

# Affirmative Action Policies and Interracial Marriage

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November 22, 2021

## Abstract

If affirmative action policies induce more exposure of whites to minorities on the job, then this can theoretically improve race relations making these policies only necessary in the short run. However, it has been argued that affirmative action policies can have negative long-term consequences on the minorities they are designed to help if the policies result in resentment among members of the majority group. This paper explores the broad relationship between affirmative action policies and race relations by examining how interracial marriage patterns -- a readily available measure of race attitudes -- change in response to the enactment of state affirmative action laws. Specifically, this paper exploits time and state variation in initiating affirmative action laws along with fact that state affirmative action policies directly affect only public-sector employees. Using a triple difference model, I find that the probability of a white male having a black wife increases by 0.07 percentage points in response to being exposed to affirmative action policies given when he married, where he lives, and whether he is a public sector worker. Results for black males are sensitive to estimation technique. Furthermore, interracial marriage decisions for females, regardless of race, are not affected by state affirmative action policies. Taken together, these results suggest that affirmative action laws improve race relations but with important gender and racial differences.

JEL codes: J12 J15 J78

Keywords: affirmative action policy, interracial marriage, race relations

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## 1. Introduction

Affirmative action is one of the most controversial labor market policies in the United States. Supporters believe that affirmative action helps to promote equal employment opportunities for women and minorities. If affirmative action policies are successful in increasing exposure of white males to underrepresented groups, in the long run, this could lead to more positive feelings towards people of different races. On the other hand, opponents argue that these policies do not address the root sources of inequality, and in fact, preferential treatment on the basis of race and gender is wrong regardless of who gets the preferential treatment. If this is the case, affirmative action policies might increase any feelings of resentment toward minorities in the long run. In either case, the long-term impacts of these policies depend on how they change attitudes towards people of different races, which in turn are likely to affect personal relationships between people of different races.

Understanding whether affirmative action policies shape people's attitudes is empirically challenging. Previous literature has focused on surveys that ask people directly how they feel about affirmative action policies and whether they think these policies have changed race relationships (e.g., Arredondo and Sax 1999; Kuklinski et al. 1997, Harrison et al. 2006, etc.). However, studies relying on questionnaires typically have small sample sizes, and the concern that people may not respond truthfully to survey questions remains.

In this paper, I study the relationship between affirmative action policies and people's likelihood of entering into an interracial marriage. Interracial marriages are a readily available measure of acceptance levels between different racial groups that can address the shortcomings of using self-reported attitudes in questionnaires. In fact, interracial marriages have been argued to be the best marker of the social distance between groups (Gullickson 2006).<sup>1</sup>

Affirmative action policies may affect interracial marriage patterns in several ways. On the one hand, if the policies are effective at increasing minority representation in the workplace (Conrad, M 2017, Kurtulus 2012, 2013, 2016), then increased exposure to people of a different race may ultimately result in more interracial marriages. The contact hypothesis suggests that

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<sup>1</sup> Fryer Jr (2013) discusses interracial intimacy may be more appropriate measurement of race relations. However, because of interracial marriage is solid and verifiable, it is less likely to have a biased estimation than questions regarding cohabitation, dating, or sexual preferences.

contact with members of different racial groups can promote positive and tolerant attitudes toward other groups (Williams Jr 1947, Allport 1954). It may also be that with increased on-the-job exposure to people of different races, people become more likely to consider interracial relationships with people they meet outside of the workplace. On the other hand, affirmative action policies are often controversial and might lead to animosity toward people of different races (National Public Radio Staff, 2014), especially policies that generally entail the preferential treatment of persons who possess certain social identities based on demographic status (Fryer and Loury, 1993). If this is the case, the enactment of state-level laws may lead to negative attitudes toward different groups and thus, these groups are less likely be interracially married. Backlash theory predicts that attitudes might become negative following legal rulings (Flores and Barclay 2016).

During the 1970s and 1980s, many states instituted state-level affirmative action laws for state and local government employment. The policies include statements prohibiting discrimination, special recruitment efforts, and special assistance programs to members of underrepresented groups (Holzer & Neumark 2000). There are 36 states have had state-level affirmative action legislation at some point; some of these have since been banned.<sup>2</sup> The time and state variation in state affirmative action policies provide a natural experiment for measuring whether affirmative action policies have unintended effects on people's marriage decisions.

This paper uses data from the 2008-2018 American Community Survey (ACS), obtained from the Integrated Public Use Microdata Series (IPUMS) (Ruggles et al. 2020) to evaluate the implications of affirmative action policies on the likelihood of black-white interracial marriages. I start the analysis by estimating a double-difference model. Specifically, I consider whether people living in a state that had an affirmative action policy in effect in the year in which they got married are especially likely to be in an interracial marriage. Even after accounting for a full set of control variables, survey year fixed effects, as well as state fixed effects and year of marriage fixed effects, the results suggest that there is no impact of affirmative action laws on the likelihood of interracial marriage. However, caution should be used in interpreting these estimates because it may be that the states that are trending towards relatively worse race relations are more likely to adopt

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<sup>2</sup> I focus on two groups in the main analysis: states that *have ever had* state affirmative action legislation – including those that still have active state affirmative action laws and those that have rescinded their affirmative action, and states that *have never* passed state-level affirmative action laws. Section 4 discusses methodology in detail.

affirmative policies as a way to address these underlying issues. In this case, the model would make it more difficult to identify impacts even if affirmative action policies did indeed increase interracial marriages and improve race relations more generally.<sup>3</sup>

In order to address this concern, I use a triple-difference specification strategy as the preferred model in the paper. State affirmative action laws directly impact only the labor markets of public-sector workers. I can therefore examine whether people living in states which had state affirmative action laws in effect at the time of marriage were especially likely to have a different race spouse if they were public sector employees. Using this the triple-difference strategy, I control for unobserved state factors that could potentially be correlated with passing the state affirmative action laws, such as general trends in race relations in a state that do not differ by occupation. Since public-sector workers account for only a small portion of the state population, they are unlikely to have enough political power to change the laws based on their own preferences.

I find that white males are 0.07 percentage points more likely to be married to black women if they were likely exposed to affirmative action policies at the time of marriage given their state of residence, year of marriage, and whether they work in the public sector. The average share of black-white marriages is 0.0039 in the sample, and thus the 0.07 percentage point represents a 19 percent increase. This result is robust to using a sample of individuals who married only once. This result is also robust to a specification that excludes states that did not have an affirmative action law in effect at the time of marriage but did have one at some point in the past. As a falsification test, I also show that state affirmative action laws have no impact on federal sector workers, providing further evidence that my main estimates can be given a causal interpretation.

I find mixed results when estimating the likelihood that black males marry white females. Although the main triple-difference model suggests that black males are more likely to be married to white females if exposed to affirmative action policies at the time of marriage, this result is not very robust. For example, if the sample is limited to black males in their first marriage, estimates are no longer statistically significant. The result is also not robust to a specification that excludes states that had an affirmative action policy but have since repealed it. This result may not be

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<sup>3</sup> Alternatively, if states with improving race relations were most likely to adopt the policies, then this identification strategy may deliver zero impacts even if the passing of affirmative action laws led to fewer interracial marriages. It seems unlikely, however, that affirmative action policies would generate severe backlash in states with improving race relations.

surprising if without affirmative action policies, white males hold more negative attitudes toward racial minorities than black males do toward whites. The purpose of affirmative action policies is to improve labor market outcomes for the disadvantaged group. It can be argued that white males tend to hold the most negative attitudes because they are the least likely to be beneficiaries of affirmative action. Therefore, the lack of consistent results for black males suggests that affirmative action policies have more substantial effects for people who held more negative attitudes toward racial minorities at the beginning of the sample period. Furthermore, the results do not show a strong impact of state affirmative action policies on either white female marry black males or black females marry white males. Finally, I also show that the effects of affirmative action laws differ substantially by age at the first marriage and education level for white men.

This study makes two main contributions. First, this is the first paper to consider the relationship between affirmative action policies and interracial marriage. While other work has examined the impact of affirmative action policies on attitudes reported in surveys, this is the first to consider the impact on actual behaviors. Second, the paper provides a methodological innovation. This study builds on Kurtulus (2013), which uses a double-difference model to investigate the implications of removing state affirmative action laws on the share of minorities and women employed in the public-sector. In this paper, I use a triple-difference model to difference out any underlying changes in trends affecting states that adopt affirmative action policies.

The remainder of the paper is organized as follows. Section 2 presents institutional background and related literature. Section 3 details the dataset. Section 4 discusses the estimation strategy. Sections 5 and 6 present the main results and robustness tests. Section 7 discusses heterogeneity. Section 8 concludes.

