

Did the Ban the Box Policy Affect Racial Discrimination in the Labor Market?

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ABSTRACT

High incarceration and recidivism rates are enduring problems in the United States. Many studies suggest that high unemployment among ex-offenders is one of the leading causes of high recidivism rates. Starting in 1998, some states introduced the Ban the Box (BTB) policy. The BTB aims to help ex-offenders integrate into the labor force by prohibiting employers from inquiring about the potential employee's criminal history. In 2015, however, Doleac and Hansen (2017) found that the adoption of BTB increased racial discrimination in the labor market for young, low-skilled black and Hispanic workers. This paper extends Doleac and Hansen's analysis up to (and including) 2019 and introduces another relevant factor – racial animus in the given state – into the discussion of the effect of the BTB policy on racial discrimination. We find that while BTB decreases employment for black and Hispanic workers, the negative effect of the BTB depends on the level of racial animus in the state. These findings suggest the BTB policy works as intended in the states with low levels of racial animus, but harms black men in the states with high racial animus. We recommend that policy-makers be cautious of the racial animus level in their state before adopting the BTB.

I. Introduction

The United States has had the highest incarceration rate in the world since 2002 (Scommegna 2012). Each US state imprisons more people than any other democratic country (Herring and Widra, 2021). According to the 2021 data, 537 people are incarcerated per 100,000 residents in the US (Kang-Brown et al. 2021). The direct and indirect costs of incarceration on the government are roughly \$182 billion (Rabuy and Wagner, 2017). The indirect costs include the foregone wages and productivity, the emotional and physical trauma, and the effects on the

families of the incarcerated. Ex-offenders face high unemployment rates, and their inability to integrate into the labor force increases the risk of recidivism (Becker 1968, Schnepel 2015, Yang 2017). Indeed, 2 out of 3 ex-offenders are rearrested within three years of their release, and 50% get incarcerated again (Langan and Levin 1994). The high incarceration and recidivism rates present a substantial loss to the country's GDP, productivity, and social welfare. Hence, the development of cost-effective policies to rehabilitate the offenders has been a high priority for the government.

The Ban the Bow (BTB) policy aims to increase employment opportunities for ex-offenders by prohibiting employers from asking about criminal history on the job application. Usually, employers use the criminal history question to eliminate ex-offenders from the candidate pool without looking at the candidate's qualifications, the degree of the felony, date, or even whether the candidate was wrongfully convicted. The criminal history question further creates disparate impact discrimination; it unequally affects different demographic groups. Studies show that 90% of incarcerated individuals are males (Scommegna 2012) and that only 1% of released offenders had a college degree. Two-thirds of incarcerated individuals are younger than 31 years old (Yang 2017). Furthermore, black men are five times more likely to be incarcerated than white men, and Hispanics are 1.3 to 4.1 times more likely to be imprisoned than white men (Nellis and Fetting, 2021). Since young, low-skilled black and Hispanic men are incarcerated at higher rates, they are more handicapped by the criminal history question. Allegedly, forcing the employer to assess a candidate based on their qualifications would provide ex-offenders with a fair chance at employment.

The BTB was first implemented in Hawaii in 1998. The following state to adopt the BTB was Minnesota in 2009. By 2021, 37 states have adopted the policy (Avery 2021). The state

determines if the BTB applies to public agencies, private and public agencies, or public agencies in the executive branch only (Avery 2021). There are still some limitations to the policy. Some industries, such as child care, security and health care, reserve the right to ask for an applicant's criminal history (Harless 2013).

The BTB policy intends to create a more inclusive job market, but concerns have arisen about the unintended consequences of the policy. While empirical research shows that BTB improves white ex-offenders' employment chances, it also leads to more racial discrimination (Agan and Starr 2018). The researchers interpret this phenomenon as employers using applicants' race or ethnicity to make assumptions about their criminal history.

This paper examines the consequences of the BTB on racial discrimination in the labor market. While past studies have analyzed the effects of the policy on racial discrimination, we have not come across a study that controlled for racial animus in their analysis. We believe that the level of racial animus may lead to an omitted variable bias because we would expect that the adoption of BTB would have a more negative effect on the employment of black or Hispanic males in states with high racial animus. Furthermore, most papers were published shortly after the adoption of BTB. For example, Doleac and Hansen's paper published in 2014 looked at data until 2014, when only ten states had adopted the BTB. We had the opportunity to look at more extended periods from 2006 to 2019, which enabled us to look at longer-term results, and have more extensive data sets since 27 states adopted the policy after 2014 (Avery 2021). Our hypothesis is that states with higher levels of racial animus would have a more significant adverse effect on the employment of black males after adopting the BTB policy.

The following section will focus on the past literature on the effects of BTB and discrimination in the labor market. We will primarily focus on Jennifer Doleac and Hansen's

paper, "The Unintended Consequences of 'BTB': Statistical Discrimination and Employment Outcomes When Criminal Histories Are Hidden", and explain how our research contributes to their work. The following sections include a description of our data, empirical strategy, and a discussion of the results and limitations of our analysis.

II. Literature Review

Our project heavily relies and expands on Doleac and Hansen's (2017) work investigating the effect of BTB on employment. Doleac and Hansen found that adoption of the BTB had a negative effect— 3.4 percentage point decrease— on the probability of employment of young, low-skilled black men.¹ They also found that Hispanic men face a 2.3 percentage point decrease in the likelihood of their employment after the implementation of BTB. This study suggests that employers make assumptions about a person's criminal records based on their race or ethnicity whenever criminal records information is prohibited. We will rely on Doleac and Hansen's paper for methodology and regression models since our paper builds on their work. Their study, however, did not take into account the racial animus in the states since that could also have an effect on making race-based judgements, which is what our project attempts to account for. Additionally, the researchers used CPS to collect their data while we worked with the ACS. In the following sections, we will tackle how we base our research on Doleac and Hensen's work in greater length.

