

Affirmative Action Policies and Interracial Marriage

Shiyi Chen*

Update: 09/02/2022

Abstract

This paper explores the relationship between affirmative action policies and race relations by examining how interracial marriage patterns 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 only directly affect public-sector employees to estimate a triple difference model. I find that the probability of a white male public-sector employee having a black wife increases by 0.08 percentage points if he married in a year when there was an affirmative action policy in place in his state of residence. Furthermore, affirmative action policies do not appear to affect the likelihood of white females marry black males nor the likelihood that black females marry white males. Taken together, these results suggest that affirmative action laws improve race relations but with important gender and racial differences.

JEL codes: J12 J78

Keywords: affirmative action policy, interracial marriage, race relations

* Contact information: schen@allegheny.edu, Department of Business and Economics, Allegheny College, 520 N. Main Street, Meadville, PA, 16335. I would like to thank you Delia Furtado for her guidance and countless support, as well as Kenneth A. Couch, and Jorge M. Aguero for their directions and suggestions. I also grateful to the participation of AEA2020, SEA2020, APP2021, and the labor seminar at the University of Connecticut for their comments and suggestions.

1. Introduction

Affirmative action is one of the most controversial labor market policies in the United States. Supporters believe that affirmative action helps promote diversity in the workplace. In the long run, mixing between members of different groups could reduce stereotypes and develop positive attitudes toward minority groups. 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 reverse discrimination against white males. 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. First, it is generally difficult to find a good measure of racial attitude. Second, the enactment of affirmative action policies cannot generally be taken as exogenous. 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 are subject to 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 marriage is a readily available measure of acceptance levels between different racial groups that can address the shortcomings of using self-reported attitudes in questionnaires. Most importantly, interracial marriage has been

argued to be the best gauge of race relations as it represents the highest level of social intimacy and more stable than other fleeting relationships, such as cohabitation, dating, or sexual relationships (Gullickson 2006).¹

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 (Miller 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 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 (Coate and Loury 1993). If this is the case, the enactment of state-level laws may lead to negative attitudes toward different groups making interracial marriages less likely. 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 for members of

¹ Fryer Jr (2007) discusses interracial intimacy may be a more appropriate measurement of race relations. Moreover, because interracial marriage is solid and verifiable, it is less likely to have a biased estimation than questions regarding cohabitation, dating, or sexual preferences.

underrepresented groups (Holzer and Neumark 2000). Thirty-six states have had state-level affirmative action legislation at some point; some of these have since been banned. 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, 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 affirmative policies as a way to address these underlying issues. In this case, it would be difficult to identify impacts even if affirmative action policies did indeed increase interracial marriages and improve race relations more generally.

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. Therefore, I can examine whether people living in states that 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 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 labor force, it is difficult to imagine that public-sector workers would have different race preferences for reasons related to affirmative action policies. Furthermore, 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.

I find that white males are 0.08 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 0.0036 in the sample, and thus the 0.08 percentage point represents a 22 percent increase. This result is robust to using a sample of individuals who married only once. 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.

Furthermore, affirmative action policies do not affect marriage decisions for Black males who marry white females. Similarly, the results do not show a strong impact of state affirmative action policies on either white female - Black male marriages or Black female - white male marriages. Finally, I show that the effects of affirmative action laws differ substantially by age at the first marriage and education level for white men. One possible interpretation is that Black males as well as females (regardless of race) may have weaker same-race marriage preferences to start making them less sensitive to changes in preferences as a result of policy changes.

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 (e.g., Perry 2013), 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 Affirmative Action

The term "affirmative action" first appeared in public and was made a federal law by President John F. Kennedy in 1961 with Executive Order 10925, which required all government contractors to take affirmative action to ensure that all applicants have equal employment opportunities 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 based on race, color, religion, sex, or national origin in all but the private firms.²

² Title VII of the Civil Rights Act of 1964 (also known as Anti-discrimination Law, enforced by Equal Employment Opportunity commission) prohibits discrimination and ensure everyone has

Shortly after the passage of 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 working in state and local government (Kellough 1989). To address discrimination, many states began to adopt 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). 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, which is 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 law, 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 must collect and distributes demographic information on the labor market for the reference of employers developing affirmative action plans. Until now, there are a total of 36 states who have

the same opportunity to thrive. However, affirmative action laws actively support – usually take proactive steps – those who have been deprived of fair treatment.

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

2.2 Affirmative Action and Racial Attitudes

In examining how affirmative action policies affect interracial marriages, this study contributes to a larger literature 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 laws and attitudes toward sexual minorities (Flores and Barclay 2016, Astoy 2021, etc.).³

In the context of affirmative action policies, it is well known that such policies have two opposite effects on changing mass attitudes. First, the legitimacy model predicts that affirmative action laws will increase the positive attitudes toward people of underrepresenting groups as laws increase social legitimacy (Flores and Barclay 2016, Astoy 2020). The idea behind this model is the contact hypothesis, which suggests that contact with members of different racial groups can promote positive and tolerant attitudes toward other groups (Williams Jr 1947, Allport 1954). Consistent with this theory, Boisjoly et al. (2006) find that white students who are randomly

³ 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.

assigned African American roommates express more positive attitudes toward minorities than white students who have white roommates. In addition, Beaman et al. (2008) find that gender quota policies in Indian village councils lead to positive attitudes toward female leaders' effectiveness and weakened stereotypes about gender roles in public and private life.

Second, the backlash model predicts that attitudes about underrepresented groups might become substantially more negative following affirmative action policies (Thernstrom and Thernstrom 1997). Scholars often argue that deliberate efforts to encourage diversity in the workplace could inflame tensions and conflicts (e.g., Stephan 1978). Coate and Loury (1993) state that affirmative action policies could reinforce negative stereotypes and worsen employers' views about minority groups. Using experimental methods, Niederle et al. (2013) find that ex-ante tournament entry affirmative action, which decreases the performance requirements for women, results in reverse discrimination against men.