## **2. Institutional Background and Related Literature**

### ***2.1 Historical and Legal Context of State Affirmative Action***

The term "affirmative action" first appeared in public and was made a federal law by President John F. Kennedy in 1967 with Executive Order 10925, which required all government contractors to take affirmative action to ensure that all applicants have equal employment opportunity

regardless of their "race, color, creed, religion, or national origin." In 1965, President Lyndon B. Johnson signed Executive Order 11246, which further required firms with federal contracts to take proactive steps to remedy inequalities produced by past discrimination. At the same time, Title VII of the Civil Rights Act of 1964 outlawed discrimination on the basis of race, color, religion, sex, or national origin in all but the smallest private firms. Shortly after the Title VII of the Civil Rights Act of 1964 and Executive Order 11246, a 1967 Commission on Civil Rights Survey found extensive discrimination against minorities in state and local government (Kellough 1989). In order to address discrimination, many states adopted state-level affirmative action laws that aimed to foster minority representation and employment in state and local government agencies and higher education institutions. These laws typically include languages that state and local government agencies must collect and report data on "underutilization" of women and minorities in any job categories and set "specific practical steps" to correct such underutilization (Society for Human Resource Management 2018).

In the late 1970s and early 1980s, many states passed their affirmative action laws for state and local government employment. For example, in 1973, Ohio passed legislation requiring all public agencies to implement affirmative action in employment and submit affirmative action reports to the State Division of Equal Employment Opportunity (Ohio Laws and Rules). In 1974, California began requiring all public agencies to submit affirmative action reports to State Personnel Board (SPB), responsible for the oversight and development of affirmative action programs (Thomas and Garrett 1999). Similarly, in 1975, Connecticut passed a state law requiring each state agency and department to develop an affirmative action plan and submit semiannually affirmative action reports to the Commission on Human Rights and Opportunities, which reviews and approves the plans. Further, in 1976, Colorado passed state affirmative action laws, which require the State Personnel Board to develop and implement an affirmative action plan for state employment. In addition, the department must annually document methods of increasing the employment of underrepresented classes of individuals. The Colorado Department of Labor and Employment also collects and distributes demographic information on the labor market for the reference of employers developing affirmative action plans.

Table 1 provides detailed information about states that passed affirmative action laws. There is now a total of 36 states who have ever had state-level affirmative action laws in public

employment. Additionally, some states have had such policies at some points and later banned them, and some states never formally passed state-level affirmative action laws.

## ***2.2 Related Literature***

This study contributes to a research stream examining the consequences, often unintended, of changes in public policies on public attitudes. For example, previous studies have examined how *Roe v. Wade* in 1973 (the constitutional right to access abortion) shifted people's attitudes about abortion (e.g., Ebaugh and Haney 1980, Hanley et al. 2012, etc.) and the relationship between LGBT rights and attitudes toward sexual minorities (Flores and Barclay 2016, Astoy 2021, etc.).<sup>4</sup>

Theoretical model has identified two potential possibilities through which a political event might change mass attitudes, especially when the policy introduction is related to minority population. First, the legitimacy model predicts that the policy implementation may increase the acceptance level and deliver positive attitudes towards people of underrepresenting groups (Flores and Barclay 2016, Astoy 2021). Second, the backlash model predicts that attitudes about underrepresented groups might become substantially more negative following the policy implementation (Rosenberg [1991] 2008).<sup>5 6</sup>

Under these two models, within the context of affirmative action policies, if the policies increase the representation of minorities on the job, the increased exposure of racial minorities could improve attitudes, and therefore, more interracial marriage. This is also approved by contact

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<sup>4</sup> For example, Ebaugh and Haney (1980) find that after *Roe v. Wade* 1973, people generally increase positive attitudes toward legal abortion. Hanley et al. (2012) find that members of diverse groups who are aware of the *Roe* decision are more supportive of abortion than their decision-unaware counterparts. Furthermore, Bishin et al. (2016) find no evidence of opinion backlash following the introduction of marriage equality. Flores and Barclay (2016) discover that residents of states that had same-sex marriage policy introduced has the greatest reduction of anti-gay attitudes. Aksoy et al. (2020) show that same-sex relationship recognition policies significantly improved attitudes toward sexual minorities in Europe.

<sup>5</sup> Flores and Barclay (2016) also discuss the other two possible situations, polarization, and consensus. Polarization model predicts that introduction of new policy may widening the differences between supporters and opponents. Furthermore, consensus model predicts that the mass attitudes shape policy and policy bear no subsequent impact on mass attitudes.

<sup>6</sup> Coate and Loury (1993) use job assignment model to understand whether affirmative action policies affect employers' negative stereotypes about minority workers. They state that affirmative action policies could eliminate employers' negative stereotype and reduce inequality in the long term, but it can also have the opposite outcomes, where affirmative action policies worsen employers' views about minority groups.

hypothesis (Williams Jr 1947, Allport 1954), which suggests that contact with members of different racial groups can promote positive and tolerant attitudes toward other groups. On the other hand, if people held more negative views toward affirmative action policies at the beginning, then they are more likely to deliver negative beliefs about underrepresented groups. Therefore, if the enactment of affirmative action laws makes people view racial minorities more negatively as the minorities are the beneficiaries from this policy, then they may be less likely to consider marry someone from a difference race.

Empirically, Beaman et al. (2008) find that gender quota policies in Indian village councils lead to positive attitudes toward female leader effectiveness and weakens stereotypes about gender roles in public and private life.<sup>7</sup> Additionally, Perry (2012) uses survey data to find that a greater presence of blacks in the workplace results in more favorable attitudes among whites toward interracial marriage. On the other hand, Fryer Jr (2007) shows that interracial marriages in the U.S. are related to region and states of residence. He finds that intermarriage rates are higher for blacks in states that either never had anti-miscegenation laws or voluntarily repealed such laws. In forced-to-repeal states, it is more consistent with the backlash theory where the policy was imposed upon the local culture.<sup>8</sup>

To date, based on my knowledge, no prior work exists that examines the relationship between affirmative action policies and interracial marriage. Methodologically, my research design is built on Kurtulus (2013). Kurtulus (2013) uses a difference-in-difference model to examine the effects of removing state affirmative action laws on the share of minority and female employment in the public sector. She finds sharp declines in employment of black and Hispanic women in public sector jobs following affirmative action bans. A potential concern with this methodology is that there might be other factors are correlated with the demand of public-sector employment at the same time of the affirmative action bans. It is therefore the declines of women and minorities in the public-sector could be the differences in labor market demand among states but unrelated to the policies. In this study, I use a triple-difference model. I add a third comparison group, public-sector vs. non-public sector employees. In doing so, I can control for any unknown

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<sup>7</sup> Affirmative action also involves gender equality in hiring. When the numbers of female employees are low in the workplace, employers should make effort to hire more females in order to satisfy the requirement of affirmative action laws.

<sup>8</sup> Anti-miscegenation laws prohibit marriage between white and non-whites. It has been eradicated nationwide after Loving v. Virginia in 1967.

differences in labor market conditions between white and non-whites workers before and after the policies across affirmative action states and non-affirmative action law states.

### 3. Data

The data for this study come from the 2008-2018 American Community Survey (ACS), obtained from the Integrated Public Use Microdata Series (IPUMS) (Ruggles et al. 2020). The ACS contains information on a broad range of individual characteristics, such as the year of most recent marriage. The sample in this analysis is limited to all non-institutionalized, married U.S.-born individuals. Fryer (2007) argues that culture, social norms, and acceptance of interracial marriage may be different between immigrants and U.S. born individuals. Therefore, I limit the sample to U.S.-born individuals. All married individuals refer to individuals who categorize married-spouse present and separate on ACS, married – spouse absent, divorced, and widowed are dropped from the sample because there is no information to determine whether the last marriage was an intermarriage. Interracial marriage is defined as a marriage between two individuals who report a different race at the time of the survey. It is worth noting that interracial marriage was allowed throughout the country after a 1967 supreme court decision made anti-miscegenation, prohibiting marriage between whites and non-whites, laws illegal.<sup>9</sup> Hence, the year of marriage in the sample ranges from 1967 (the year that individuals became legally able to marry interracially nationwide) to 2018. In this study, I consider the marriage patterns of black and white individuals. Individuals of all other racial groups (Native Americans, Alaska Natives, Asians, Pacific Islanders, and Others) and individuals without valid responses to the race or their spouses' race are dropped from the sample.