In another related paper, Shoag and Veuger (2016) looked at the effect of BTB on a different demographic—women. This study found that BTB harmed women's employment. The explanation for the results provided is such that women are less likely to be convicted of crimes

¹ In our paper, we use “young” to refer to individuals in the 25-34 age range. We use “low-skilled” to refer to individuals who have not attended college.

statistically, so with no proof of lack of the criminal records, which is the consequence of BTB implementation, women are worse off than they would have been if that record of no criminal record was presented. Another reason is that employers started looking more closely into education and experience with the discarding of criminal records, which led to upskilling and higher standards that women are also statistically less likely to meet than men. This paper also found that the employment rate also decreased by 4% for residents of high-crime areas. This means that BTB disadvantages women and people living in high-crime areas. It is essential to consider this study as it further confirms Doleac and Hansen's point that BTB has unintended consequences in hiring decisions for specific groups.

Agan and Star (2018) conducted a field experiment to see how BTB affects the likelihood of getting an interview. By sending thousands of job applications, they found that despite the callback rates being higher for white applicants before BTB, the callback rate for black applicants decreased six times more after the BTB implementation in New York and New Jersey. This study supports Doleac and Hansen's findings and is crucial for our study since this allows us to look at the results of a random control trial that we cannot do at this scale.

A study by Autor and Scarborough (2008) analyzed how the performance of minority groups on personality tests affects the hiring decision. While this paper is not directly related to Ban the Box policy, it looks at the effect of lack of precise information on employment decisions. The study found that the personality tests generally decreased a person from a minority group's chances of being hired. Not providing the information would also decrease their probability of employment as the employers would assume a low score on the test. This study shows that omitted information can be as disadvantageous as information known to decrease someone's chances of employment. While this study looks at a different hiring factor than Ban the Box, it is

still important to us to see that a lack of information on a job application penalizes an applicant because of people's assumptions in this case.

Bertrand and Mullainathan (2003) conducted a similar experiment using interview callbacks. Their experiment focused on racial discrimination in the labor market, which has a similar motivation as our project. For this experiment, the researchers sent out resumes with either White-sounding names or Black-sounding names to manipulate the perception of race in the decision-making. They found shocking results, with white-sounding names applicants getting 50% more callbacks than black-sounding names. They also looked at low-skilled and high-skilled applicants with White and Black-sounding names and the effects of the neighborhoods where the applicants supposedly live. They found that White applicants experience a 30% increase in callback if they are high-skilled, while Black-skilled applicants experience a much smaller increase. They also discovered that living in a better neighborhood increases individuals' chances of getting a callback, regardless of their race. This is one of the first studies we have encountered about racial discrimination in the labor market. It was a motivator for our research topic since it opened our eyes to the scale of racial discrimination in employment decision-making.

These studies served as the backbones of our project since they all underscore how minority or historically disadvantaged groups continue to face barriers in the labor market.

III. Data

We merged the data from the American Community Survey (ACS), BTB adoption, and Google Trends for the 2006-2019 time period. The ACS is an annual survey of 3.5 million households conducted by the U.S. Census Bureau since 2005, providing data on age, sex, race,

ethnicity, education, and employment status. Another option was to follow Doleac and Hensen's footsteps and use the Current Population Survey (CPS), which includes data on the pre-2005 period but surveys only 100,000 households annually. However, the period of the CPS would not provide a considerable advantage to us because only one state, Hawaii, had adopted BTB prior to 2005. Therefore, we prioritized the large sample size and chose the ACS data. Professor Coile shared the data on the adoption of the BTB policy by state, and we updated this data for some of the states following the information posted on the NELP website (Avery 2021). Figure 1 displays the states that adopted the BTB by the end of 2019, and Table 2.1 details the type of BTB and the year of its adoption. We then collected the data on racial animus using Google Trends, following the example of Stephens-Davidowitz (2014).

Since racial animus is the key variable that we are adding to Doleac and Hansen's model, we needed to be able to measure racial animus across the states over the years that we have data for BTB. We collected the data on the relative frequency of search for racially charged words from 2006-to 2021. To choose the words for this purpose, we heavily relied on the work by Stephens-Davidowitz (2014). We include a table of words from this article in the data appendix. Figure 2 shows the average relative level of racial animus by states over the years 2006-2021. Since Google Trends includes the comparative data and the search terms with low volume have a frequency of "0", we decided to turn racial animus into a dummy variable. We chose the median, 50, as our threshold value, so the racial animus equals 1 in the states with racial animus above 50.

When working with the ACS data, we dropped observations for people who were not in the labor force so that our sample consists of the employed and unemployed population only. Moreover, Doleac and Hansen limited their sample to the black and white population, so we

decided to follow their example and drop observations for other races. We also only focused on Hispanics as an ethnicity. Following Doleac and Hansen's example, we decided to look at male individuals who are young and low-skilled. Overall, 88% of our population sample was white, and 12% was black; 14% was Hispanic. As a result, our total includes 757,939 observations in our specific group of interest –low skilled young white, black, or Hispanic males. Table 1 presents the summary statistics for our primary population of interest.

