.91	8.36	9.91	8.36
(std. dev)	(10.04)	(2.02)	(10.04)	(2.02)

* Indicates significance at 10%; ** indicates significance at 5%. Standard errors are clustered at the state level and are in parenthesis. Observations are at the state-year level, and data are from CDC reports of state marriage rates, defined as the number of marriage licenses issued per 1,000 people. Nevada and Hawaii are dropped from the second and fourth specifications because of high marriage rates (52.8 and 22.3 respectively in 2006).

Table 2. Effect of Blood Test Laws on Number of Marriages per 1,000 State Residents

	All	White	Black	Other
By Groom's State of Residence	-0.1978*	0.0626	-0.5811	-0.1433
	(0.1181)	(0.1499)	(0.3746)	(0.1546)
By Groom's State, Age<30 Only	-0.2524	-0.0263	-0.7615**	-0.1905
	(0.1603)	(0.1863)	(0.3303)	(0.2235)
By Bride's State of Residence	-0.2041	0.0236	-0.2541	-0.2165**
	(0.1238)	(0.1294)	(0.2781)	(0.1268)
State and Year Fixed Effects	Yes	Yes	Yes	Yes
State-Specific Time Trends	Yes	Yes	Yes	Yes
Avg. Marriages per 1000 people, all ages	7.85	6.67	6.55	2.07
(std. dev.)	(3.33)	(4.41)	(5.17)	(1.97)

* Indicates significance at 10%; ** indicates significance at 5%. Standard errors are clustered at the state level and are in parenthesis. Observations are at the state-year level, and data are from Vital Statistics Marriage License Records for reporting states, from 1981-1995. Maine is omitted in 1995 due to data errors. The dependent variable is number of observed marriages for state residents, per 1,000 residents, by race. Marriage rates for "all" are higher than for the groups separately because the full sample includes marriages for which no race is reported (about 25% of the sample). State-specific time trends are quadratic.

Table 3. Effect of Blood Test Laws on Where Marriage License is Obtained

Panel A: Effect of Blood Test Laws on Fraction Marrying In State of Residence

	All	White	Black	Other
By Groom's State of Residence	-0.0154*	-0.0133*	0.0079	-0.0371
	(0.0080)	(0.0074)	(0.0165)	(0.0360)
By Groom's State, Age<30 Only	-0.0122**	-0.0102	0.0067	-0.0422
	(0.0059)	(0.0061)	(0.0135)	(0.0372)
By Bride's State of Residence	-0.0158**	-0.0128*	-0.0009	-0.0342
	(0.0074)	(0.0070)	(0.0119)	(0.0244)
State and Year Fixed Effects	Yes	Yes	Yes	Yes
State-Specific Time Trends	Yes	Yes	Yes	Yes
Mean by Groom's State, All Ages	0.7280	0.5982	0.6113	0.6071
(std. dev.)	(0.3255)	(0.4289)	(0.4353)	(0.4364)

Panel B: Effect of Blood Test Laws on Fraction Marrying in Adjoining State

	All	White	Black	Other
By Groom's State of Residence	0.0137	0.0049	0.0107	0.0111
	(0.0084)	(0.0095)	(0.0230)	(0.0357)
By Groom's State, Age<30 Only	0.0109	-0.0005	0.0182	0.023
	(0.0073)	(0.0104)	(0.0312)	(0.0405)
By Bride's State of Residence	0.0118	0.0046	-0.0008	0.0294
	(0.0071)	(0.0098)	(0.0188)	(0.0655)
State and Year Fixed Effects	Yes	Yes	Yes	Yes
State-Specific Time Trends	Yes	Yes	Yes	Yes
Mean by Groom's State, All Ages	0.1412	0.1942	0.1592	0.1810
(std. dev.)	(0.1665)	(0.2362)	(0.2384)	(0.2742)

* Indicates significance at 10%; ** indicates significance at 5%. Standard errors are

clustered at the state level and are in parenthesis. Observations are at the state-year level, and data are from Vital Statistics Marriage License Records for reporting states, from 1981-1995. Maine is omitted in 1995 due to data errors. The dependent variable is number of observed marriages for state residents, per 1,000 residents, by race. Means for "all" include marriages for which no race is reported (about 25% of the sample).State-specific time trends are quadratic.