Furthermore, individuals who report as federal workers and military personnel are excluded from the main analysis, although I do consider federal workers in a placebo test. Specifically, there is another type of affirmative action policy concerning the federal workers – federal affirmative action laws – whose requirements and regulations are similar to those of state

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<sup>9</sup> Anti-miscegenation laws prevented people from marrying outside their race. The laws were enforced as early as the 1600s. In the U.S. history, nine states and D.C. have never banned interracial marriage. Twenty-five states have repealed anti-miscegenation laws at some point before 1967. In 1967, the last sixteen states were forced to repeal anti-miscegenation laws by the U.S. Supreme Court ruling in the case of *Loving v. Virginia*, 388 U.S. 1 (1967).

affirmative action laws. Therefore, although federal workers are public-sector employees, I excluded the federal workers in the main analysis, given they are not covered by state affirmative action laws. Furthermore, the sample excludes individuals who are not in the labor force or who do not work for wages.

I follow Kurtulus's (2013) timetable of state affirmative action laws for each state. I dropped Hawaii and the District of Columbia from the sample due to ambiguous information on affirmative action policies. In addition, I eliminated Michigan from the sample because it started affirmative action policies before anti-miscegenation laws were banned. Table 1 provides detailed information about the timing of state affirmative action laws. The majority of U.S. states had passed state-level affirmative action laws for public-sector employment during the 1970s and 1980s, with the exception of Texas and Arkansas; their laws were effective in 1993. Due to the controversial nature of the affirmative action laws, some states banned them at the state level. For simplicity, this analysis therefore categorizes states into two groups: states that *have ever had* state affirmative action legislation – including those that still have active state affirmative action laws and those that have rescinded their affirmative action laws (the treatment group) and states that *have never* formally passed state-level affirmative action laws (the control group). In total, the sample includes 36 states which served as the treatment group, and 13 states which served as the control group.

Finally, the empirical analysis also includes several individual-level and county-level control variables that could potentially affect interracial marriage. These include age, age square, education dummy, and income. Moreover, county-level population data were retrieved from the National Cancer Institute Surveillance, Epidemiology, and End Results Program (SEER).<sup>10</sup>

Table 2 reports the summary statistics for the variables used in this analysis, with affirmative action law states and non-affirmative action law states separately. By comparison, the share of black and white marriages is very similar between affirmative action states and non-affirmative action states. Specifically, black and white couples constitute 1.2 percent of all married couples in affirmative action states and 1 percent in non-affirmative action states. Furthermore, the share of states workers is slightly higher in affirmative action states compare to non-affirmative

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<sup>10</sup> Since SEER is the best available data that I can find to calculate the population, I include it as the population control. Working age in this analysis is defined as 16 to 64.

action states. In particular, there are approximately 15.7 percent state worker in affirmative action states, while the state workers in non-affirmative action states are 14.8. Finally, both the share of blacks and the share of working-age blacks appear to be higher in non-affirmative action states than affirmative action states.

## 4. Methodology

### 4.1 Difference-in-Difference Estimate

To estimate the impact of affirmative action policies on interracial marriage, I begin with a difference-in-difference model. I compare the change of black and white marriage rates in states with affirmative action laws if people's years of marriage overlapped with the affirmative action law to the outcomes in states without affirmative action laws. Specifically, I use individuals who got intermarried in a year if there were affirmative action laws in their state of residence as the treatment group and those who got intermarried, but their state of residence never experienced affirmative action laws as the control group. The idea behind this model is that I assume whites' attitude toward blacks would have developed homogeneously in states with and without state affirmative action laws had they not been enacted. Thus, individuals who are exposed to affirmative action policies (have affirmative action laws) could be affected more by these policies and therefore more likely to interracially married than those who were not exposed to these policies (do not have affirmative action laws). The difference-in-difference model is shown below:

$$I_{i,s,m,t} = \beta_0 + \beta_1 \cdot AA_{s,m} + \beta_2 \cdot X'_{i(c),s,t} + \theta_s + \lambda_m + \delta_t + \varepsilon_{i,s,m,t} \quad (1)$$

where  $I_{i,s,m,t}$  is a binary variable equaling 1 for an individual  $i$  living in state  $s$  in year  $t$  got married in year  $m$  to a person of a different race.  $AA_{s,m}$  is an indicator equaling 1 if there was an affirmative action law in place in state  $s$  in year  $m$ . The variable of interest,  $\beta_1$ , estimates the differences in the share of black-white couples between affirmative action states and non-affirmative action states if people got married when there were affirmative action laws in their state of residence.  $X_{i(p),s,t}$  are controls for individual characteristics and county-level black population. Further,  $\theta_s$  is state fixed effects.  $\lambda_m$  is year of marriage fixed effects.  $\delta_t$  is survey year fixed effects. State fixed effects include to control any time-invariant unobserved state attributes that may influence interracial marriage. Year fixed effects and year of marriage fixed effects

include to control for any economy-wide shocks and general trends affecting intermarriage across all states.

The key assumption of the difference-in-difference model above is that attitudes about people of different races are identical. The estimation would be biased if race relations were correlated with the enactment of state affirmative action laws. For instance, racial relations could have already been improving in a certain state before the implementation of the state affirmative action laws. Increased interracial marriages might not be a direct consequence of affirmative action laws.

#### ***4.2 Triple-Difference Estimate***

To address above concerns, I therefore use a triple-difference model. I add to the double-difference model an additional comparison group: public-sector employees vs. non-public sector employees. Specifically, the triple-difference model compares the double differences (as constructed in equation (1)) for public-sector employees and the same double differences for non-public sector employees. The use of comparison between public-sector employees and non-public sector employees is more credible as (1) state affirmative action laws only apply to public-sector employees, and (2) the share of public-sector employees constitutes a small proportion of the total population, and it is less likely have the power to vote to pass the policies.<sup>11</sup> However, it is worth to noting that although state affirmative action laws cover only public-sector employees, any long-term trends in a state related to race relations are likely to affect all people in the state.

The triple-difference model is the more preferred specification in this analysis, and it is calculated by estimating the following regression:

$$I_{i,s,m,t} = \beta_0 + \beta_1 \cdot Pub_{i,s,t} \cdot AA_{s,m} + \beta_2 \cdot AA_{s,m} + \beta_3 \cdot Pub_{i,s,t} + \beta_4 \cdot X'_{i(c),s,t} + \theta_s + \lambda_m + \delta_t + \varepsilon_{i,s,m,t} \quad (2)$$

where I add to the equation an indicator variable  $Pub_{i,s,t}$  that equals 1 if a person  $i$  is a state or local government employee and living in state  $s$  in year  $t$  and interact it with the double-difference estimator (as defined in equation (1)) to construct a triple-difference estimator. The

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<sup>11</sup> The share of public-sector employment is about one fifth of the total employed.

primary parameter of interest is  $\beta_1$ , which yields the triple-difference estimate. In particular, the coefficient measures the effect of affirmative action laws on the average share of black and white marriage among public-sector workers relative to non-public-sector workers in state affirmative action laws compare to the same differences in states without affirmative action laws.

Additionally, except including state fixed effects, year fixed effects, and year of marriage fixed effects as shown in equation (1), I also include state-specific linear time trend, state-by-year of marriage fixed effects and occupation fixed effects. State-specific linear time trend and state-by-year of marriage fixed effects are included to control for possible trend differences across states before initiating of affirmative action policies that could potentially confound the effect of passing the policies, and thus affect intermarriage across states. Occupation fixed effects include to control unobserved differences in human capital and working conditions across the public sector and non-public sector workers that could affect interracial marriage.<sup>12</sup> Finally, standard errors are clustered at the state level to account for arbitrary correlation of residuals.

## 5. Results

### 5.1 *The Difference-in-Difference Estimate*

Table 3 displays the results of a double-difference model based on equation (1), and columns 1-3 present the coefficient with increasing controls. I run the equation separately for four different intermarry combinations: white male and black female marriage, white female and black male marriage, black male and white female marriage, and black female and white male marriage. Doing so, permits me to estimate the effect of affirmative action laws on the change of racial attitudes for different gender and racial categories. In addition, for simplicity, I report only the estimated coefficient on the double-difference estimator and the associated standard errors, which the errors are robust to clustering at the state level.

Panel A of table 3 presents the results of white males who married black females. column (1) reports the coefficient of the double-different estimates without any controls. The estimate

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<sup>12</sup> The occupational group is based on the broad occupation classification codes in ACS. Total has 9 occupation categories. There are including: managerial and professional; professional specialty; technical; sales and administrative support; service; farming, forestry, and fishing; precision production, craft, and repair; construction trades; and transportation.

suggests that the state affirmative action laws are associated with a 0.01 percentage point higher the likelihood of white males having black wives. However, the estimate is insignificant. Moreover, the estimate becomes negative when adding individual-level characteristics and county-level population controls in column (2), and this estimate change to positive again when includes state, survey year, and year of marriage fixed effects in column (3). Panel B reported the results of white females who have black husbands, and it indicates the same patterns as shown in panel A. The estimate coefficient is insignificant and positive in the model without any controls and turns to negative after including all set of covariates. But once adding a full set of fixed effects, the result is positive again.