IV. Economic Model

Our empirical strategy for identifying the effect of BTB policy on racial discrimination in the job market relies on the difference-in-difference model. As shown in Table 2.1, 37 states have adopted the BTB policy since 1998. We take advantage of this random assignment to treatment and control groups by focusing on the difference in the employment of white, black and Hispanic men in states with and without the policy.

Our first regression is based on the regression used by Doleac and Hansen and does not include the racial animus variable:

$$Employed_{ist} = \beta_0 + \beta_1 BTB_{st} + \beta_2 BTB_{st} * Black_{is} + \beta_3 BTB_{st} * Hispanic_{is} + \beta_4 Black_{is} + \beta_5 Hispanic_{is} + \beta_6 age_{ist} + \alpha_s + \pi_t + e_{ist}, \quad (1)$$

where the dependent variable, $Employed_{ist}$, is a dummy variable for employment status of individual i in state s , and year t . $Employed_{ist}$ equals 1 if the individual i in state s is employed in

year t . BTB_{st} is a dummy variable that equals 1 if any BTB policy (public, private or both) is in effect in the individual's state in the specific year. The coefficients of interest, β_2 and β_3 , capture the effect of the BTB policy on the probability that a black or Hispanic man is employed, after BTB is implemented relative to the omitted group, white. Black and Hispanic are dummy variables and their coefficients control for the effect of race and ethnicity on employment. We are also including the continuous age variable to account for the effect of age on employment. Since age is correlated with experience, that affects the probability of employment. Our model further controls for unobserved heterogeneity by including fixed effects. α_s controls for the time invariant differences in employment across states, and π_t controls for changes over time in employment rates. This model further assumes that the fixed effects and the age effects are the same for all groups.

Doleac and Hansen's preferred model interacts the control variables with race and ethnicity to allow the fixed effects to differ across the demographic groups. This approach is equivalent to running the following regression separately for each demographic group:

$$Employed_{ist} = \beta_0 + \beta_1 BTB_{st} + \beta_2 age_{ist} + \alpha_s + \pi_t + e_{ist} \quad (2),$$

where the key coefficient of interest, β_1 , represents the effect of BTB on employment of a particular demographic group. Since the fixed effects should be close for all demographic groups, we expect the β_1 coefficient for a particular group to closely resemble the coefficient on interaction terms between the particular group and the BTB variable in regression 1.

Our third regression incorporates the racial animus variable:

$$Employed_{ist} = \beta_0 + \beta_1 BTB_{st} + \beta_2 RacialAnimus_{st} + \beta_3 BTB_{st} * RacialAnimus_{st} + \beta_4 age_{ist} + \alpha_s + \pi_t + e_{ist} \quad (3),$$

$RacialAnimus_{st}$ represents a dummy variable that equals 1 if the racial animus in the state is above 50th percentile value. Our key coefficient of interest, β_3 , represents the additional effect of BTB on employment in the state with high racial animus. We run this regression separately for each demographic group to allow the fixed effects and age effects to differ by race and ethnicity. Running this regression separately by demographic group diminishes our statistical power, but we prefer this model because the fixed effects may differ by race and ethnicity.

All three regressions are linear probability models because employment is a dummy dependent variable. Dummy dependent variable violates homoscedasticity, which is one of the Gauss-Markov assumptions for the OLS model. Therefore, we run the regressions with robust standard errors because that calculation does not rely on the homoscedasticity.

The identifying assumption of this model is parallel trends, meaning that the employment trends would evolve similarly in the absence of BTB. We looked at the effect of BTB on the probability of employment for black men, age 24-35, with no college degree on Figure 3(a-c) to check for Parallel trends. We used three treatment states– California, Massachusetts, New York–that adopted BTB at different years to compare with the control group (States with no BTB²). Before the implementation of the BTB policy in each diagram, we see some similar trends between the treatment and control states, however, after the year where the policy was

² States that did not ever adopt BTB: AL, AK, AR, DC, FL, ID, KS, MS, MT, SC, SD, TX, WV, WY.

adopted, we see that the lines diverge, at least for one year. This break in trends is particularly noticeable in Figure 3(b), for Massachusetts, where there is a clear decrease in employment after the policy was put into place (2010), while the control states experience a constant increase in the probability of employment. Since we are comparing the outcome of one state versus an average of all the control states, our analysis for parallel trends has some limitations. We, nonetheless, came to the conclusion that our parallel trend assumption holds.

V. Empirical Results

A. Replication results.

Doleac and Hansen's paper (2017) found that BTB reduced employment for black men by 3.4 percentage points and for Hispanic men by 2.3 percentage points. Our primary interest was to see how our results from using the ACS 2006-2014 data would compare to the results found by Doleac and Hansen from the CPS. This replication is important for establishing the baseline and evaluation of the role of racial animus. Our replication sample is 2% smaller than Doleac and Hansen's because we have no observations for years 2004 and 2005.

Table 2 presents our replication results. Column 4 shows the results for the model specification that includes all the demographic groups. The signs of the coefficients – negative for black and Hispanic, and positive for white – match our expectations and are consistent with Doleac and Hansen's. The magnitude and the statistical significance of the coefficients, however, are different. BTB leads to a very small, statistically insignificant increase in employment for white individuals (having BTB leads to a 0.03 percentage point increase in probability of employment). We however find that BTB is associated with a 0.76 percentage point decrease in

the likelihood of employment of black men and a statistically significant 1.6 percentage points ($p < 0.005$) decrease in probability of employment for Hispanic men. The difference in statistical significance may stem from the larger sample size for the Hispanic population (98,397 observations for Hispanic versus 58,646 observations for black).

