

Racial Bias in Bail Decisions

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Background

Racial disparities exist at every stage of the U.S. criminal justice system. Compared to observably similar whites, blacks are :

- ▶ more likely to be searched for contraband (Antonovics and Knight 2009)
- ▶ more likely to experience police force (Fryer 2016)
- ▶ more likely to be charged with a serious offense (Rehavi and Starr 2014)
- ▶ more likely to be convicted (Anwar, Bayer, and Hjalmarsson 2012)

Two Explanations

1. These racial disparities are driven by statistical discrimination, or the use of observable group traits such as race to form accurate beliefs about the unobservable characteristics of defendants (e.g., Phelps 1972; Arrow 1973).
2. Statistical discrimination alone cannot explain these disparities, leaving a role for various forms of racial bias, such as **racial animus** (e.g., Becker 1957) or **inaccurate racial stereotypes** (e.g., Bordalo et al. 2016).
 - ▶ However, distinguishing between these two contrasting explanations remains an empirical challenge.

Test for Racial Bias

- ▶ Becker (1957, 1993) proposed an outcome test that compares the success or failure of decisions across groups at the margin.
- ▶ **Infra-marginality problem** whites and blacks have different risk distributions (e.g., Ayres 2002).
- ▶ Two seminal papers circumventing this problem:
 - ▶ **Knowles et al. (2001)** & **Anwar and Fang (2006)** find no evidence of relative racial bias in police.

This Paper

- ▶ New outcome test for identifying racial bias in the context of bail decisions.
- ▶ Why Bail is an ideal setting?
 1. The legal objective of bail judges is narrow, straightforward, and measurable.
 2. It is prone to the kind of inaccurate stereotypes or categorical heuristics that exacerbate racial bias (e.g., Fryer and Jackson 2008; Bordalo et al. 2016)
 3. Bail decisions are extremely consequential for both white and black defendants.

Theoretical Framework

Taste-Based Discrimination

- ▶ The **marginal defendant** for judge j and race r is the defendant i for whom the expected cost of release is exactly equal to the perceived benefit of release

$$\mathbb{E}[\alpha_i^j | r_i = r] = t_r^j(\mathbf{V}_i)$$

- ▶ **Definition 1.** Following Becker (1957, 1993), we define judge j as racially biased against black defendants if $t_W^j(\mathbf{V}_i) > t_B^j(\mathbf{V}_i)$
- ▶ **Proposition 1.** If judge j is racially biased against black defendants, then $\alpha_W^j > \alpha_B^j$.

Theoretical Framework

Racially Biased Prediction Errors in Risk

- ▶ We can write the perceived cost of release as:

$$\mathbb{E}^j [\alpha_i | \mathbf{V}_i, r_i] = \mathbb{E} [\alpha_i | \mathbf{V}_i, r_i] + \tau_r^j(\mathbf{V}_i)$$

where $\tau_r^j(\mathbf{V}_i)$ is a prediction error that is allowed to vary by judge j and defendant race r_i

- ▶ **Definition 2.** We define judge j as making racially biased prediction errors in risk against black defendants if $\tau_B^j(\mathbf{V}_i) > \tau_W^j(\mathbf{V}_i)$
- ▶ **Proposition 2.** If judge j systematically overestimates the true expected cost of release of black defendants relative to white defendants, then $\alpha_W^j > \alpha_B^j$

Predictions

- ▶ Proposition 1 predicts:
 - No racial bias \Rightarrow Same probability of pre-trial misconduct rate.
- ▶ Proposition 2 predicts:
 - No systematically making prediction errors in risk varying with race \Rightarrow Same probability of pre-trial misconduct rate.

Estimation

- ▶ Naive OLS doesn't work!
- ▶ Two complementary estimators for racial bias that use variation in the release tendencies of quasi-randomly assigned bail judges to identify differences in pre-trial misconduct rates at the margin of release.
 1. IV Estimator
 2. MTE Estimator
- Let Z_j be a scalar measure of the assigned judge's propensity for pre-trial release for defendant- case i that takes on values ordered $\{z_0, \dots, z_J\}$, where $J + 1$ is the number of total judges in the bail system.
 - ▶ For example, a value of $z_j = 0.5$ indicates that judge j releases 50 percent of all defendants.