2.3 Affirmative Action, Racial Attitudes, and Interracial Marriage

Existing evidence on the impact of affirmative action policies on racial attitudes comes from examining the association between interaction between the members of different groups and their attitudes towards other groups, often using surveys in research design. Since the Supreme Court repealed anti-miscegenation laws in the case of *Loving v. Virginia* in 1967, interracial marriage rates have steadily climbed (Pew Research Center 2017). Researchers, often in sociology literature, consider interracial marriage as a proxy for race relations (Kalmijn 1993, Perry 2013)⁴. They argue that interracial marriage is a good predictor of racial attitudes as it performs better than

⁴ Perry (2013) uses survey data to find that a greater presence of Blacks in the workplace results in more favorable reported attitudes among whites toward interracial marriage.

asking for people's attitudes towards racial minorities in surveys. Therefore, understanding marriage behaviors can help predict race relations and racial attitudes, which is vital to understanding the unintended consequences of affirmative action.⁵

I contribute to this work in two different ways. First, reported attitudes towards race may reflect perceptions about appropriate responses in surveys vs. true attitudes towards race. By using interracial marriage patterns as a measure of attitudes, this is less of an issue. Second, I consider the impact of affirmative action policies, not exposure to minorities on the job. Attitudes towards racial minorities may improve if exposed to more minorities on the job in general but worsen when exposed to more minorities as a result of affirmative action policies.⁶

Methodologically, my research builds on Kurtulus (2013), which 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 the employment of Black and Hispanic women in public sector jobs following affirmative action bans. A potential concern with this methodology is that other factors, correlated with these affirmative action bans, changed in the states that banned affirmative action at around the same time. For example, there may have been differences in labor market demand for minority female employees among states for reasons unrelated to the policies. In this study, I add non-public sector workers as a comparison group and then use a triple-difference model.

⁵ However, caution should be taken when assuming attitudes are uniformly supportive because there is a difference between attitudes toward others' behavior and attitudes regarding one's own behavior (Herman and Campbell 2012).

⁶ Fryer Jr (2007) predicts that a higher frequency of interaction with minority groups and low societal costs of intermixing could increase intermarriage between white and minorities.

2.3 Data

The data for this study came from the 2008-2018 American Community Survey (ACS), which was 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 year of the most recent marriage. First, the sample in this analysis is limited to all married U.S.-born individuals who are non-institutionalized. 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 have ever been married (including the married-spouse present, married-spouse separate, married-spouse absent, divorced, and widowed) and have information to determine whether the last marriage was intermarriage on ACS.

Second, interracial marriage is defined as a marriage between two individuals who report a different race at the survey time. 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. It is worth noting that interracial marriage was allowed throughout the country after a 1967 Supreme Court decision made anti-miscegenation laws illegal, prohibiting marriage between whites and non-whites.⁷ Hence, the year of marriage in the sample

⁷ Anti-miscegenation laws prevented people from marrying outside their race. These laws were enforced as early as 1600s. In U.S. history, nine states and D.C. have never banned interracial marriage. Twenty-five states 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).

ranges from 1967 (the year that individuals became legally able to marry interracial nationwide) to 2018.

Finally, this study excludes individuals who are not in the labor force or who do not work for wages. Apart from this, although federal workers are public-sector workers, I exclude federal workers from the main analysis because they are not covered by state affirmative action laws.

I follow Kurtulus's (2013) timetable of state affirmative action laws for each state. Hawaii and the District of Columbia have been dropped from the sample due to ambiguous information on affirmative action policies. In addition, Michigan has been eliminated from the sample because it started affirmative action policies before anti-miscegenation laws were banned. Specifically, most U.S. states had passed state-level affirmative action laws for public-sector employment during the 1970s and 1980s, except Texas and Arkansas - their laws were enacted in 1993. However, after implementation, due to controversial nature, some states later banned affirmative action laws. For simplicity, this analysis categories states into two groups: 1) states that *have ever had* state affirmative action legislations – including those that still have active state affirmative action laws and those that have rescinded their affirmative action laws (the treatment group), and 2) states that *have never had* formally passed state-level affirmative action laws (the control group). In total, the sample includes 36 states who served as affirmative action states, and 13 states who served as the non-affirmative action states. Figure 1 and table 1 provide detailed information about the timing of state affirmative action laws.

Furthermore, the empirical analysis includes several individual-level and state-level control variables that could potentially affect interracial marriage. Specifically, the 1969 – 2018 state-level population data were retrieved from National Cancer Institute Surveillance,

Epidemiology, and End Results Program (SEER) for the state-level population controls.⁸ I measure the share of the working age population by race and gender for each state and year, and then merge them with the ACS for the analysis. Moreover, the individual-level control variables include age, age square, wage, birth cohort, and education dummy.

Table 2 reports summary statistics for the variables used in this analysis, separately by whether the person's residence state had an affirmative action policy in place at the time of survey. By comparison, the share of Black and white marriages is very similar between affirmative action states and non-affirmative action states. Specifically, Black-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 state workers is slightly higher in affirmative action states than in non-affirmative action states. About 15.7 percent of state worker in affirmative action states and 14.8 percent in non-affirmative action states. Moreover, both the share of Blacks and the share of Black females appear to be higher in non-affirmative action states than in affirmative action states. Finally, people are generally more educated in affirmative action states than in non-affirmative action states. People's average age, average income, and age distribution are similar between the two types of states.

4 Methodology

4.1 The Difference-in-Difference Model

To estimate the impact of affirmative action policies on interracial marriage, I begin with the difference-in-difference model. Specifically, I examine whether black-white marriages are

⁸ Working age is defined as 16 to 64 in this data.

especially common (or uncommon) for public-sector workers marrying when there was an affirmative action law in place in the person's state of residence. Importantly, the differences in differences methodology allows me to control for state fixed effects, which control for unobserved interracial attitudes that vary by state, as well as year of marriage fixed effects, which control for changing racial attitudes over time. The difference-in-difference model is shown below:

$$I_{i,s,m,t} = \beta_0 + \beta_1 \cdot AA_{s,m} + \alpha X'_{i,s,t} + \gamma_s + \lambda_m + \lambda_t + \varepsilon_{i,s,m,t} \quad (1)$$

where $I_{i,s,m,t}$ is a binary variable equaling 1 if individual i living in state s in year t who got married in year m is married 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 coefficient of interest, β_1 , estimates the impact of affirmative action policies on interracial marriage. $X_{i(c),s,t}$ are controls for individual characteristics and state-level characteristics, which include individual's age, age-squared, income, birth cohort, education (dummy), and state's share of working-age population by race. State fixed effects are denoted γ_s , year of marriage fixed effects are denoted λ_m , and λ_t are survey year fixed effects. State fixed effects are included to control for any time-invariant unobserved state attributes that may influence interracial marriage. Year fixed effects and year of marriage fixed effects are included to control any economy-wide shocks and general trends affecting intermarriage across all states.