Similarly, the evidence shows that having state affirmative action laws do not affect the odds of black men marrying white women (shown in panel C). I find no statistically significant results for all three models. Moreover, there is no statistically significant evidence for the relationship between state affirmative action laws and black women who marry white men, as is shown in panel D.

It is not surprising that I do not find any significant impact by using the double-difference model. In fact, states that enact affirmative action policies may have already had positive race relations before passing such laws. If this is the case, people who live in these states could have better attitudes towards minorities and be more likely to consider intermarriages. In my estimation strategy, I would overestimate the impact of the policies. On the other hand, if states with deteriorating race relations are more likely to enact state affirmative action laws, then the double-difference model would underestimate the impact.

I now turn to a triple-difference model, comparing the change of black and white marriage rates in state and local government workers (relatively to non-state workers) in state with affirmative action laws and the same changes in states without affirmative action laws. The advantage of adding state workers into the model is that the state affirmative action laws have direct effects for state and local government employees, and only around 15 percent of the labor force works in affected jobs. Furthermore, it is difficult to imagine that state and local employees would have different race preferences for reasons that related to affirmative action policies. Even if they did, as these workers only make up 15% of voters, it is unlikely that they alone could be responsible for passing these policies.

## *5.2 The Triple-Difference Estimate*

Table 4 presents the triple-difference estimate based on equation (2) by gender and racial groups. Table 4 is constructed the same way as the table 3. The top two panels (panel A and panel B) reports results for whites who have black spouses, while the bottom two panels (panel C and panel D) reports results for blacks who have white spouses.

Look first at panel A, the results in panel A suggest that white men who work in the public sector are more likely to marry black spouses if the affirmative action law occurred in their state of residence at the year of marriage. The positive effect of affirmative action laws on white male and black female marriage is larger in magnitude when adding more control variables and a set of fixed effects. In particular, a public-sector white male increases the likelihood of marrying a black wife by 0.07 percentage points if there were affirmative action laws in his state of residence at the year of marriage, and the estimate is statistically significant. It is worth noting that the mean share of white male and black female marriage is 0.0036, meaning the 0.07 percentage points increase after affirmative action laws represents a 19 percent increase in the rates of white men having black wives. In panel B, which reports the results for white females who have black husbands. The estimate suggests that affirmative action policies negatively effect on white female public sector workers who marry black husbands. However, none of the models provide a significant result. One possible reason for this is that affirmative action policies tend to encourage the employment of both women and blacks, and then perhaps black women would be especially more likely to be employed. Therefore, white males should become exposed to substantially more potential spouses than white females, and thus more likely to find satisfied black female spouses.

Panels C of table 4 reports the coefficient estimates of black males who have white wives. The result is mixed. Column 1, which reports the coefficient without any controls, suggests no effect on black men and white women marriage from affirmative action laws. However, when adding more controls (shown in columns 2), the result shows that having affirmative action laws at the state level increase the odds of black men marrying white women by 1.17 percentage points, and this estimate is statistically significant. To further explore this relationship, I add more fixed effects. The estimate is insignificant for the model with state fixed effects, survey year fixed effects, year of marriage fixed effects, and state-by-year fixed effects, while the estimate turns to

statistically significant when adding additional state-by-marriage fixed effects and occupation fixed effects. In the preferred model, which includes a full set of controls and a full set of fixed effects (column 6), the result suggests that the public-sector black male is more likely to marry white female by 1.04 percentage points if there were state affirmative action laws at the year of marriage in his state of residence. The mean share of black male and white female marriage is 0.13, indicating that 1.04 percentage points increases represents an 8 percent increase in the likelihood of black male having white wives following state affirmative action laws. Panel D show the estimate of black female who marry white men. However, there is no statistically significant evidence to support that state affirmative action laws affect black female and white male marriages. The reason behind the different results between black male and female is that, even though the policy induced more employment for black females, unions between black female and white male are still rare in terms of population.<sup>13</sup>

### *5.3 Falsification Test*

Federal worker refers to any position within the branches of government, therefore, federal worker is public sector worker. By definition, state affirmative action laws are not covered federal workers. If the previous results have a causal interpretation, we should find that state affirmative action laws have no impact on the likelihood of interracial marriage among federal workers. Table 5 presents the same triple-difference specification in equation (2) using federal workers instead of state and local government workers. As with the expectation, the estimate coefficient is statistically insignificant for all gender and racial groups. This finding proves that the main triple-difference results can be interpreted as the causal relationship between state affirmative action laws and interracial marriage.

Overall, the regression results -- consistent with legitimacy model -- indicates that affirmative action laws improve race relations, though with gender and racial differences. However, it is still possible that there are any other unobserved factors related to states who passed affirmative action laws and, at the same time, also associated with an increased likelihood of marrying a difference race spouse for both white men and black men. For example, states with

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<sup>13</sup> Fryer Jr (2007) finds that if adjusting the relative population of each racial group, marriage between black female and white male become the least likely combination, given the population weight.

affirmative action laws somehow are associated with the unilateral divorce law enacted in the 1970s, making a higher share of divorce in these states. Therefore, the findings of more intermarriages for white males and black males could be related to more divorces and remarriages instead of affirmative action laws.<sup>14</sup> In the next section, I present several robustness tests to further examine the causal relationship between state affirmative action policies and the likelihood of black and white marriages.

## **6. Robustness**

### ***6.1 Effects for People Only Married Once***

Table 6 presents the results by using the same triple-difference specification strategy in equation (2) with the sample limit to people who married only once. Therefore, in my analysis, I focus on people who choose to marry someone from a difference race group at their first marriage. For the white male and black female combinations (shown in panel A of table 6), the estimate results are consistent with the results reported in table 4. Yet, the magnitude and significance of the coefficients is lower in each of 6 models. This may be because of the restriction to individuals who married only once reduces the sample size. For black men who have white wives (panel C of table 6), I find no impact of state affirmative action policies. There are two possible explanations for this result. First, it could be because of the smaller size after limiting to individuals married only once. Thus, it is easy for sampling noise to become visible when run the regression analysis. Second, it is also could be because of black males tend to marry white females more if they have been married before. For other intermarriage combinations, the results are consistent with the main regression results.

### ***6.2 Effects for States that Always Have Affirmative Action Policies***

The sample in my analysis contains two types of states: states that have ever had – including states that have active affirmative action laws and states that had affirmative action laws but not currently, and states that never had affirmative action laws. For states that have had lapsed affirmative action

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<sup>14</sup> Assortative mating patterns for first marriage and remarriage are different among intermarriage couples (Tucker and Claudia 1990). Typically, the interracial married couples are more likely to have been married before.

laws, it is ambiguous whether an increase in the share of black and white marriage is caused by the changing of race relations during the policy period.<sup>15</sup> It is possible that affirmative action policies have changed attitudes towards individuals of a different race group permanently in these states and banned these policies as they no longer needed. If this is the case, the estimate strategy may underestimate the policy effects as the states who banned such policies later become the control group in my settings. Table 7 presents the estimate for the sample without the later banned states. As shown in the table 7, the coefficient estimates of white men who marry black women is consistent with the main regression results. However, I find no impact of state affirmative action laws on black men who marry white women. Furthermore, I find no impact of state affirmative action laws on other intermarriage combinations. This further suggests that affirmative action laws affect more for white male and black female combinations.

The differences in results between main analysis and robustness tests for black male, I have the following possible explanations. First, the targeting group of affirmative action policies is white male. The policy wants to change white male's stereotypes (hiring discrimination, job promotion discrimination, etc.) towards women and minorities in the workplace. Hence, the affirmative action policies may have more prominent impacts for people who held more negative thoughts towards minorities at the beginning.<sup>16</sup> Second, based on the social exchange theory (Merton 1941, Blau 1964, and Kalmijn 1993), people choose to marry based on several characteristics, such as attractiveness, sense of humor, height, weight, race, wealth, criminal record, and so on. For whites, they are always at the top of the social hierarchy. They marry someone outside their race group comes with a social cost. Therefore, white male is easier to attract black female than black male attracts white female. For the robustness tests, further reduction of the sample size, may leads to less likely to find a significant results for black males.

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<sup>15</sup> There are a total of eight states who banned affirmative action laws. These eight states are: Arizona in 2010, California in 1996, Florida in 2000, Michigan in 2006 (and reversed in 2012), Nebraska in 2008, New Hampshire in 2012, Oklahoma in 2012, and Washington in 1998.

<sup>16</sup> Indeed, as the affirmative action policies benefit women and racial minorities in the workplace, white males are the least favorite group of affirmative action policies. For example, Kuklinski et al. (1997) use a national survey to examine attitudes towards affirmative action. They find that most whites express anger about affirmative action policies. Furthermore, Kravitz and Plantania (1993) find that minorities possess more favorable views towards affirmative action than whites, and women evaluate affirmative action more positively than men.