IV Setup

Judge Leniency Measure

- ▶ A race-specific estimator using Z_i as an instrumental variable for pre-trial release is valid under the following three assumptions:

- ▶ **Existence** $\text{Cov}(\text{Released}_i, Z_i) \neq 0$
- ▶ **Exclusion** $\text{Cov}(Z_i, \mathbf{v}_i) = 0$

Assumption 2 assumes that the assigned judge only affects pre-trial misconduct through the channel of pre-trial release

- ▶ **Monotonicity** $\text{Released}_i(z_j) - \text{Released}_i(z_{j-1}) \geq 0$

Data

1. Philadelphia court records available for all defendants arrested and charged between 2010 – 2014
2. Miami court records available for all defendants arrested and charged between 2006 – 2014

Descriptive Statistics

	All Defendants		White		Black	
	Released (1)	Detained (2)	Released (3)	Detained (4)	Released (5)	Detained (6)
<i>Panel A: Bail Type</i>						
Release on Recognizance	0.258	0.000	0.269	0.000	0.249	0.000
Non-Monetary Bail w/ Conditions	0.195	0.030	0.203	0.033	0.189	0.028
Monetary Bail	0.547	0.970	0.527	0.967	0.562	0.972
Bail Amount (in thousands)	13.235	35.286	11.957	24.782	14.180	42.227
<i>Panel B: Defendant Characteristics</i>						
Male	0.811	0.893	0.796	0.890	0.822	0.895
Age at Bail Decision	33.911	35.092	34.070	36.296	33.794	34.296
Prior Offense in Past Year	0.287	0.466	0.272	0.464	0.299	0.466
Arrested on Bail in Past Year	0.185	0.262	0.181	0.256	0.188	0.266
Failed to Appear in Court in Past Year	0.071	0.057	0.070	0.054	0.071	0.059
<i>Panel C: Charge Characteristics</i>						
Number of Offenses	2.722	3.162	2.544	2.587	2.854	3.541
Felony Offense	0.482	0.538	0.450	0.473	0.506	0.581
Misdemeanor Only	0.518	0.462	0.550	0.527	0.494	0.419
Any Drug Offense	0.390	0.260	0.373	0.244	0.403	0.271
Any DUI Offense	0.084	0.007	0.091	0.007	0.079	0.007
Any Violent Offense	0.310	0.331	0.288	0.241	0.326	0.390
Any Property Offense	0.238	0.387	0.237	0.406	0.239	0.376
<i>Panel D: Outcomes</i>						
Rearrest Prior to Disposition	0.237	0.042	0.226	0.037	0.245	0.045
Rearrest Drug Crime	0.111	0.006	0.106	0.005	0.115	0.006
Rearrest Property Crime	0.086	0.022	0.082	0.022	0.089	0.022
Rearrest Violent Crime	0.078	0.021	0.061	0.013	0.091	0.026
Failure to Appear in Court (Phl only)	0.258	0.006	0.250	0.006	0.264	0.007
Failure to Appear in Court or Rearrest	0.348	0.044	0.325	0.039	0.366	0.048
Observations	178,765	77,488	76,015	30,831	102,750	46,657

Table 1: Descriptive Statistics

Descriptive Statistics

- ▶ Released black defendants are 1.9% points more likely to be rearrested for a new crime before case disposition.
- ▶ In Philadelphia, released black defendants are 1.4% points more likely to fail to appear in court compared to white defendants.
- ▶ Defining pre-trial misconduct as either failure to appear or rearrest in Philadelphia, and only rearrest in Miami, released black defendants are 4.1% points more likely to commit any form of pre-trial misconduct compared to white defendants.

Instrument Validity

Existing of First Stage

$$\text{Released}_{itj} = \gamma_W Z_{itj} + \pi_W \mathbf{X}_{it} + v_{itj}$$

$$\text{Released}_{itj} = \gamma_B Z_{itj} + \pi_B \mathbf{X}_{it} + v_{itj}$$

	All Defendants		White		Black	
	(1)	(2)	(3)	(4)	(5)	(6)
Pre-trial Release	0.405*** (0.027) [0.698]	0.389*** (0.025) [0.698]	0.373*** (0.036) [0.711]	0.360*** (0.032) [0.711]	0.434*** (0.036) [0.688]	0.415*** (0.033) [0.688]
Court x Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	No	Yes	No	Yes
Observations	256,253	256,253	106,846	106,846	149,407	149,407

Table 2: First Stage Results

- ▶ Defendant assigned to a bail judge that is 10% points more likely to release a defendant pre-trial is 3.89% points more likely to be released pre-trial.