The differences-in-differences model will yield unbiased estimates of the impact of affirmative action laws on interracial marriage patterns if the timing of enactment of these laws is taken as exogenous. If instead, these laws are enacted in states where racial relations had been improving, then we might observe a positive correlation between affirmative action laws and interracial marriage even if the law did not itself cause racial attitudes to improve. On the other

hand, if these laws are enacted as a result of worsening race relations in states, then we might observe a negative correlation between the laws and interracial marriage even if, again, there is no causal impact of the laws on attitudes. In both cases, changes in interracial marriages might not be a direct consequence of affirmative action laws.

4.2 The Triple-Difference Model

To address the above concerns, I use a triple-difference model. In particular, I add to the difference-in-difference model an additional comparison group: public-sector employees vs. non-public sector employees. 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 a more credible identification strategy since (1) state affirmative action laws only apply to public-sector employees, and (2) public-sector employees constitute a small proportion of the total state population, and so it seems unlikely that state governments would adopt policies in response to their changing race attitudes in particular. Moreover, state employees are not a large enough population to pass policies in response to their own attitudes.⁹ However, it is worth noting that although state affirmative action laws only cover public-sector employees, any long-term trends in a state related to race relations are likely to apply to all people in the state.

The triple-difference model is presented below:

⁹ The share of public-sector employment is about one fifth of the total employed population.

$$I_{i,s,m,t} = \beta_0 + \beta_1 AA_{s,m} + \beta_2 Pub_{i,s,t} + \beta_3 Pub_{i,s,t} \cdot AA_{s,m} + \alpha X'_{i,s,t} + \gamma_s + \lambda_m + \lambda_t + \nu_{st} + \nu_{sm} + \varepsilon_{i,s,m,t} \quad (2)$$

where I add to the equation an indicator variable $Pub_{i,s,t}$ that equals 1 if person i living in state s in year t is a state or local government employee and zero otherwise. Importantly, this variable is interacted with the double-difference estimator (as defined in equation (1) to construct a triple-difference estimator. The primary parameter of interest is β_2 , which yields the triple-difference estimate. The triple-difference 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 compared to the same differences in states without affirmative action laws.

In the triple difference model, I also add state-by-year and state-by-year of marriage fixed effects, ν_{st} and ν_{sm} , respectively. State-by-year and state-by-year of marriage fixed effects are included to control for possible trend differences across states before initiating affirmative action policies that could potentially confound the effect of passing the policies and thus affect intermarriage across states. Finally, the model is weighted using individual weights, and standard errors are clustered at the state level to account for arbitrary correlation of residuals.

5 Main Results

5.1 Difference-in-Difference Estimate

Table 3 displays the result of a double-difference model based on equation (1), and columns 1-3 present the coefficient with an increasing number of controls. I run the equation separately for four different 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. To do so, I can estimate the effect of affirmative action laws on interracial marriage tendencies, my measure of racial attitudes. For simplicity, I only report the estimated coefficient on the double-difference estimates and the associated standard errors.

Panel A presents the result for white males who work in the public sector. Recall that the dependent variable is equal to one in this case if the male is married to a black female and zero if he is married to a white female. Column (1) reports the coefficient of the double-difference estimates without any controls, which suggests that state affirmative action laws are associated with a 0.1 percentage point higher likelihood of public-sector white males having Black wives. However, it is statistically insignificant. When adding more controls in column (2), the estimated coefficient becomes negative but again, still insignificant. Finally, column (3) estimates the model with all of the controls and all set of fixed effects, the estimate on difference-in-difference coefficient is similar to those reported in column (1) and statistically significant. Panel B reports the result for public-sector white females. Now the dependent variable is equal to one if the female has a Black husband and zero if she is married to a white male. Since this is a mirror image of the analysis in Panel A, it should not be surprising that we observe the same patterns shown in panel A. This time I do not find any statistically significant results regardless of the controls and fixed effects included in these models.

Panel C shows estimates of the impacts of affirmative action policies on interracial marriage decisions of black males. Again, 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 the likelihood that black women marry white men, as is shown in panel D.

As discussed in the previous section, differences in differences estimates may understand the impact of affirmative action policies if states enact affirmative action policies in reaction to worsening race relations. I now turn to a triple-difference model, comparing the double difference results for workers in state and local governments to non-public sector workers.

5.2 Triple-Difference Estimate

Table 4 presents the triple-difference estimates based on equation (2) separately by gender and racial group. Table 4 is constructed the same way as table 3. The top two panels (panel A and panel B) report results for whites, while the bottom two panels (panel C and panel D) report results for Blacks.

The results in panel A suggest that white males 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 than are white males in the private sector. The estimate of the effect is larger in magnitude when adding more control variables and fixed effects. In particular, affirmative action policies increase the likelihood of a white male having a black wife by 0.08 percentage points, and the estimate is statistically significant. It is worth noting white male-Black female marriages constitute only .36 percent of all marriages, suggesting that the 0.08 percentage points increase represents a 22 percent increase in the likelihood that a white male has a black wife. Panel B reports the results for white females, again with the dependent variable equal to one if the individual has a black husband. The point estimate suggests that affirmative action policies negatively affect the likelihood that white females have black husbands. However, none of the models yield statistically significant estimates. One possible reason for this is that affirmative action policies tend to encourage the employment of both women and Blacks. For this reason,

affirmative action policies may especially increase black females. This would imply that white males would have more exposure to black potential spouses following affirmative action than white females. This may explain why affirmative action has stronger impacts on white males.