## **7. Empirical Analysis of White Male and Black Female Marriage**

I now focus on white men to examine how their age at first marriage, educational attainment, and mobility affect their decisions to marry black women.

### ***7.1 Age Effects***

Individuals who are at age 18 or younger are more likely to be single and are more likely to have longer exposure time by affirmative action laws than those who are also single but older than 18 and reside in affirmative action law state. If this is the case, younger groups could have more opportunities to interact with people from different groups and more time to build up their relationships with different race group. Moreover, people who are in their 20s may have different life experiences and acceptance levels toward racial minorities than that those in their 30s. Table 8 reports results based on the main regression model in equation 2 for five different age groups based on their age of first marriage for white men. I report the coefficient of triple-difference estimate with the model of a full set of controls and a full set of fixed effects. The only significant result comes from white males whose ages of the first marriage were between 25-34. In particular, white male public-sector employees aged between 25 to 34 have 0.07 percentage points higher likelihood of marrying black women if their state of residence has affirmative action laws in the year of marriage. This result suggests that the triple-difference estimates presented in table 4 is partially contributed to respondents whose first marriage age were between 25 to 34. This could be because people in their mid-20s to mid-30s may have more life and social experiences, and are, therefore, more likely to accept a spouse of a different race at their first marriage.

### ***7.2 Education Effects***

Table 9 examines the effects by white men's educational attainment. As can be seen, white men with a college degree or beyond exhibit significant and positive effects on the marriage decision to black women. However, I failed to find a statistically significant result for white men who had only a high school education. I also find a statistically significant result for white men who had a less than high school education. This result suggests that people with higher levels of education

are more sensitive to the state affirmative action laws and are more likely to accept people from other racial groups as their spouse than those with lower levels of educational attainment. Indeed, people with greater educational attainment are more likely to meet people of different racial groups on college campuses and in the workplace, compared to people with low educational attainment who are more likely to live in racially segregated neighborhoods and to work in racially segregated job markets (Logan et al, 1996).<sup>17</sup> Second, in terms of social and economic status, white male who have less than high school education may be less attractive to white women, and are thus more likely to consider marry someone with lower social and economic status from a different race group. Finally, the same situation for high school educated white male. They may be less attractive to black female.

### ***7.3 Mobility Effects***

People who get married in a state with affirmative action but later move to another state without affirmative action in the survey response year may present a concern with the empirical strategy of this paper. Fryer Jr (2007) shows that interracial marriage rates in the United State are related to regions and states of residence. Gevrek (2014) also demonstrates that peoples' attitudes toward interracial marriage may differ across states. If this is the case, this analysis will underestimate the effect of the policy on people's likelihood of interracial marriage. In order to address this issue, I restrict the sample to people who live in their state of birth. The results are shown in table 10. The result for white males gives a similar pattern as the baseline result in table 4 but is lower in magnitude.

## **8. Conclusion**

The central debate about affirmative action policies is whether these policies can eliminate discrimination towards underrepresented minority groups. Whether such policies change mass attitudes toward racial minorities is the important component of this question. I answer this question by examining how interracial patterns change in response to the enactment of state

affirmative action laws. Using a triple-difference strategy, I find that white (black) males employed in the public sector are more affected by state affirmative action laws than white (black) females. In general, white men in the public sector more likely to have black female spouse by 0.07 percentage points if he married year and state of residence are overlapped with state affirmative action laws. In the sample, the mean share of white male and black female unions is 0.0036. The 0.07 percentage points increase means that there are 19 percent increase in the rate of white male and black female combinations after affirmative action laws, which is substantial.

In addition, I also find a mixed conclusion for the impact of affirmative action policies on black male marrying white female. The main triple-difference estimates suggest that affirmative action policies increase the likelihood of public-sector black male workers marry white female by 1.04 percentage points. However, the result is sensitive to a series robustness checks. For example, I failed to find a significant results after limiting the sample to people who marriage only once, as well as limiting the sample to state have active affirmative action policies. Additionally, the affirmative action policies have no impact on female intermarriage patterns (neither white female and black male marriage nor black female and white male marriage).

Overall, the result indicates that affirmative action policies improve race relations, though differently by gender and racial group. The findings suggest that affirmative action indeed alter racial attitudes towards minorities at some points, and it may continue improving mass attitudes. Consistent results of white male, which further suggests that affirmative action policies affect more to those who have more negative thoughts towards minorities at the beginning of the sample period. The overall finding is consistent with the legitimacy model (Flores and Barclay 2016), where affirmative action policies improve race relations at some points. Further, it is also aligned with the contact hypothesis (Williams Jr 1947, Allport 1954), where increasing exposure of minorities to whites leads to more intermarriage between whites and minorities (Fryer Jr 2007).

The results also reveal some important avenues for future research on how affirmative action policies change the interpersonal relationship. State that initiates its own state affirmative action law may be more important earlier in life when racial attitudes are presumably weak. On the other hand, states that start their affirmative action policies may be more important later in life when individuals have been exposed to racial diversity society long enough. It would be ideal to

have longitudinal data to answer how people transition from single to married in states with and without affirmative action policies.

## References

- Allport, G. W. (1955) The nature of prejudice.
- Aksoy, C. G., Carpenter, C. S., De Haas, R., and Tran, K. D. (2020) Do Laws Shape Attitudes? Evidence from Same-Sex Relationship Recognition Policies in Europe. *European Economic Review*, 124, 103399.
- Arredondo, M. and Sax, L. J. (1999) Student Attitudes toward Affirmative Action in College Admissions. *Research in Higher Education*, 40(4), 439-459.
- Beaman, L., Chattopadhyay, R., Duflo, E., Pande, R., and Topalova, P. (2009) Powerful Women: Does Exposure Reduce Bias? *The Quarterly journal of economics*, 124(4), 1497-1540.
- Blau, P. M. (1964) Social Exchange Theory. Retrieved September, 3(2007), 62.
- Bishin, B. G., Hayes, T. J., Incantalupo, M. B., and Smith, C. A. (2016) Opinion Backlash and Public Attitudes: Are Political Advances in Gay Rights Counterproductive? *American Journal of Political Science*, 60(3), 625-648.
- Coate, S., and Loury, G. C. (1993) Will Affirmative-Action Policies Eliminate Negative Stereotypes? *The American Economic Review*, 1220-1240.
- Crandall, C. S., Miller, J. M., and White, M. H. (2018) Changing Norms Following the 2016 US Presidential Election: The Trump Effect on Prejudice. *Social Psychological and Personality Science*, 9(2), 186-192.
- Ebaugh, H. R. F., and Haney, C. A. (1980) Shifts in Abortion Attitudes: 1972-1978. *Journal of Marriage and the Family*, 491-499.
- Fryer Jr, R. G. (2007) Guess Who's Been Coming to Dinner? Trends in Interracial Marriage over the 20th Century. *Journal of Economic Perspectives* 21.2: 71-90.
- Flores, A. R., and Barclay, S. (2016) Backlash, Consensus, Legitimacy, or Polarization: The Effect of Same-Sex Marriage Policy on Mass Attitudes. *Political Research Quarterly*, 69(1), 43-56.
- Gullickson, A. (2006) Education and Black-White Interracial Marriage. *Demography*, 43(4), 673-689.
- Gevrek, D. (2014) Interracial Marriage, Migration and Loving. *The Review of Black Political Economy* 41.1 (2014): 25-60.
- Holzer, H. J., and Neumark, D. (2000) What Does Affirmative Action Do? *ILr review*, 53(2), 240-271.