Table 4. Effect of Blood Test Laws on Likelihood of First-Time Mothers Being Married at time of First Birth

A. All first time mothers

	All Mothers	Black	White	Other
Blood Test	-0.0139	-0.0021	-0.0011	-0.0568***
	(0.0090)	(0.0030)	(0.0054)	(0.0196)
State and Year Fixed Effects	Yes	Yes	Yes	Yes
State Specific Time Trend	Yes	Yes	Yes	Yes
Observations	1173	990	990	990
Mean marriage rate for sample	0.7256	0.3374	0.7998	0.6555

B. First time mothers ages 18-25

	All Mothers	Black	White	Other
Blood Test	-0.0195	-0.0028	0.0005	-0.0669***
	(0.0135)	(0.0045)	(0.0045)	(0.0225)
State and Year Fixed Effects	Yes	Yes	Yes	Yes
State Specific Time Trend	Yes	Yes	Yes	Yes
Observations	1173	990	990	990
Mean marriage rate for sample	0.5957	0.2193	0.6737	0.5499

Standard errors are clustered at the state level. Data are from Natality Detail Files, 1982-2004. Unit of analysis is the state-year and includes all 50 states plus the District of Columbia. Observations are weighted by the number of mothers in each state-year. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively. Observation counts differ between all mothers and the racial breakdown because some state-years did not have information on the mother's race.

Table 5: Effects of Blood Test Laws on Likelihood of First-Time Mothers Ages 18-25 Being Married at Time of First Birth

	All Mothers	<HS Degree	≥HS Degree	White mothers	Black Mothers	Other Mothers
Blood Test	-0.0207***	-0.0617***	-0.0116**	-0.0060	-0.0013	-0.0613***
	(0.0075)	(0.0155)	(0.0052)	(0.0037)	(0.0050)	(0.0153)
Black	-0.4186***	-0.3370***	-0.4285***			
	(0.0039)	(0.0057)	(0.0038)			
Other race	-0.0659***	0.0170***	-0.0867***			
	(0.0036)	(0.0051)	(0.0033)			
Less than HS degree	-0.0835***			-0.1261***	-0.0551***	-0.0434***
	(0.0027)			(0.0023)	(0.0020)	(0.0037)
College degree	0.0772***		0.0727***	0.0774***	0.0634***	0.0874***
	(0.0010)		(0.0009)	(0.0013)	(0.0014)	(0.0019)
Age of Mother	0.0563***	0.0356***	0.0596***	0.0598***	0.0483***	0.0479***
	(0.0007)	(0.0006)	(0.0007)	(0.0009)	(0.0004)	(0.0009)
State, Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
State Specific Time Trend	Yes	Yes	Yes	Yes	Yes	Yes
N	14,468,506	2,463,771	12,004,735	7,699,378	1,958,099	2,780,553
Mean marriage rate for sample	0.588	0.435	0.533	0.667	0.211	0.532

Standard errors are clustered at the state-year level. Data are from Natality Detail Files, 1982-2004. Sample based on first time mothers ages 18-25 for the years 1982-2004. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

Table 6. Effects of Blood Test Laws on Current Marital Status among Mothers Whose First Child was Born in the Last Three Years.

	Married [mean=0.812]	Cohabiting [mean=.0782]	Single [mean=0.110]
Blood test	-0.0104	0.0060	0.0044
	(0.0023)	(0.0014)	(0.0018)
Black	-0.3575	0.0399	0.3176
	(0.0028)	(0.0014)	(0.0027)
Asian	0.0537	-0.0258	-0.0279
	(0.0024)	(0.0013)	(0.0020)
Hispanic	-0.0202	0.0070	0.0132
	(0.0018)	(0.0010)	(0.0015)
Other Race	-0.1312	0.0408	0.0904
	(0.0049)	(0.0027)	(0.0042)
Age	0.0039	-0.0029	-0.0010
	(0.0001)	(0.0000)	(0.0000)
HS graduate	0.0578	-0.0225	-0.0353
	(0.0012)	(0.0006)	(0.0009)
Some College	0.1016	-0.0444	-0.0572
	(0.0011)	(0.0007)	(0.0009)
College Degree	0.1694	-0.0722	-0.0972
	(0.0009)	(0.0006)	(0.0008)
Graduate Degree	0.1383	-0.0576	-0.0807
	(0.0009)	(0.0005)	(0.0007)

Notes: Data are from the 1990 and 2000 Census (5% and 1% samples) and 2000-2005 American Community Survey. Excludes children who are listed as grandchildren. Includes state and year fixed effects. Results reported are marginal effects. Standard errors in parentheses. N=504,000.

Table 7: Effects of Blood Test Requirements on Other State-Level Outcomes.

	Population	School Spending	Democrat won state vote for President
Blood Test	14.75	211.1	-0.146
	(10.54)	(112.7)	(0.106)
State and year fixed effects	Yes	Yes	Yes
State time trends	Yes	Yes	Yes
Observations	765	459	357
Mean for sample	601.2	7,070.5	0.356

Notes: Unit of observation in the state-year (includes DC). Population is number of people in the state ages 18-25 measured in 1,000s (1990-2004) and comes from the National Cancer Institute. School spending is amount spent on education per student (1990 and 1995-2002). Democrat won state vote for President is measured at four year intervals (1980-2004).