Panels C of table 4 reports findings for Black males. This time the dependent variable equal to one if the Black males marry white females. In the preferred model, which includes a full set of controls and a full set of fixed effects (column 4), the results suggests that affirmative action policies do not affect the likelihood that Black males have white spouses. Panel D shows results for the black female sample. Again, there is no evidence that affirmative action policies increase the likelihood of their marrying white males.

Overall, these results suggest that affirmative action laws improve race relations, though with gender and racial differences. 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 Checks

One potential remaining source of bias, even in the triple difference analysis, occurs if interracial preferences of state and local workers change coincidentally as their states adopt affirmative action as opposed to being directly affected by law changes. To explore this as a possibility, I consider interracial marriage patterns of a group of workers that are likely to be very similar to state and local government workers but that are not affected by state affirmative action policies: federal workers. Table 5 presents results from the same triple-difference specification in equation (2) but replacing public-sector workers with federal workers. The estimated coefficient

is statistically insignificant for all gender and racial groups, which suggests that the main triple-difference estimates presented in table 4 can be interpreted as the causal impact of being exposed to the state affirmative action laws.

Next, I examine the robustness of results to rather small changes in the sample. To start, table 6 presents the results using the same triple-difference specification strategy in equation (2) with the sample limited to people who have only been married once. For the white male sample (shown in panel A of table 6), the estimated results are consistent with the results reported in table 4, though a lower coefficient magnitude. Additionally, I do not find that state affirmative action policies affect Black males having white spouses and females' intermarriage patterns (see panel B, C, and D of table 6). This may be due to the smaller sample size after being the sample to people who have only married once. Another potential explanation is that interracial marriages are more common among second and third plus marriages (Qian 1997), making it easier for affirmative action policies to have a discernable impact on higher order marriages.

Next, I separate the sample by whether the state eventually banned an affirmative action policy or not. My sample consists of three types of states: states that have affirmative action laws that are still active, states that have had affirmative action laws but have since banned them, and states that have never had affirmative action laws; there are no states in my sample that have always had affirmative action laws.¹⁰ If enactment of affirmative action policies permanently lead to improved race relations, then banning these policies may not yield worsening racial attitudes. In fact, people may have voted to ban these policies believing they are no longer needed. If this is

¹⁰ There are a total of nine states who banned affirmative action laws. These nine states are: Arizona in 2010, California in 1996, Washington in 1998, Florida in 1999, Michigan in 2006, Nebraska in 2008, New Hampshire in 2012, Oklahoma in 2012, and Idaho in 2020.

the case, the estimate strategy may underestimate the policy effects as the states which banned such policies are in the control group, together with states that have never implemented affirmative action policies. Table 7 presents the estimate for the sample dropping individuals in states that banned affirmative action policies. As shown in table 7, the coefficient estimates of white males are consistent with the main regression results. This result is inconsistent with a model in which affirmative action policies lead to permanent changes in attitudes, even after these policies are no longer in effect. Again, the result shows that introducing affirmative action laws does not affect Black (both female and male) and white female interracial marriage patterns.

7 Heterogeneity

Results presented thus far suggest that state affirmative action laws positively affect the likelihood that white male public-sector employees marry black women, but do not have robust impacts on the likelihood of interracial marriages for other groups. In this section, I focus on white men to examine how their age at first marriage, educational attainment, and mobility affect their decisions to marry Black females.

7.1 Heterogeneity by Age

Affirmative action laws could have different impacts depending on the age at which marriage market participants are actively searching for spouses. Focusing on white males, Table 8 reports results for five different age groups based on their age of first marriage. I report only the triple-difference coefficient for the model with the full set of controls and fixed effects. The only statistically significant estimate is in the age group between 25-34. This may be because it is the

largest sample, but it could also be that this group is young enough to consider an interracial marriage but old enough to likely meet a spouse on the job, as opposed to at school or in other ways.

7.2 Heterogeneity by Education

Table 9 examines whether results differ by educational attainment. Interestingly, the results suggest impacts for those with college degrees and those with higher than college degrees, but no impacts on those with high school degrees or lower than a high school degree. There is evidence that people with greater educational attainment are more likely to meet people of different racial groups compared to people with low educational attainment—most probably because college-educated workers are less likely to live in segregated neighborhoods and work in racially segregated jobs (Logan et al, 1996). If college-educated white males have more exposure to black people to start, then they may be more open to interracial marriages and therefore susceptible to further affirmative action induced exposure to black females.

7.3 Heterogeneity by Region

Table 10 provides the estimation results for white male-Black female matches by region of residence. Different regions have different racial compositions. For example, from the 2010 Census, one-third of the total population were Blacks in the South, one-quarter were Blacks in the South, one-fifth were Blacks in the Northeast, and a little over one-tenth were Blacks in the Midwest. Previous studies suggest a positive relationship between the size of groups and whites and a racial minority group match (Qian 1997). Consistent with the previous findings, as indicated

in table 10, white male public-sector workers are more likely to intermarry black spouses if they live in the northeastern, southern, and western states – the regions with the highest black population. This finding implies that implementing state affirmative action laws may have more substantial effects in regions where the numbers of minorities are relatively high.

7.4 Are Results Driven by Interstate Mobility?

One concern with the main empirical strategy of this paper is that public sector workers with more negative attitudes toward people of a different race (and therefore least likely to marry someone of a different race) migrate to a different state in response to state affirmative action policies. This would lead to upwardly biased estimates of the impact of affirmative action policies. 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 11. The result for white males gives a similar output as the baseline result in table 4 but is lower in magnitude.

8 Conclusion

A central debate about affirmative action policies is whether these policies cause more harm than good if they result in worsening attitudes towards racial minorities. This paper examines this question by considering how interracial patterns change in response to the enactment of state affirmative action laws. Using a triple-difference strategy, I estimate a 0.08 percentage point increase in the likelihood that a white male has a black spouse in response to exposure to a state affirmative action policy. This result is robust to focusing on first marriages only and to keeping in the sample only individuals who continue to reside in their states of birth. Federal workers—

who may have similar racial attitudes as state and local government workers but are not directly affected by state affirmative action policies—are indeed not sensitive to state affirmative policies in terms of interracial marriage patterns. Heterogeneity analyses suggest that results are driven by 25-34 years old as well as those with either a college degree or higher than a high school degree. Moreover, the policies do not appear to impact interracial marriage decisions of Blacks, regardless of gender, and white females.