- Harrison, D. A., Kravitz, D. A., Mayer, D. M., Leslie, L. M., and Lev-Arey, D. (2006) Understanding Attitudes toward Affirmative Action Programs in Employment: Summary and Meta-Analysis of 35 years of Research. *Journal of Applied Psychology*, 91(5), 1013.
- Hanley, J., Salamone, M., and Wright, M. (2012) Reviving the Schoolmaster: Reevaluating Public Opinion in the Wake of Roe v. Wade. *Political Research Quarterly*, 65(2), 408-421.
- Kuklinski, J. H., Sniderman, P. M., Knight, K., Piazza, T., Tetlock, P. E., Lawrence, G. R., and Mellers, B. (1997) Racial Prejudice and Attitudes toward Affirmative Action. *American Journal of Political Science*, 402-419.
- Kurtulus, F. A. (2013) The Impact of Eliminating Affirmative Action on Minority and Female Employment: A Natural Experiment Approach Using State-Level Affirmative Action Laws and EEO-4 Data. Working Paper. Retrieved from <http://gap.hks.harvard.edu/impact-eliminatingaffirmative-action-minority-and-female-employment-natural-experiment-approach>.
- Kurtulus, F. A. (2016) The Impact of Affirmative Action on the Employment of Minorities and Women: a Longitudinal Analysis Using Three Decades of EEO-1 Filings. *Journal of Policy Analysis and Management*, 35(1), 34-66.
- Kurtulus, F. A. (2012). Affirmative Action and the Occupational Advancement of Minorities and Women During 1973–2003. *Industrial Relations: A Journal of Economy and Society*, 51(2), 213-246.
- Kellough, J. E. (1992) Affirmative Action in Government Employment. *The Annals of the American Academy of Political and Social Science* 523.1: 117-130.
- Kravitz, D. A., and Platania, J. (1993) Attitudes and Beliefs about Affirmative Action: Effects of Target and of Respondent Sex and Ethnicity. *Journal of applied psychology* 78.6: 928.
- Kalmijn, M. (1993) Trends in Black/White Intermarriage. *Social forces* 72.1: 119-146.
- Lindbohm, M. L., Hemminki, K., Bonhomme, M. G., Anttila, A., Rantala, K., Heikkilä, P., and Logan, J. R., Alba, R. D., McNulty, T., and Fisher, B. (1996) Making A Place in the Metropolis: Locational Attainment in Cities and Suburbs. *Demography*, 33(4), 443-453.
- Miller, C. (2017). The Persistent Effect of Temporary Affirmative Action. *American Economic Journal: Applied Economics*, 9(3), 152-90.

National Public Radio Staff. "Debate: Does affirmative action on Campus Do More Harm Than Good?" <https://www.npr.org/2014/03/26/293767851/debate-does-affirmative-action-on-campus-do-more-harm-than-good>, 2014. [Accessed: February 23, 2021]

Ohio Laws and Rules. Chapter 1231: 1-49 Equal Employment Opportunity Policy <http://codes.ohio.gov/oac/123:1-49> [Accessed: March 13, 2021]

Perry, S. L. (2013) Racial Composition of Social Settings, Interracial Friendship, and Whites' Attitudes toward Interracial Marriage. *The Social Science Journal*, 50(1), 13-22.

Qian, Z. (1997) Breaking the Racial Barriers: Variations in Interracial Marriage between 1980 and 1990. *Demography*, 34(2), 263-276.

Ruggles, S., Flood, S., Foster, S., Goeken, R., Pacas, J., Schouweiler, M., and Sobek, M. IPUMS USA: Version 11.0 [dataset]. Minneapolis, MN: IPUMS, 2021. <https://doi.org/10.18128/D010.V11.0>

Tucker, M. B., and Mitchell-Kernan, C. (1990) New Trends in Black American Interracial Marriage: The Social Structural Context. *Journal of Marriage and the Family*, 209-218.

Thomas, W. and Garrett, M. (1999) US and California Affirmative Action Policies, Laws, and Programs. *Impacts of Affirmative Action: Policies and Consequences in California*, 25-58.

Society for Human Resource Management (2018) Managing Equal Employment Opportunity. <https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/pages/managingequalemploymentopportunity.aspx>, [Accessed: April 09, 2019]

Williams Jr, R. M. (1947) The Reduction of Intergroup Tensions: A Survey of Research on Problems of Ethnic, Racial, and Religious Group Relations. *Social Science Research Council Bulletin*.

**Table 1. Timeline of State Affirmative Action Laws**

<b>State</b>	<b>State AA Laws</b>	<b>Year Instituted</b>	<b>Banned AA</b>
Alabama	Yes	1981	
Alaska	Yes	1984	
Arizona	Yes	1975	Yes (2010)
Arkansas	Yes	1993	
California	Yes	1977	Yes (1996)
Colorado	Yes	1976	
Connecticut	Yes	1975	
Delaware	Yes	1979	
Florida	Yes	1979	Yes (2000)
Georgia	--	--	
Idaho	--	--	
Illinois	Yes	1973	
Indiana	Yes	1977	
Iowa	Yes	1979	
Kansas	Yes	1975	
Kentucky	Yes	1984	
Louisiana	Yes	1987	
Maine	Yes	1975	
Maryland	Yes	1970	
Massachusetts	Yes	1983	
Michigan	Yes	1965	Yes (2006), but rejected in 2012
Minnesota	Yes	1975	
Mississippi	--	--	
Missouri	--	--	
Montana	--	--	
Nebraska	Yes	1979	Yes (2008)
Nevada	Yes	1973	
New Hampshire	Yes	1986	Yes (2012)
New Jersey	Yes	1974	
New Mexico	Yes	1980	
New York	Yes	1976	
North Carolina	Yes	1984	
North Dakota	--	--	
Ohio	Yes	1973	
Oklahoma	Yes	1984	Yes (2012)
Oregon	Yes	1981	
Pennsylvania	--	--	
Rhode Island	Yes	1977	
South Carolina	Yes	1978	
South Dakota	--	--	
Tennessee	Yes	1971	
Texas	Yes	1993	
Utah	--	--	
Vermont	Yes	1976	
Virginia	--	--	
Washington	Yes	1972	Yes (1998)
West Virginia	--	--	
Wisconsin	Yes	1977	
Wyoming	--	--	

**Sources:** Initial table can be seen from Appendix A, Kurtulus (2013). The year shown in table 1 are the law initiation year.

**Table 2. Summary Statistics**

Variable	All		AA States		Non-AA States	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Black and White Marriage	0.011	0.105	0.012	0.107	0.010	0.098
State Employee	0.155	0.362	0.157	0.363	0.148	0.355
<i>Individual Control</i>						
Age	47.267	11.704	47.371	11.686	46.82	11.768
Log of Income	10.583	0.994	10.601	0.996	10.504	0.981
Less than High School Degree	0.025	0.155	0.024	0.152	0.029	0.169
High School Degree	0.325	0.469	0.319	0.466	0.354	0.478
Some College	0.247	0.431	0.249	0.432	0.238	0.426
Bachelor's Degree	0.24	0.427	0.243	0.429	0.225	0.418
Advanced Degree	0.155	0.362	0.157	0.364	0.144	0.351
Others	0.008	0.091	0.008	0.089	0.010	0.099
<i>Population Control</i>						
Share of Total Blacks	0.148	0.104	0.142	0.098	0.179	0.126
Share of Total Working Age Blacks	0.146	0.103	0.139	0.097	0.177	0.124
Share of Total Black Female	0.152	0.109	0.145	0.103	0.184	0.132
Share of Total Black Male	0.145	0.099	0.138	0.193	0.174	0.120
Number of Observations	6,347,679		5,151,666		1,196,013	

*Note:* Summary statistics for black and white marriage, state and local government workers, and individual level control variables are from 2008-2018 American Community Survey (ACS). Population level control variables are from the National Cancer Institute Surveillance, Epidemiology, and End Results Program (SEER), aggregated to the county-by-state level.

**Table 3. Difference-in-Difference Estimate the Effect of State Affirmative Action laws on Black-White Marriage**

	(1)	(2)	(3)
<b><i>Panel A (White Male - Black Female Marriage)</i></b>			
AA State * Married Year After AA	0.0001 (0.0012)	-0.0005 (0.0011)	0.0002 (0.0004)
Mean Dependent Var	0.0036	0.0036	0.0036
Observations	3,219,439	2,852,425	2,852,425
Adjusted R-squared	0.0000	0.0009	0.0029
<b><i>Panel B (White Female – Black Male Marriage)</i></b>			
AA State * Married Year After AA	0.0008 (0.0026)	-0.0014 (0.0019)	0.0000 (0.0010)
Mean Dependent Var	0.0091	0.0091	0.0091
Observations	2,753,303	2,490,858	2,490,858
Adjusted R-squared	0.0000	0.0028	0.0056
<b><i>Panel C (Black Male – White Female Marriage)</i></b>			
AA State * Married Year After AA	0.0053 (0.0351)	0.0215 (0.0162)	-0.0057 (0.0082)
Mean Dependent Var	0.130	0.130	0.130
Observations	196,179	181,000	181,000
Adjusted R-squared	0.0039	0.0819	0.1195
<b><i>Panel D (Black Female – White Male Marriage)</i></b>			
AA State * Married Year After AA	-0.0022 (0.0186)	-0.0036 (0.0111)	-0.0102 (0.0070)
Mean Dependent Var	0.0502	0.0502	0.0502
Observations	178,758	167,584	167,584
Adjusted R-squared	0.0019	0.0314	0.0553
Control Variable		X	X
Year of Marriage Fixed Effects			X
State Fixed Effects			X
Survey Year Fixed Effects			X