Doleac and Hansen's preferred model interacts the control variables with race and ethnicity. Column 1 through 3 in Table 2 show our results from running the same regression separately by demographic group. This model allows the coefficients of other variables to differ by demographic group. The results were consistent with the results from the first specification. The only notable difference was in the effect of age on chances of employment. A one-year increase in age is associated with an 0.83 percentage point increase in the likelihood of being employed for black, which is twice the effect of age for employment for white and Hispanic – 0.416 and 0.316 percentage points respectively.

We also followed Doleac's model but extended the time period. Table 3 shows our results from running the same regression separately by demographic group from 2006 to 2019. Our results still match our expectations and are consistent with Doleac and Hansen's. Consistent with our expectations, the introduction of BTB is associated with a statistically significant ($p < 0.05$) 0.3 percentage point increase in the probability of employment of white men. We also find that BTB is associated with a statistically significant ($p < 0.01$) 1.35 percentage point decrease in the likelihood of employment of black men. This increase in statistical significance can be partly attributed to a larger sample size—the number of observations for black men went up from 58,646 to 90,710 when we included observations for 2014-2019. The negative effect of the ban on Hispanic men has lost its statistical significance and decreased in magnitude. Our age coefficients remain fairly similar, and all statistically significant ($p < 0.001$).

B. The effect of racial animus on employment.

Table 3 presents the results from the regression with the racial animus variable. We started by adding the racial animus to Doleac and Hansen's model for time period 2006-2014 to test if the results would change with the introduction of this previously omitted variable. Since we assume that racial animus was an omitted variable, we are interested how introduction of these variables affects the other coefficients. The coefficient on black further decreases to a value close to 0, and the standard errors on the coefficient go down, which suggests that black coefficient was previously negatively biased since it picked up the effect of the omitted factor—racial animus.

The results suggest that adoption of BTB in the state with high racial animus reduces the probability that low-skilled black men are employed by statistically significant ($p < 0.003$) 6.82 percentage points. The effect of the ban on employment of black males becomes positive, but remains statistically insignificant, as in the regression without the racial animus. Further, contrary to our expectations, the racial animus has a positive effect on employment of black men and a statistically significant ($p < 0.05$) negative effect on employment of white men. The coefficients for the Hispanic group do not change much: the effect of the ban becomes more negative, - 1.92, and remains statistically significant ($p < 0.01$). The racial animus has a negative effect on employment of Hispanic men, but being in a state with high racial animus after the adoption of the BTB has a positive effect on employment of Hispanic men.

Table 4 presents the results from regressions with racial animus variable for the 2006-2019 period. The introduction of BTB in the states with high racial animus is associated with a 0.4 percentage point decrease in employment of black men and a statistically significant

($p < 0.05$) 0.5 percentage point increase in the employment of white males. To our surprise, the racial animus continues to have a positive effect on employment of black men and statistically significant negative effect on employment of white men. All the coefficients for Hispanic men, except for the age coefficient, are not statistically insignificant, but have the expected signs: the effect of the ban and racial animus is negative.

The goodness-of-fit increases from 0.0244 to 0.0245 for the black men group when we introduce the racial animus variable for the 2006-2014 period. The goodness-of-fit remains unchanged for the other groups. This paltry increase in the goodness of fit suggests that the introduction of racial animus variables helps to explain more of the variation in the employment of black men. Interestingly, the goodness of fit does not change for any groups when we repeat the same analysis for the 2006-2019 time period.

VI. Discussion

The results of our analysis support Doleac and Hansen's conclusion that the adoption of BTB reduces the employment for low-skilled young black and Hispanic populations. However, we found that the negative effect of the BTB on employment of black and Hispanic workers depends on the level of racial animus in the state. Our results suggest that the introduction of the BTB policy only has negative consequences in the states with high levels of racial animus. Moreover, the negative effect of the BTB on black and Hispanic men has declined in the recent years, which we would like to interpret as a hopeful sign of a decline in the racial discrimination in the labor market.

We would also like to mention a few results that we did not include in our paper. We experimented by running the analysis with racial animus as a continuous and as a dummy

variable. We were concerned about using racial animus as a continuous variable due to the measurement error. The reason is that Google Trends only stores the relative data and drops the observations for low frequency rates, so we suspected our coefficient to be biased towards zero. Therefore, we decided to use the dummy variable in our analysis. Nevertheless, the values with racial animus as a continuous variable show similar effects on employment of different demographic groups. We also ran the regressions for the effect of BTB after one, two, and five years because we came across an article that argued that the effects of the BTB may be lagged because ex-offenders may not be aware of the BTB (Hughes, 2022). However, our results with the time lagged model did show very similar coefficients³, and we believe that we need to investigate the issue of lack of awareness further to have a stronger understanding of our results.

In the future, we would also like to do the analysis separately for different types of BTB legislations (public, private or both) to study if the racial discrimination in the labor market varies by the type of employers. Furthermore, although BTB was implemented at the state level, some counties and cities follow different restrictions when it comes to the policy. For example, Los Angeles and California's general rule do not have the same limitations when it comes to BTB. BTB in Los Angeles concerns employers with more than 10 employees, compared to more than 5 employees in California (Johnson, Suarez 2016). Doleac and Hansen's work goes a little further by focusing on counties and cities. We only looked at the BTB law per state, which means we lost some level of precision and had to work around assumptions of generality. We could get different results for different types of companies and cities that have different affirmative action policies that would affect our results. Looking at smaller areas rather than states, such as countries, cities, and commuting areas, could also improve this study since there

³ The authors would be happy to provide the regression results with racial animus as a continuous variable and with the lagged BTB variable upon request.

is a lot of variation in racial animus and employment types within the state that might have impacted the results. Additionally, adding more of the relevant variables and checking for individual fixed effects in areas that this study might have missed, would be another improvement and extension of this study.