Overall, these results suggest that state-level affirmative action laws can improve race relations, especially for white males. The result is aligned with the social contact theory (William Jr 1947, Allport 1954), where increasing exposure between the members of different groups will encourage deeper understanding towards other groups and eventually promote more positive or tolerant attitudes toward other groups. Affirmative action policies increase on the job exposure to opposite gender racial minorities more for males than for females, this is why in my results, I find white males become more accepting Black wives if there were affirmative action laws in their state of residence. In addition, the results indicate no evidence to support the backlash of enactment of affirmative action laws. In no cases, the results display that introducing affirmative action is associated with a significant worsening marriage behavior with someone from different races.

The results also reveal some important avenues for future research on how affirmative action policies change the interpersonal relationship. In this study, I can only assume that people randomly choose to work in the public sector. I cannot rule out the possibility that the decision to adopt affirmative action policies increases people's willingness to work in the public sector if they know about these policies beforehand. Triple-difference model and placebo tests help alleviate this concern but cannot entirely eliminate it. 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. For

example, 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. Therefore, understand whether the same individual's marriage behavior changes over time (before and after affirmative action) would be interesting.

In conclusion, affirmative action laws have a crucial impact on relations between racial groups. This study indicates that adopting affirmative action laws appear to develop positive attitudes toward racial minorities, suggesting the unintended consequences of the laws. Ultimately, this could translate into less discrimination in family, working, housing, studying, health, and other benefits that are associated with affirmative action laws.

Reference

- 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.
- Allport, G. W. (1955) The nature of prejudice.
- 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.
- 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.
- Boisjoly, J., Duncan, G. J., Kremer, M., Levy, D. M., and Eccles, J. (2006). Empathy Or Antipathy? The Impact of Diversity. *American Economic Review*, 96(5), 1890-1905.
- Coate, S., and Loury, G. C. (1993) Will Affirmative-Action Policies Eliminate Negative Stereotypes? *The American Economic Review*, 1220-1240.
- Ebaugh, H. R. F., and Haney, C. A. (1980) Shifts in Abortion Attitudes: 1972-1978. *Journal of Marriage and the Family*, 491-499.
- 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.
- 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.
- 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.

- 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.
- Gullickson, A. (2006) Education and Black-White Interracial Marriage. *Demography*, 43(4), 673-689.
- 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.
- 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.
- Herman, M. R., and Campbell, M. E. (2012). I Wouldn't, But You Can: Attitudes toward Interracial Relationships. *Social Science Research*, 41(2), 343-358.
- Holzer, H. J., and Neumark, D. (2000) What Does Affirmative Action Do? *ILr review*, 53(2), 240-271.
- Kalmijn, M. (1993) Trends in Black/White Inter-marriage. *Social Forces* 72.1: 119-146.
- Kellough, J. E. (1992) Affirmative Action in Government Employment. *The Annals of the American Academy of Political and Social Science* 523.1: 117-130.
- 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. (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.
- 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.
- Livingston, G. and Brown, A. (2017). Trends and Patterns in Inter-marriage <https://www.pewresearch.org/social-trends/2017/05/18/1-trends-and-patterns-in-intermarriage/> [Accessed: May 20, 2021]
- Logan, J. R., Lindbohm, M. L., Hemminki, K., Bonhomme, M. G., Anttila, A., Rantala, K., Heikkilä, P., and 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]
- Niederle, M., Segal, C., and Vesterlund, L. (2013). How Costly Is Diversity? Affirmative Action in Light of Gender Differences in Competitiveness. *Management Science*, 59(1), 1-16.
- 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., Goeken, R., Grover, J., Meyer, E., Pacas, J., and Sobek, M. IPUMS USA: Version 10.0 [dataset]. Minneapolis, MN: IPUMS, 2020. <https://doi.org/10.18128/D010.V10.0>
- 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]

- Stephan, W. G. (1978) School Desegregation: An Evaluation of Predictions Made in *Brown v. Board of Education*. *Psychological Bulletin*, (85): 217-38
- Thernstrom, S., and Thernstrom, A. (1997). *America In Black and White: One Nation, Indivisible*. New York: Simon and Schuster.
- 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.
- 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*.