**Note:** Data from the 2008-2018 American Community Survey (ACS). I run the estimate regression four times for four different intermarriage combinations. Panel A represents white male who marry black female, panel B represents white female who marry black male, panel C refers to black male who have white female wives, and panel D refers to black female who have white male husbands. Column 1 is based on difference-in-difference model without any controls. In column 2, I add individual level and population level control variables. Column 3 are results of adding state fixed effects, year of marriage fixed effects, and survey year fixed effects. Robust standard errors clustered on state level in brackets. \*\*\*  $\rho < 0.01$  \*\*  $\rho < 0.05$  \*  $\rho < 0.1$

**Table 4. Triple-Difference Estimate the Effect of State Affirmative Action laws on Black-White Marriage**

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A (White Male - Black Female Marriage)</b>						
AA State * Married Year after AA * Public Worker	0.0007** (0.0003)	0.0007** (0.0003)	0.0007** (0.0003)	0.0007** (0.0003)	0.0007** (0.0003)	0.0007** (0.0003)
Mean Dependent Var	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036
Observations	3,219,439	2,852,425	2,852,425	2,852,425	2,852,425	2,852,384
Adjusted R	0.0000	0.0009	0.0029	0.0031	0.0039	0.0040
<b>Panel B (White Female – Black Male Marriage)</b>						
Married Year After AA * AA State * Public Worker	-0.0000 (0.0006)	0.0001 (0.0006)	-0.0001 (0.0006)	-0.0001 (0.0006)	-0.0002 (0.0005)	-0.0002 (0.0005)
Mean Dependent Var	0.0091	0.0091	0.0091	0.0091	0.0091	0.0091
Observations	2,753,303	2,490,858	2,490,858	2,490,858	2,490,858	2,490,849
Adjusted R	0.0001	0.0028	0.0056	0.0058	0.0069	0.0070
<b>Panel C (Black Male – White Female Marriage)</b>						
Married Year After AA * AA State * Public Worker	0.0090 (0.0060)	0.0117** (0.0054)	0.0076 (0.0057)	0.0078 (0.0056)	0.0100* (0.0051)	0.0104** (0.0049)
Mean Dependent Var	0.130	0.130	0.130	0.130	0.130	0.130
Observations	196,179	181,000	181,000	180,991	180,873	180,871
Adjusted R	0.0044	0.0825	0.1198	0.1239	0.1385	0.1399
<b>Panel D (Black Female – White Male Marriage)</b>						
Married Year After AA * AA State * Public Worker	0.0043 (0.0046)	0.0041 (0.0037)	0.0011 (0.0034)	0.0012 (0.0034)	0.0013 (0.0028)	0.0013 (0.0028)
Mean Dependent Var	0.0502	0.0502	0.0502	0.0502	0.0502	0.0502
Observations	178,758	167,584	167,584	167,571	167,439	167,439
Adjusted R	0.0028	0.0325	0.0560	0.0610	0.0782	0.0786
Control Variable		X	X	X	X	X
State Fixed Effects			X	X	X	X
Survey Year Fixed Effects			X	X	X	X
Year of Marriage Fixed Effects			X	X	X	X
State by Year Fixed Effects				X	X	X
State by Married Year Fixed Effects					X	X
OCC Fixed Effects						X

*Note:* Data from the 2008-2018 American Community Survey (ACS). I run the estimate regression four time for four different interracial marriage combinations. Panel A represents white male who marry black female, panel B represents white female who marry black male, panel C refers to black male who have white female wives, and panel D refers to black female who have white male husbands. Column 1 is based on triple-difference model without any controls. In column 2, I add individual level and population level control variables. Column 3 are results of adding state fixed effects, year of marriage fixed effects, and survey year fixed effects. Columns 4-6 include state-by-year fixed effects, state-by-year of marriage fixed effects, and occupation fixed effects gradually. Robust standard errors clustered on state level in brackets. \*\*\*  $\rho < 0.01$  \*\*  $\rho < 0.05$  \*  $\rho < 0.1$

**Table 5. Triple-Difference Estimate the Effects of State Affirmative Action laws on Black-White Marriage for Federal-Sector Workers**

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A (White Male - Black Female Marriage)</b>						
AA State * Married Year after AA * Public Worker	0.0001 (0.0008)	0.0002 (0.0007)	0.0007 (0.0007)	0.0007 (0.0007)	0.0008 (0.0006)	0.0006 (0.0006)
Mean Dependent Var	0.0038	0.0038	0.0038	0.0038	0.0038	0.0038
Observations	2,979,438	2,620,335	2,620,335	2,620,335	2,620,335	2,586,583
Adjusted R	0.0003	0.0012	0.0030	0.0032	0.0040	0.0041
<b>Panel B (White Female – Black Male Marriage)</b>						
Married Year After AA * AA State * Public Worker	-0.0001 (0.0021)	0.0000 (0.0019)	0.0002 (0.0015)	0.0002 (0.0015)	0.0002 (0.0015)	0.0004 (0.0012)
Mean Dependent Var	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096
Observations	2,292,243	2,045,693	2,045,693	2,045,693	2,045,693	2,042,382
Adjusted R	0.0002	0.0032	0.0059	0.0061	0.0074	0.0073
<b>Panel C (Black Male – White Female Marriage)</b>						
Married Year After AA * AA State * Public Worker	-0.0243 (0.0157)	-0.0008 (0.0123)	0.0025 (0.0110)	0.0034 (0.0109)	0.0025 (0.0106)	-0.0043 (0.0083)
Mean Dependent Var	0.134	0.134	0.134	0.134	0.134	0.134
Observations	180,396	165,424	165,424	165,417	165,291	161,977
Adjusted R	0.0036	0.0800	0.1161	0.1203	0.1359	0.1388
<b>Panel D (Black Female – White Male Marriage)</b>						
Married Year After AA * AA State * Public Worker	-0.0107 (0.0082)	0.0071 (0.0068)	0.0044 (0.0058)	0.0049 (0.0057)	0.0044 (0.0054)	0.0035 (0.0053)
Mean Dependent Var	0.0503	0.0503	0.0503	0.0503	0.0503	0.0503
Observations	147,654	136,952	136,952	136,940	136,783	136,129
Adjusted R	0.0018	0.0329	0.0553	0.0608	0.0804	0.0812
Control Variable		X	X	X	X	X
State Fixed Effects			X	X	X	X
Survey Year Fixed Effects			X	X	X	X
Year of Marriage Fixed Effects			X	X	X	X
State by Year Fixed Effects				X	X	X
State by Married Year Fixed Effects					X	X
OCC Fixed Effects						X

*Note:* Data from the 2008-2018 American Community Survey (ACS). Table 5 reports results for the combined sample of federal workers and all non-public sector workers. I then run the estimate regression four time for four different interracial marriage combinations. Panel A represents white male who marry black female, panel B represents white female who marry black male, panel C refers to black male who have white female wives, and panel D refers to black female who have white male husbands. Column 1 is based on triple-difference model without any controls. In column 2, I add individual level and population level control variables. Column 3 are results of adding state fixed effects, year of marriage fixed effects, and survey year fixed effects. Columns 4-6 include state-by-year fixed effects, state-by-year of marriage fixed effects, and occupation fixed effects gradually. Robust standard errors clustered on state level in brackets. \*\*\*  $\rho < 0.01$  \*\*  $\rho < 0.05$  \*  $\rho < 0.1$

**Table 6. Triple-Difference Estimate the Effect of State Affirmative Action laws on Black-White Marriage for People Who Married Once**

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A (White Male - Black Female Marriage)</b>						
AA State * Married Year after AA * Public Worker	0.0005 (0.0003)	0.0006* (0.0003)	0.0005* (0.0003)	0.0005* (0.0003)	0.0006* (0.0003)	0.0005* (0.0003)
Mean Dependent Var	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036
Observations	2,423,011	2,159,676	2,159,676	2,159,676	2,159,676	2,159,641
Adjusted R	0.0000	0.0011	0.0030	0.0032	0.0042	0.0043
<b>Panel B (White Female – Black Male Marriage)</b>						
Married Year After AA * AA State * Public Worker	0.0003 (0.0006)	0.0005 (0.0005)	0.0002 (0.0005)	0.0003 (0.0005)	0.0001 (0.0004)	0.0002 (0.0004)
Mean Dependent Var	0.0088	0.0088	0.0088	0.0088	0.0088	0.0088
Observations	2,045,718	1,860,264	1,860,264	1,860,264	1,860,264	1,860,256
Adjusted R	0.0001	0.0033	0.0066	0.0068	0.0083	0.0084
<b>Panel C (Black Male – White Female Marriage)</b>						
Married Year After AA * AA State * Public Worker	0.0039 (0.0073)	0.0068 (0.0063)	0.0017 (0.0061)	0.0021 (0.0060)	0.0040 (0.0053)	0.0045 (0.0051)
Mean Dependent Var	0.127	0.127	0.127	0.127	0.127	0.127
Observations	142,578	132,031	132,031	132,021	131,873	131,872
Adjusted R	0.0049	0.0869	0.1236	0.1287	0.1471	0.1483
<b>Panel D (Black Female – White Male Marriage)</b>						
Married Year After AA * AA State * Public Worker	0.0059 (0.0053)	0.0053 (0.0043)	0.0026 (0.0039)	0.0028 (0.0039)	0.0026 (0.0032)	0.0026 (0.0031)
Mean Dependent Var	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487
Observations	136,247	128,008	128,007	127,990	127,843	127,843
Adjusted R	0.0029	0.0352	0.0576	0.0641	0.0855	0.0859
Control Variable		X	X	X	X	X
State Fixed Effects			X	X	X	X
Survey Year Fixed Effects			X	X	X	X
Year of Marriage Fixed Effects			X	X	X	X
State by Year Fixed Effects				X	X	X
State by Married Year Fixed Effects					X	X
OCC Fixed Effects						X