Another possible issue is legislative endogeneity. We are relying on the assumption that the assignment to treatment and control states is exogenous, which may not be true in the real world. We are treating BTB as a single legislative measure to prevent employment discrimination, though it would also be useful to look at other policies implemented for this purpose in addition to BTB in the given state. States that implemented BTB, could also be more likely to adopt other policies to support integration of ex-offenders into the labor market. The aforementioned affirmative action laws would be a premiere addition to this model since allegedly they would directly affect employment for black and Hispanic men.

Other valuable extensions to our work would include looking at the effect of the BTB on gender inequality in the labor market, and the effect on groups of different education levels. For example, Shoag and Veuger (2012) paper found that women with no college degree face more barriers in the labor market upon introduction of the BTB. It would be relevant to continue this study and compare the outcomes between groups of different gender and different education levels.

While there is extensive work done on the effects of the BTB policy, there are many layers to this study that go beyond the scope of this paper, but can further contribute to the evaluation and improvement of policies aimed to increase job opportunities for the ex-offenders. From our analysis, we conclude that the BTB does not have the same effect on employment of black males in all states. The effect of the BTB is more negative in the states with high racial

animus. Therefore, upscaling the policy might result in unintended negative consequences on employment of different demographic groups. These findings suggest that additional steps must be taken to promote racial equality and diversity at the workplace to ensure that the BTB policy reaches its key goals.

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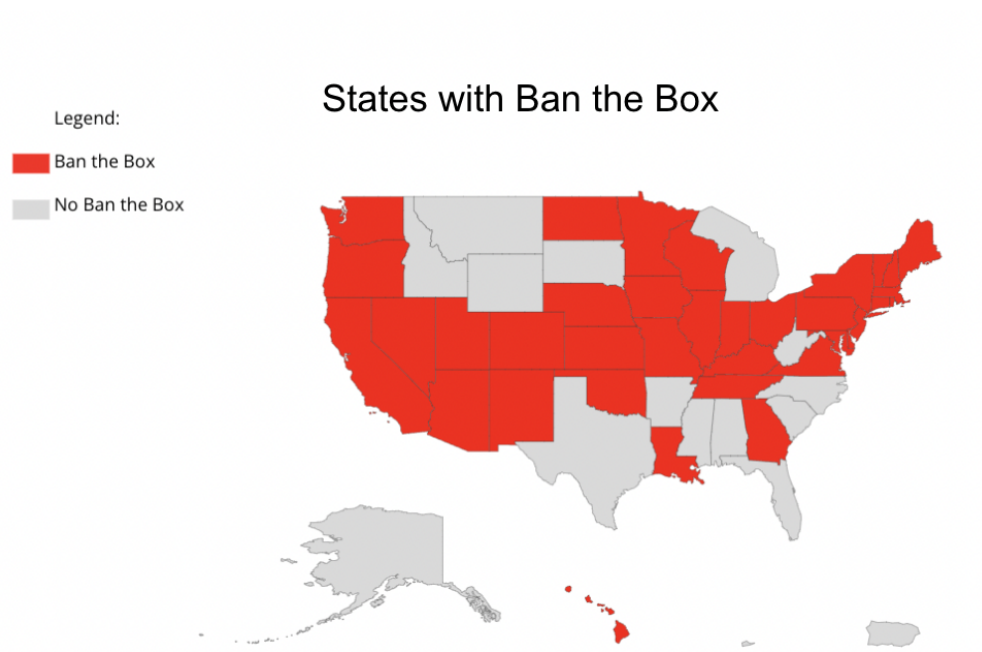
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VIII. Figures & Tables