Figure 1. States Grouped by Status of State Affirmative Action Laws

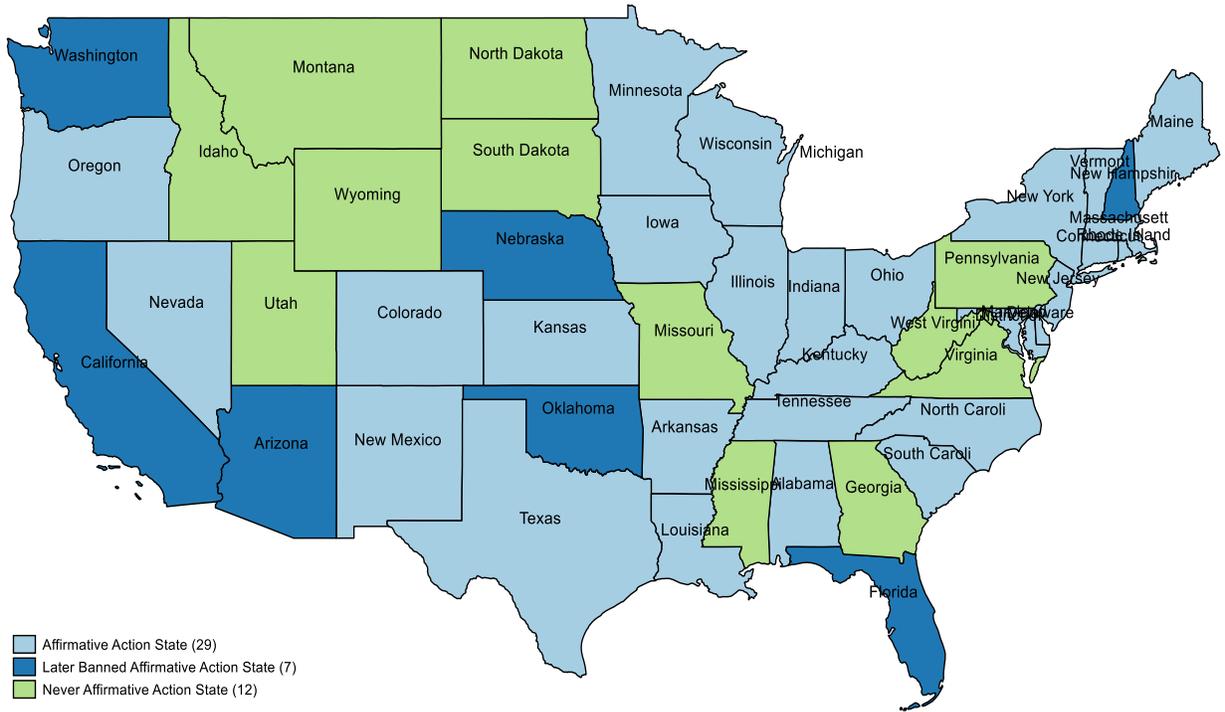


Table 1. State-Level Affirmative Action Law Passage by State

State	Year Initiated	State	Year Initiated
Alabama	1981	Montana	--
Alaska	1984	Nebraska *	1979
Arizona *	1975	Nevada	1973
Arkansas	1993	New Hampshire *	1986
California *	1977	New Jersey	1974
Colorado	1976	New Mexico	1980
Connecticut	1975	New York	1976
Delaware	1979	North Carolina	1984
Florida *	1979	North Dakota	--
Georgia	--	Ohio	1973
Idaho	--	Oklahoma *	1984
Illinois	1973	Oregon	1981
Indiana	1977	Pennsylvania	--
Iowa	1979	Rhode Island	1977
Kansas	1975	South Carolina	1978
Kentucky	1984	South Dakota	--
Louisiana	1987	Tennessee	1971
Maine	1975	Texas *	1993
Maryland	1970	Utah	--
Massachusetts	1983	Vermont	1976
Michigan *	1965	Virginia	--
Minnesota	1975	Washington *	1972
Mississippi	--	West Virginia	--
Missouri	--	Wisconsin	1977
		Wyoming	--

Source: Information from Kurtulus (2013). "*" refers to state that have banned state-level affirmative action law later, which include Arizona (2010), California (1996), Florida (1999), Michigan (2006), Nebraska (2008), New Hampshire (2012), Oklahoma (2012), and Washington (1998). Texas banned state-level affirmative action law in 1996 but reversed it in 2003.

Table 2. Summary Statistics

Variable	All		AA State		Non-AA State	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Black-white marriage	0.012	0.108	0.012	0.110	0.010	0.101
State and local govt. worker	0.156	0.363	0.157	0.364	0.149	0.356
Female	0.388	0.487	0.389	0.487	0.385	0.487
Black	0.060	0.237	0.056	0.230	0.074	0.262
Black female	0.068	0.251	0.063	0.244	0.086	0.280
<i>Individual Control</i>						
Age	46.637	11.063	46.72	11.047	46.282	11.124
Log of income	10.829	0.776	10.847	0.780	10.754	0.757
Less than high school	0.029	0.167	0.027	0.163	0.035	0.183
High school diploma	0.327	0.469	0.320	0.467	0.356	0.479
Some college	0.242	0.428	0.245	0.430	0.232	0.422
College degree and higher	0.402	0.49	0.408	0.491	0.378	0.485
Birth Cohort						
1940 to 1949	0.054	0.226	0.055	0.228	0.050	0.219
1950 to 1959	0.260	0.439	0.262	0.439	0.255	0.436
1960 to 1969	0.299	0.458	0.300	0.458	0.297	0.457
1970 to 1979	0.232	0.422	0.231	0.421	0.236	0.424
1980 to 1989	0.139	0.346	0.138	0.344	0.145	0.352
1990 to 1999	0.015	0.124	0.015	0.121	0.018	0.132
<i>Population Control</i>						
Share of working-age pop	0.614	0.021	0.615	0.020	0.612	0.025
Share of working-age female	0.505	0.007	0.505	0.007	0.507	0.007
Share of working-age male	0.495	0.007	0.495	0.007	0.493	0.007
Share of working-age black female	0.515	0.040	0.517	0.031	0.506	0.064
Share of working-age black male	0.485	0.040	0.483	0.031	0.494	0.064
N	4,978,862		4,036,733		942,129	

Note: Summary statistics for Black and white marriage, state 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), aggregate to the state level.

Table 3. Difference-in-Difference Estimates of the Effect of State Affirmative Action Laws on Black-White Marriage for Public-Sector Workers

	(1)	(2)	(3)
Panel A (White Males); Dependent Var: Marry Black Female			
Mean = 0.004			
AA State * Married after AA	0.001 (0.001)	-0.001 (0.001)	0.001*** (0.000)
Observations	337,988	335,124	335,124
R-squared	0.000	0.000	0.003
Panel B (White Females); Dependent Var: Marry Black Male			
Mean = 0.009			
AA State * Married after AA	0.001 (0.003)	-0.003 (0.002)	0.000 (0.001)
Observations	374,848	371,326	371,326
R-squared	0.000	0.003	0.005
Panel C (Black Males); Dependent Var: Marry White Female			
Mean = 0.120			
AA State * Married after AA	-0.002 (0.031)	0.030* (0.016)	0.005 (0.012)
Observations	29,070	28,877	28,877
R-squared	0.005	0.085	0.106
Panel D (Black Females); Dependent Var: Marry White Male			
Mean = 0.040			
AA State * Married after AA	-0.008 (0.017)	0.001 (0.012)	-0.009 (0.007)
Observations	33,131	32,903	32,901
R-squared	0.003	0.034	0.050
Control Variable		X	X
Year of Marriage Fixed Effects			X
State Fixed Effects			X
Survey Year Fixed Effects			X