*Note:* Data from the 2008-2018 American Community Survey (ACS). Table 6 reports results for restricting the sample to people who married only once. I run the estimate regression four time for four different interracial marriage combinations. Panel A represents white male who marry black female, panel B represents white female who marry black male, panel C refers to black male who have white female wives, and panel D refers to black female who have white male husbands. Column 1 is based on triple-difference model without any controls. In column 2, I add individual level and population level control variables. Column 3 are results of adding state fixed effects, year of marriage fixed effects, and survey year fixed effects. Columns 4-6 include state-by-year fixed effects, state-by-year of marriage fixed effects, and occupation fixed effects gradually. Robust standard errors clustered on state level in brackets. \*\*\*  $\rho < 0.01$  \*\*  $\rho < 0.05$  \*  $\rho < 0.1$

**Table 7. Triple-Difference Estimate the Effect of State Affirmative Action laws on Black-White Marriage for States that Always have Affirmative Action Laws**

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A (White Male - Black Female Marriage)</b>						
AA State * Married Year after AA * Public Worker	0.0007** (0.0003)	0.0007* (0.0004)	0.0006* (0.0004)	0.0007* (0.0004)	0.0007* (0.0004)	0.0006 (0.0003)
Mean Dependent Var	0.0033	0.0033	0.0033	0.0033	0.0033	0.0033
Observations	2,601,384	2,318,976	2,318,976	2,318,976	2,318,976	2,318,938
Adjusted R	0.0003	0.0013	0.0030	0.0031	0.0040	0.0041
<b>Panel B (White Female – Black Male Marriage)</b>						
Married Year After AA * AA State * Public Worker	-0.0003 (0.0006)	0.0001 (0.0006)	0.0001 (0.0006)	0.0000 (0.0005)	0.0000 (0.0005)	-0.0000 (0.0006)
Mean Dependent Var	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085
Observations	2,229,412	2,032,714	2,032,714	2,032,714	2,032,714	2,032,706
Adjusted R	0.0007	0.0032	0.0057	0.0059	0.0072	0.0072
<b>Panel C (Black Male – White Female Marriage)</b>						
Married Year After AA * AA State * Public Worker	0.0019 (0.0049)	0.0063 (0.0049)	0.0014 (0.0049)	0.0017 (0.0049)	0.0041 (0.0045)	0.0048 (0.0043)
Mean Dependent Var	0.115	0.115	0.115	0.115	0.115	0.115
Observations	166,928	154,731	154,731	154,722	154,622	154,621
Adjusted R	0.0100	0.0774	0.1137	0.1181	0.1321	0.1333
<b>Panel D (Black Female – White Male Marriage)</b>						
Married Year After AA * AA State * Public Worker	-0.0017 (0.0036)	0.0007 (0.0034)	-0.0020 (0.0033)	-0.0019 (0.0033)	-0.0013 (0.0028)	-0.0012 (0.0028)
Mean Dependent Var	0.0430	0.0430	0.0430	0.0430	0.0430	0.0430
Observations	153,056	144,050	144,050	144,038	143,918	143,918
Adjusted R	0.0051	0.0285	0.0496	0.0554	0.0714	0.0717
Control Variable		X	X	X	X	X
State Fixed Effects			X	X	X	X
Survey Year Fixed Effects			X	X	X	X
Year of Marriage Fixed Effects			X	X	X	X
State by Year Fixed Effects				X	X	X
State by Married Year Fixed Effects					X	X
OCC Fixed Effects						X

*Note:* Data from the 2008-2018 American Community Survey (ACS). Table 7 limits the sample to states that have ever had state affirmative action laws and still active and states that have never had state affirmative action laws. I run the estimate regression four time for four different interracial marriage combinations. Panel A represents white male who marry black female, panel B represents white female who marry black male, panel C refers to black male who have white female wives, and panel D refers to black female who have white male husbands. Column 1 is based on triple-difference model without any controls. In column 2, I add individual level and population level control variables. Column 3 are results of adding state fixed effects, year of marriage fixed effects, and survey year fixed effects. Columns 4-6 include state-by-year fixed effects, state-by-year of marriage fixed effects, and occupation fixed effects gradually. Robust standard errors clustered on state level in brackets. \*\*\*  $\rho < 0.01$  \*\*  $\rho < 0.05$  \*  $\rho < 0.1$

**Table 8. Triple-Difference Estimate for White Male and Black Spouse Matches, by Age Group at First Marriage**

	(1) 16-24	(2) 25-34	(3) 35-44	(4) 45-54	(5) 55+
Married Year After AA * AA State *	-0.0000	0.0007***	0.0017	0.0005	0.0048
Public Worker	(0.0003)	(0.0002)	(0.0010)	(0.0012)	(0.0045)
Control Variable	X	X	X	X	X
State Fixed Effects	X	X	X	X	X
Survey Year Fixed Effects	X	X	X	X	X
Year of Marriage Fixed Effects	X	X	X	X	X
State by Year Fixed Effects	X	X	X	X	X
State by Married Year Fixed Effects	X	X	X	X	X
OCC Fixed Effects	X	X	X	X	X
Observations	996,528	1,246,741	397,880	160,343	39,278
Adjusted R	0.006	0.004	0.009	0.014	0.039

*Note:* Data from the 2008-2018 American Community Survey (ACS). All specifications include a full set of controls, survey year fixed effects, state fixed effects, year of marriage fixed effects, state-by-year fixed effects, state-by-year of marriage fixed effects and occupation fixed effects. Columns 1-5 represents different age group for people's age at first marriage. Robust standard errors clustered on state level in brackets. \*\*\*  $\rho < 0.01$  \*\*  $\rho < 0.05$  \*  $\rho < 0.1$

**Table 9. Triple-Difference Estimate for White Male and Black Spouse Matches, by Education**

	(1) At Least College	(2) High School	(3) Less than High School & Others
Married Year After AA * AA State * Public Worker	0.0009** (0.0004)	-0.0001 (0.0004)	0.0038*** (0.0018)
Control Variable	X	X	X
State Fixed Effects	X	X	X
Survey Year Fixed Effects	X	X	X
Year of Marriage Fixed Effects	X	X	X
State by Year Fixed Effects	X	X	X
State by Married Year Fixed Effects	X	X	X
OCC Fixed Effects	X	X	X
Observations	1,796,635	950,835	104,872
Adjusted R-squared	0.004	0.006	0.029

*Note:* Data from the 2008-2018 American Community Survey (ACS). All specifications include a full set of controls, survey year fixed effects, state fixed effects, year of marriage fixed effects, state-by-year fixed effects, state-by-year of marriage fixed effects and occupation fixed effects. Robust standard errors clustered on state level in brackets. \*\*\*  $\rho < 0.01$  \*\*  $\rho < 0.05$  \*  $\rho < 0.1$

**Table 10. Triple-Difference Estimate for White Male and Black Spouse Matches, for People's Current Living State is the Same as the Birth State**

	(1) Main Regression	(2) Birth State is the Same as Current Living State
Married Year After AA * AA State * Public Worker	0.0010** (0.0005)	0.0006* (0.0006)
Control Variable	X	X
State Fixed Effects	X	X
Survey Year Fixed Effects	X	X
Year of Marriage Fixed Effects	X	X
State by Year Fixed Effects	X	X
State by Married Year Fixed Effects	X	X
OCC Fixed Effects	X	X
Observations	1,544,295	1,720,743
Adjusted R-squared	0.0054	0.0042

*Note:* Data from the 2008-2018 American Community Survey (ACS). All specifications include a full set of controls, survey year fixed effects, state fixed effects, year of marriage fixed effects, state-by-year fixed effects, state-by-year of marriage fixed effects and occupation fixed effects. Robust standard errors clustered on state level in brackets. \*\*\*  $\rho < 0.01$  \*\*  $\rho < 0.05$  \*  $\rho < 0.1$