Results

$$Y_{itj} = \alpha_W^{IV} \text{Released}_{itj} + \beta_W \mathbf{X}_{it} + \mathbf{v}_{itj}$$

$$Y_{itj} = \alpha_B^{IV} \text{Released}_{itj} + \beta_B \mathbf{X}_{it} + \mathbf{v}_{itj}$$

	IV Results			MTE Results		
	White	Black	D^{IV}	White	Black	D^{MTE}
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Rearrest for All Crimes</i>						
Rearrest Prior to Disposition	0.236*** (0.073) [0.172]	0.014 (0.070) [0.182]	0.222** (0.101) -	0.249*** (0.084) [0.172]	0.017 (0.080) [0.182]	0.231** (0.117) -
<i>Panel B: Rearrest by Crime Type</i>						
Rearrest for Drug Crime	0.067 (0.043) [0.077]	0.019 (0.043) [0.081]	0.047 (0.060) -	0.074 (0.048) [0.077]	-0.024 (0.054) [0.081]	0.097 (0.074) -
Rearrest for Property Crime	0.158*** (0.057) [0.065]	-0.005 (0.047) [0.068]	0.163** (0.073) -	0.149** (0.066) [0.065]	0.043 (0.053) [0.068]	0.106 (0.084) -
Rearrest for Violent Crime	0.079** (0.039) [0.047]	-0.000 (0.042) [0.071]	0.080 (0.058) -	0.082* (0.044) [0.047]	-0.001 (0.050) [0.071]	0.083 (0.068) -
Observations	106,846	149,407	-	106,846	149,407	-

Table 3: Pre-trial Release and Criminal Outcomes

Results

- ▶ Marginally released white defendants are 23.6% points more likely to be rearrested for any crime compared to marginally detained white defendants.
- ▶ IV estimates imply that marginally released white defendants are 22.2% points more likely to be rearrested prior to disposition than marginally released black defendants **consistent with racial bias against blacks.**
- ▶ MTE estimates therefore imply that marginally released white defendants are 23.1% points more likely to be rearrested prior to disposition than marginally released black defendants, **consistent with racial bias against black defendants**

Potential Mechanisms

We want to differentiate between two alternative forms of racial bias that could explain our findings:

1. Racial animus (e.g., Becker 1957, 1993)
2. Racially biased prediction errors in risk (e.g., Bordalo et al. 2016).
 - ▶ Bail judges are making racially biased prediction errors in risk, potentially due to inaccurate anti-black stereotypes.

Seeking Mechanism

- ▶ IV and MTE estimates of racial bias are similar among white and black judges
 - ▶ Either racial animus is not driving our results or that black and white bail judges harbor equal levels of racial animus towards black defendants.
- ▶ [Bordalo et al. \(2016\)](#) anti-black stereotypes should only be present if blacks are over-represented among the right tail of the predicted risk distribution relative to whites
- ▶ Experience!
 - ▶ Racial bias is higher in Miami than Philadelphia
 - ▶ In Philadelphia, we find no statistically significant evidence of racial bias under either our IV or MTE estimates, suggesting the possible importance of experience in alleviating any prediction errors.

Risk Distribution

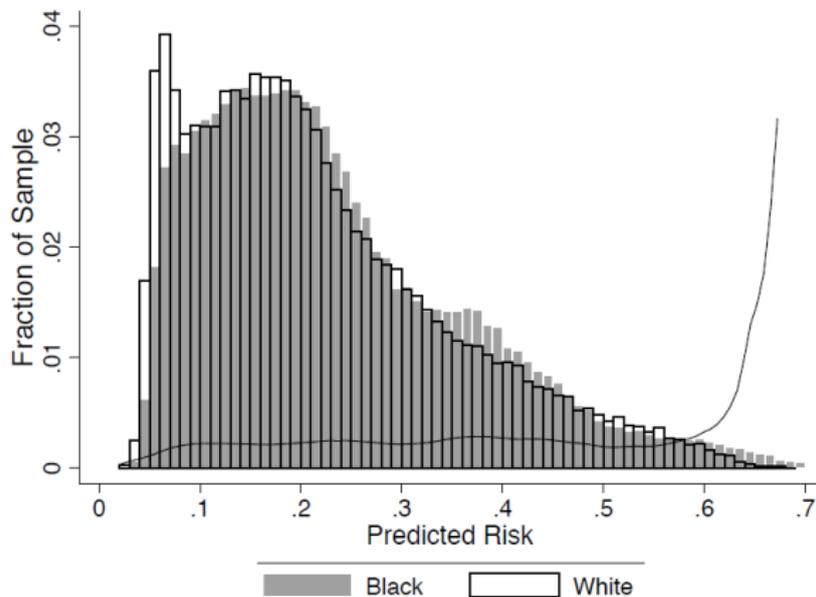


Figure 2: Predicted Risk Distribution by Defendant Race

Conclusion

- ▶ There is substantial bias against black defendants, ruling out statistical discrimination as the sole explanation for the racial disparities in bail.
 - ▶ Both white and black bail judges are racially biased against black defendants, a finding that is inconsistent with most models of racial animus.
 - ▶ Racial bias is significantly higher among both part-time and inexperienced judges, and descriptive evidence suggests that experienced judges can better predict misconduct risk for all defendants.
- ✓ These results are most consistent with a model of bail judges relying on **inaccurate stereotypes** that exaggerate the relative danger of releasing black defendants versus white defendants at the margin.

Thanks for your attention!