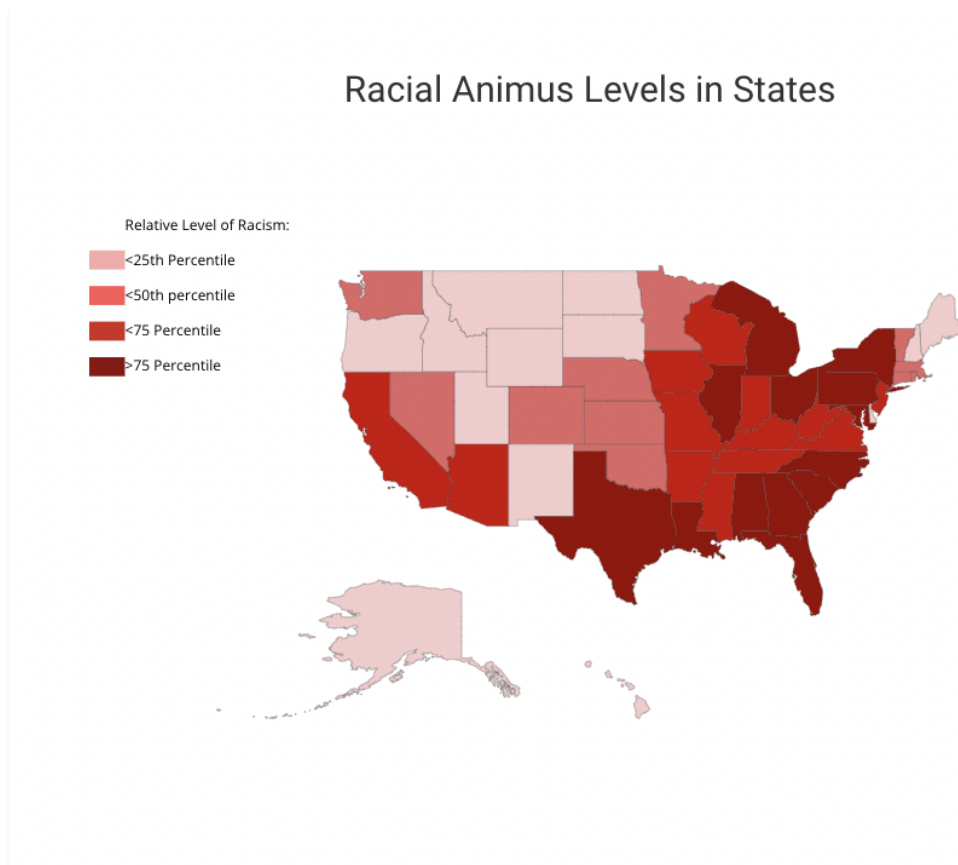
Figures

Figure 1: BTB per State



States with BTB policies are represented by red shading (state-level policies).

Figure 2: Relative Racial Animus by State

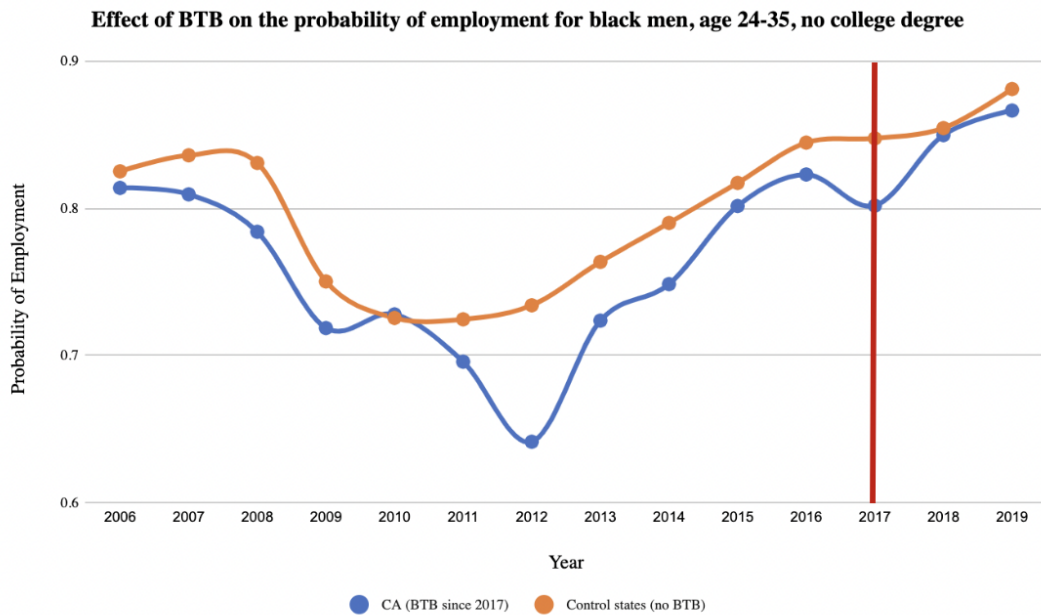


Relative Racial Animus was measured as an average of the racial animus levels through the years. Using the data we collected on google trends, we compared the average racial animus level in each state and separated our states into 4 categories: <25th percentile, <50th percentile,

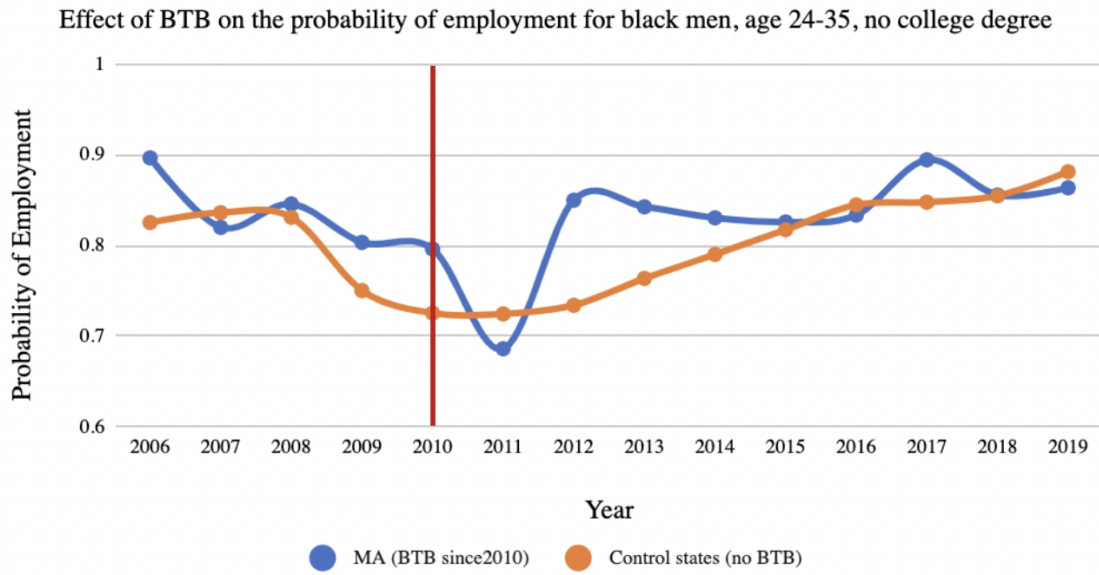
<75th percentile, and >75th percentile. The darker areas represent the states with the most racial animus, and the lightest ones, the ones with the least relative racial animus.