Note: Data from 2008-2018 American Community Survey (ACS).). The analysis limited to public-sector workers. I run the difference-in-difference regression for four different intermarriage combinations. Panel A presents white male and Black female marriage, panel B presents white female and Black male marriage, panel C presents Black male and white female marriage, and panel D presents Black female and white male marriage. Column 1 is the difference-in-difference model without any controls. Column 2 adds individual-level control variables. Column 3 adds state fixed effects, survey year fixed effects, and year of marriage fixed effects. Robust standard errors are clustered at the state level and shown in brackets. *** $\rho < 0.001$ ** $\rho < 0.05$ * $\rho < 0.01$

Table 4. Triple-Difference Estimates of the Effect of State Affirmative Action Laws on Black-White Marriage

	(1)	(2)	(3)	(4)
Panel A (White Males); Dependent Var: Marry Black Female				
Mean = 0.0036				
Married after AA * AA State * Public	0.0008** (0.0003)	0.0008*** (0.0003)	0.0008*** (0.0003)	0.0008*** (0.0003)
N	2,669,341	2,669,341	2,669,341	2,669,341
R-Squared	0.0008	0.0021	0.0022	0.0031
Panel B (White Females); Dependent Var: Marry Black Male				
Mean = 0.0107				
Married after AA * AA State * Public	0.0000 (0.0006)	-0.0000 (0.0006)	-0.0000 (0.0006)	-0.0002 (0.0006)
N	1,719,197	1,719,197	1,719,197	1,719,197
R-Squared	0.0030	0.0048	0.0050	0.0065
Panel C (Black Males); Dependent Var: Marry White Female				
Mean = 0.1379				
Married after AA * AA State * Public	0.0086 (0.0052)	0.0055 (0.0056)	0.0055 (0.0056)	0.0074 (0.0054)
N	159,530	159,530	159,509	159,323
R-Squared	0.0794	0.1027	0.1064	0.1200
Panel D (Black Females); Dependent Var: Marry White Male				
Mean = 0.0494				
Married after AA * AA State * Public	0.0022 (0.0040)	0.0013 (0.0031)	0.0018 (0.0031)	0.0021 (0.0028)
N	126,867	126,867	126,837	126,660
R-Squared	0.0367	0.0500	0.0563	0.0754
Controls	X	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
State-By-Year Of Marriage Fixed Effects				X

Note: Data from 2008-2018 American Community Survey (ACS). I run the triple-difference for four different interracial marriage combinations. Panel A presents white male and Black female marriage, panel B presents white female and Black male marriage, panel C presents Black male and white female marriage, and panel D presents Black female and white male marriage. Column 1 is the triple-difference model with individual- and population-level controls. Column 2 includes state fixed effects, year of marriage fixed effects, and survey year fixed effects. Column 3 include state-by-year fixed effects, and column 4 adds state-by-year of marriage fixed effects. Robust standard errors are clustered at the state level and shown in brackets. *** $\rho < 0.01$ ** $\rho < 0.05$ * $\rho < 0.1$

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

	(1)	(2)	(3)	(4)
Panel A (White Males); Dependent Var: Marry Black Female				
Mean = 0.0038				
Married after AA * AA state * federal worker	0.0010	0.0007	0.0007	0.0007
	(0.0008)	(0.0009)	(0.0009)	(0.0009)
N	2,469,707	2,469,707	2,469,707	2,469,706
R-squared	0.0011	0.0023	0.0025	0.0034
Panel B (White Females); Dependent Var: Marry Black Male				
Mean = 0.0115				
Married after AA * AA state * federal worker	-0.0012	-0.0024*	-0.0024*	0.0026**
	(0.0015)	(0.0013)	(0.0013)	(0.0013)
N	1,405,732	1,405,732	1,405,732	1,405,732
R-squared	0.0034	0.0051	0.0054	0.0072
Panel C (Black Males); Dependent Var: Marry White Female				
Mean = 0.1419				
Married after AA * AA state * federal worker	-0.0133	-0.0006	-0.0004	-0.0016
	(0.0173)	(0.0171)	(0.0171)	(0.0176)
N	147,454	148,454	147,439	147,250
R-squared	0.0758	0.0998	0.1042	0.1196
Panel D (Black Females); Dependent Var: Marry White Male				
Mean = 0.0526				
Married after AA * AA state * federal worker	-0.0011	0.0045	0.0046	0.0071
	(0.0060)	(0.0051)	(0.0051)	(0.0061)
N	105,470	105,470	105,433	105,226
R-squared	0.0349	0.0481	0.0547	0.0767
Controls	X	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-year fixed effects			X	X
State-year of marriage effects				X

Note: Data from 2008-2018 American Community Survey (ACS). Table 5 reports the result for the triple-difference model with replacing public-sector workers with federal workers. I run the estimate regression four times for four different interracial marriage combinations. Panel A presents white male and Black female marriage, panel B presents white female and Black male marriage, panel C presents Black male and white female marriage, and panel D presents Black female and white male marriage. Column 1 is the triple-difference model with individual- and population-level controls. Column 2 includes state fixed effects, year of marriage fixed effects, and survey year fixed effects. Column 3 include state-by-year fixed effects, and column 4 adds state-by-year of marriage fixed effects. Robust standard errors are clustered at the state level and shown 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)
Panel A (White Male - Black Female Marriage)				
Mean = 0.0033				
Married after AA * AA State * Public	0.0006* (0.0003)	0.0006* (0.0003)	0.0006* (0.0003)	0.0006** (0.0003)
N	2,039,508	2,039,508	2,039,508	2,039,507
R-Squared	0.0009	0.0022	0.0024	0.0035
Panel B (White Female – Black Male Marriage)				
Mean = 0.0105				
Married after AA * AA State * Public	0.0003 (0.0007)	0.0003 (0.0006)	0.0003 (0.0006)	0.0001 (0.0006)
N	1,262,458	1,262,458	1,262,458	1,262,458
R-Squared	0.0034	0.0057	0.0060	0.0081
Panel C (Black Male – White Female Marriage)				
Mean = 0.1347				
Married after AA * AA State * Public	0.0037 (0.0060)	-0.0003 (0.0061)	-0.0000 (0.0060)	0.0010 (0.0056)
N	118,278	118,278	118,260	118,065
R-Squared	0.0805	0.1048	0.1097	0.1275
Panel D (Black Female – White Male Marriage)				
Mean = 0.0476				
Married after AA * AA State * Public	0.0027 (0.0044)	0.0020 (0.0035)	0.0027 (0.0035)	0.0024 (0.0031)
N	97,459	97,459	97,430	97,240
R-Squared	0.0376	0.0519	0.0602	0.0844
Controls	X	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
State By Year Of Marriage Fixed Effects				X