Figure 3: Effect of BTB on the probability of employment for black men, age 24-35, no college degree

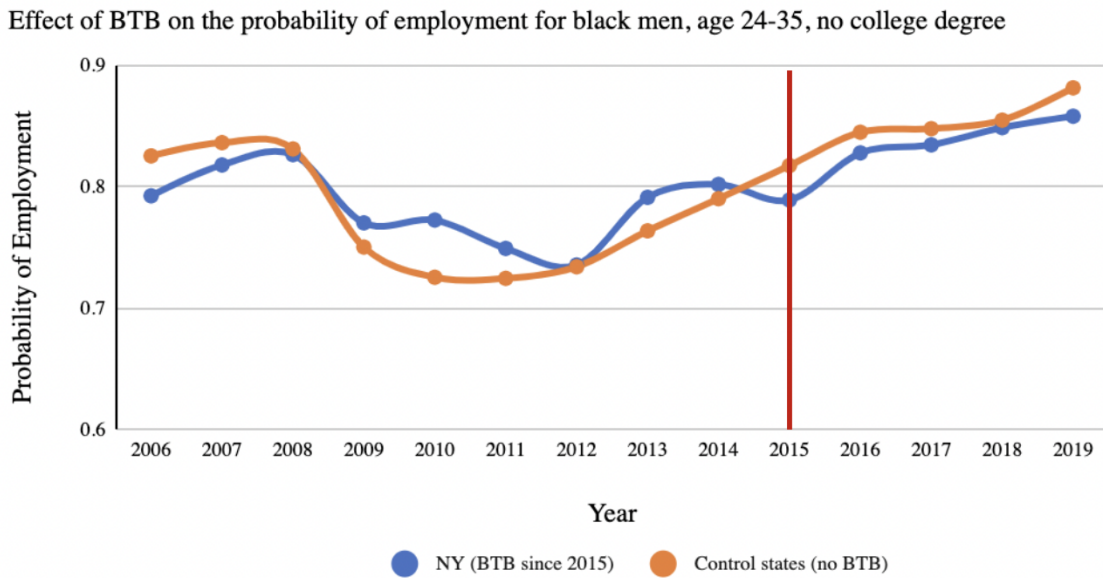
a) California (Treatment Group) vs. Control States



b) Massachusetts (Treatment Group) vs. Control States



c) New York (Treatment Group) vs. Control States



Data source: ACS 2006-2019. Sample includes black men ages 25-34 who do not have a college degree. To check for parallel trends despite the fact that most states implemented the policy at

different years, we used 3 Treatment states who adopted BTB at different times (California, Massachusetts, New York) as a tool for comparison with the control group (States with no BTB).

Tables

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Year	757 939	2012.422	4.027	2006	2019
Statefip	757 939	28.358	16.051	1	56
Age	757 939	29.468	2.876	25	34
Racial animus	757 939	47.541	12.310	11	74
Animus	757 939	0.524	0.499	0	1
White	757 939	0.880	0.325	0	1
Black	757 939	0.120	0.325	0	1
Hispanic	757 939	0.200	0.400	0	1
BTB	757 939	0.225	0.418	0	1
Ban Public	757 939	0.129	0.335	0	1
Ban Public-Private	757 939	0.0854	0.28	0	1
Higrad	757 939	0.834	0.372	0	1
Employed	757 939	0.894	0.308	0	1

Source: ACS (2006-2019), Google trends (2006-2019), Avery (2021)

Table 2: Effects on employment for men ages 25-34 with no college degree (2006-2014)

	White	Hispanic	Black	All
	(1)	(2)	(3)	(4)
BTB	0.0003 <i>0.0030</i>	-0.0162** <i>0.0063</i>	-0.0187 <i>0.0120</i>	0.0033 <i>0.0032</i>
Age	0.0041*** <i>0.0001</i>	0.0031*** <i>0.0003</i>	0.0083*** <i>0.0006</i>	0.0046*** <i>0.0002</i>
Ban*Black				-0.0076 <i>0.0095</i>
Ban*Hispanic				-0.0162*** <i>0.0058</i>
Black				-0.1277*** <i>0.0018</i>
Hispanic				0.0267*** <i>0.0012</i>
N	435 233	98 397	58 646	493 879
Controls				
State FE	X	X	X	X
Year FE	X	X	X	X
R ² adjusted	0.0145	0.0133	0.0244	0.0327
*** p<0.01	**p<0.05	*p<0.1		

Source: ACS (2006-2019), Google trends (2006-2019), Avery (2021). Coefficients show the effect (in percentage points) of BTB on the probability of employment for each demographic group.

Table 3: Effects on employment for men ages 25-34 with no college degree (2006-2014) with and without racial animus

	White		Hispanic		Black		All	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ban	0.0003 0.0030	-0.0026 0.0035 -0.0040** 0.0016	-0.0162** 0.0063	-0.0192** 0.0076 -0.0017 0.0033	-0.0187 0.0120	0.0125 0.0150 0.0044 0.0059 -0.0682***	0.0033 0.0032	0.0043 0.0037 -0.0038** 0.0016 -0.0047 0.0063 0.0046*** 0.0001
Racial Animus								
Ban*Racial Animus		0.0081 0.0064		0.0088 0.0134				
Age	0.0042*** 0.0002	0.0042*** 0.0002	0.0032*** 0.0003	0.0032*** 0.0003	0.0083*** 0.0006	0.0083*** 0.0006	0.0046*** 0.0001	0.0046*** 0.0001
Ban*Black							-0.0076 0.0095	-0.0076 0.0095
Ban*Hispanic							-0.0162*** 0.0058	-0.0163*** 0.0058
Black							-0.1280*** 0.0018	-0.1280*** 0.0018
Hispanic							0.0267*** 0.0012	0.0267*** 0.0012
N	435 233	435 233	98 397	98 397	58 646	58 646	493 879	493 879
Controls								
State FE	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X
R ² adjusted	0.0145	0.0145	0.0133	0.0133	0.0244	0.0245	0.0327	0.0327

*** p<0.01 **p<0.05 *p<0.1

Source: ACS (2006-2014), Google trends (2006-2014), Avery (2021). We compared our results replicating Doleac's work to ours when adding the racial

animus variable. Coefficients show the effect (in percentage points) of BTB on the probability of employment for each demographic group with and without adding Racial Animus as a variable.