Note: Data from 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 times for four different interracial marriage combinations. Panel A presents white male and Black female marriage, panel B presents white female and Black male marriage, panel C presents Black male and white female marriage, and panel D presents Black female and white male marriage. Column 1 is the triple-difference model with individual- and population-level controls. Column 2 includes state fixed effects, year of marriage fixed effects, and survey year fixed effects. Column 3 include state-by-year fixed effects, and column 4 adds state-by-year of marriage fixed effects. Robust standard errors are clustered at the state level and shown in brackets. *** $\rho < 0.01$ ** $\rho < 0.05$ * $\rho < 0.1$

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

	(1)	(2)	(3)	(4)
Panel A (White Male - Black Female Marriage)				
Mean = 0.0033				
Married after AA * AA State * Public	0.0007** (0.0003)	0.0007** (0.0003)	0.0007** (0.0003)	0.0007** (0.0003)
N	2,164,615	2,164,615	2,164,615	2,164,615
R-Squared	0.0009	0.0021	0.0023	0.0032
Panel B (White Female – Black Male Marriage)				
Mean = 0.0100				
Married after AA * AA State * Public	0.0001 (0.0007)	0.0003 (0.0006)	0.0004 (0.0006)	0.0003 (0.0006)
N	1,387,257	1,387,257	1,387,257	1,387,257
R-Squared	0.0032	0.0050	0.0052	0.0068
Panel C (Black Male – White Female Marriage)				
Mean = 0.1229				
Married after AA * AA State * Public	0.0075 (0.0059)	0.0013 (0.0056)	0.0010 (0.0056)	0.0028 (0.0056)
N	135,915	135,915	135,894	135,735
R-Squared	0.0691	0.0951	0.0989	0.1117
Panel D (Black Female – White Male Marriage)				
Mean = 0.0422				
Married after AA * AA State * Public	0.0013 (0.0044)	-0.0001 (0.0034)	0.0003 (0.0034)	0.0008 (0.0032)
N	108,371	108,371	108,343	108,193
R-Squared	0.0280	0.0519	0.0485	0.0676
Controls	X	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
State By Year of Marriage Fixed Effects				X

Note: Data from 2008-2018 American Community Survey (ACS). Table 7 limits the sample to states that have ever had state affirmative action laws and are still active, and state that have never had state affirmative action laws. I run the estimate regression four times for four different interracial marriage combinations. Panel A presents white male and Black female marriage, panel B presents white female and Black male marriage, panel C presents Black male and white female marriage, and panel D presents Black female and white male marriage. Column 1 is the triple-difference model with individual- and population-level controls. Column 2 includes state fixed effects, year of marriage fixed effects, and survey year fixed effects. Column 3 include state-by-year fixed effects, and column 4 adds state-by-year of marriage fixed effects. Robust standard errors are clustered at the state level and shown in brackets. *** $\rho < 0.01$ ** $\rho < 0.05$ * $\rho < 0.1$

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

	(1) 16-24	(2) 25-34	(3) 35-44	(4) 45-54	(5) 55+
AA State * Married after AA * Public Worker	0.0000 (0.0003)	0.0008*** (0.0003)	0.0017 (0.0020)	0.0051 (0.0034)	-0.0015 (0.0111)
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
Observations	905,843	959,818	143,919	24,295	3,794
R-Squared	0.0053	0.0038	0.0138	0.0585	0.0895

Note: Data from 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, and state-by-year of marriage fixed effects. Columns 1-5 represents different age group for people's age at first marriage. Robust standard errors are clustered at the state level and shown in brackets.*** $\rho < 0.01$ ** $\rho < 0.05$ * $\rho < 0.1$

Table 9. Triple-Difference Estimate for Black Female and White Male Marriage, by Education

	(1) < High School	(2) High School	(3) Some College	(4) College Or Higher
Mean	0.0030	0.0033	0.0039	0.0038
Married after AA * AA State * Public Worker	0.0029 (0.0019)	0.0002 (0.0005)	0.0010** (0.0004)	0.0010*** (0.0004)
Control Variables	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	X
State By Married Year Fixed Effects	X	X	X	X
Observations	88,074	910,421	622,350	1,048,430
R-Squared	0.0321	0.0051	0.0062	0.0047

Note: Data from 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, and state-by-year of marriage fixed effects. Robust standard errors are clustered at the state level and shown in brackets. *** $\rho < 0.01$ ** $\rho < 0.05$ * $\rho < 0.1$

Table 10. Triple-Difference Estimate for Black Female and White Male Marriage, by Region

	(1) Northeast	(2) Midwest	(3) South	(4) West
Mean	0.0035	0.0023	0.0044	0.0042
Married Year after AA * AA State * Public Worker	0.0008*	0.0003	0.0009*	0.0009
	(0.0004)	(0.0003)	(0.0004)	(0.0006)
Controls	X	X	X	X
State Fixed Effects	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-Year Fixed Effects	X	X	X	X
State-Year Of Marriage Fixed Effects	X	X	X	X
N	516,428	670,923	987,447	494,543
R-Squared	0.0031	0.0021	0.0032	0.0028

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, and state-by-year of marriage fixed effects. Robust standard errors clustered on state level in brackets. *** $\rho < 0.01$ ** $\rho < 0.05$ * $\rho < 0.1$

Table 11. Triple-Difference Estimate for Black Female and White Male Marriage, for People’s Current Living State is the Same as the Birth State

	(1) Main Regression	(2) Birth State = Current Living State
Mean	0.0036	0.0028
Married Year after AA * AA State * Public Worker	0.0008*** (0.0005)	0.0006* (0.0003)
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
N	2,669,341	1,613,548
R-Squared	0.0031	0.0033

Note: Data from 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, and state-by-year of marriage fixed effects. Robust standard errors are clustered at the state level and shown in brackets. *** $\rho < 0.01$ ** $\rho < 0.05$ * $\rho < 0.1$