Table 4: Effects on employment for men ages 25-34 with no college degree (2006-2019) with and without racial animus

	White		Hispanic		Black		All	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ban	0.0030** 0.0013	0.0003 0.0017 -0.0034** 0.0014	-0.0023 0.0026	-0.0057 0.0035 -0.0024 0.0029	-0.0135*** 0.0049	-0.0108 0.0072 0.0013 0.0051	-0.0001 0.0013	-0.0023 0.0017 -0.0033*** 0.0014
Racial Animus								
Ban*Racial Animus		0.0050** 0.0019		0.0063 0.0043		-0.0041 0.0081		0.0042** 0.0019
Age	0.0036*** 0.0001	0.0036*** 0.0001	0.0030*** 0.0002	0.0030*** 0.0002	0.0083*** 0.0006	0.0069*** 0.0005	0.0040*** 0.0001	0.0040*** 0.0001
Ban*Black							0.0208*** 0.0032	0.0205*** 0.0032
Ban*Hispanic							-0.0087*** 0.0019	-0.0087*** 0.0019
Black							-0.1178*** 0.0016	-0.1180*** 0.00164
Hispanic							0.0245*** 0.0010	0.0245*** 0.0010
N	66 7229	66 7229	151 859	151 859	90 710	90 710	757 939	757 939
Controls								
State FE	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X
R ² adjusted	0.0145	0.0145	0.0138	0.0138	0.0280	0.0280	0.0312	0.0313

*** p<0.01 **p<0.05 *p<0.1

Source: ACS (2006-2019), Google trends (2006-2019), Avery (2021). Coefficients show the effect (in percentage points) of BTB on the probability of employment for each demographic group with and without adding Racial Animus as a variable.

IX. Data Appendix

Table 1.1:

Number	Word
1	[Word 1] jokes
2	white [Word 1]
3	[Word 2]
4	hate [Word 1]
5	i hate [Word 1](s)
6	black jokes
7	the word [Word 1]
8	racist jokes
9	kkk

Racial Animus Google Trends Search. Words from Seth Stephens-Davidowitz “The Cost of Racial Animus on a Black Candidate: Evidence Using Google Search Data” (2014) Table 2. ⁴

⁴ [Word 1] stands for n***** and [Word 2] stands for n*****

Table 2.1: BTB Adoption per State

STATE	BAN THE BOX	YEAR	TYPE OF BAN
ALABAMA	NO		
ALASKA	NO		
ARIZONA	YES	2017	1
ARKANSAS	NO		
CALIFORNIA	YES	2017	2
		2012	1
COLORADO	YES	2019	2
CONNECTICUT	YES	2016	2
DELAWARE	YES	2014	1
DISTRICT OF COLUMBIA	YES	2014	2
FLORIDA	NO		
GEORGIA	YES	2015	1
HAWAII	YES	1998	2
IDAHO	NO		
		2013	1
ILLINOIS	YES	2014	2
INDIANA	YES	2017	3
IOWA	YES	2018	3
KANSAS	YES	2018	1
KENTUCKY	YES	2017	3
LOUISIANA	YES	2016	1
MAINE	YES	2019	1
MARYLAND	YES	2013	1
MASSACHUSETTS	YES	2010	2
MICHIGAN	YES	2018	1
		2009	1
MINNESOTA	YES	2013	2
MISSISSIPPI	NO		
MISSOURI	YES	2016	1
MONTANA	NO		
NEBRASKA	YES	2014	1
NEVADA	YES	2017	1
NEW HAMPSHIRE	YES	2020	1
NEW JERSEY	YES	2014	2
		2010	1
NEW MEXICO	YES	2019	2
NEW YORK	YES	2015	1
NORTH CAROLINA	YES	2020	1
NORTH DAKOTA	YES	2019	1
OHIO	YES	2015	1
OKLAHOMA	YES	2016	1
OREGON	YES	2015	2
PENNSYLVANIA	YES	2017	1
RHODE ISLAND	YES	2013	2
SOUTH CAROLINA	NO		
SOUTH DAKOTA	NO		
TENNESSEE	YES	2016	1
TEXAS	NO		
UTAH	YES	2017	1
VERMONT	YES	2016	2
VIRGINIA	YES	2015	1
WASHINGTON	YES	2018	2
WEST VIRGINIA	NO		
WISCONSIN	YES	2016	2
WYOMING	NO		

BTB implementation per state and the year it was implemented using Avery Beth’s data on BTB from her article. “BTB: U.S. Cities, Counties, and States Adopt Fair-Chance Policies to Advance Employment Opportunities for People with Past Convictions.”. The policy is separated into 3 categories:

- 1 = If banned for public agencies
- 2 = If banned for private and public agencies
- 3 = If banned for public agencies in the executive branch only