

Racial Bias in the Criminal Justice System

Racial Bias in Justice System

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September 26, 2025



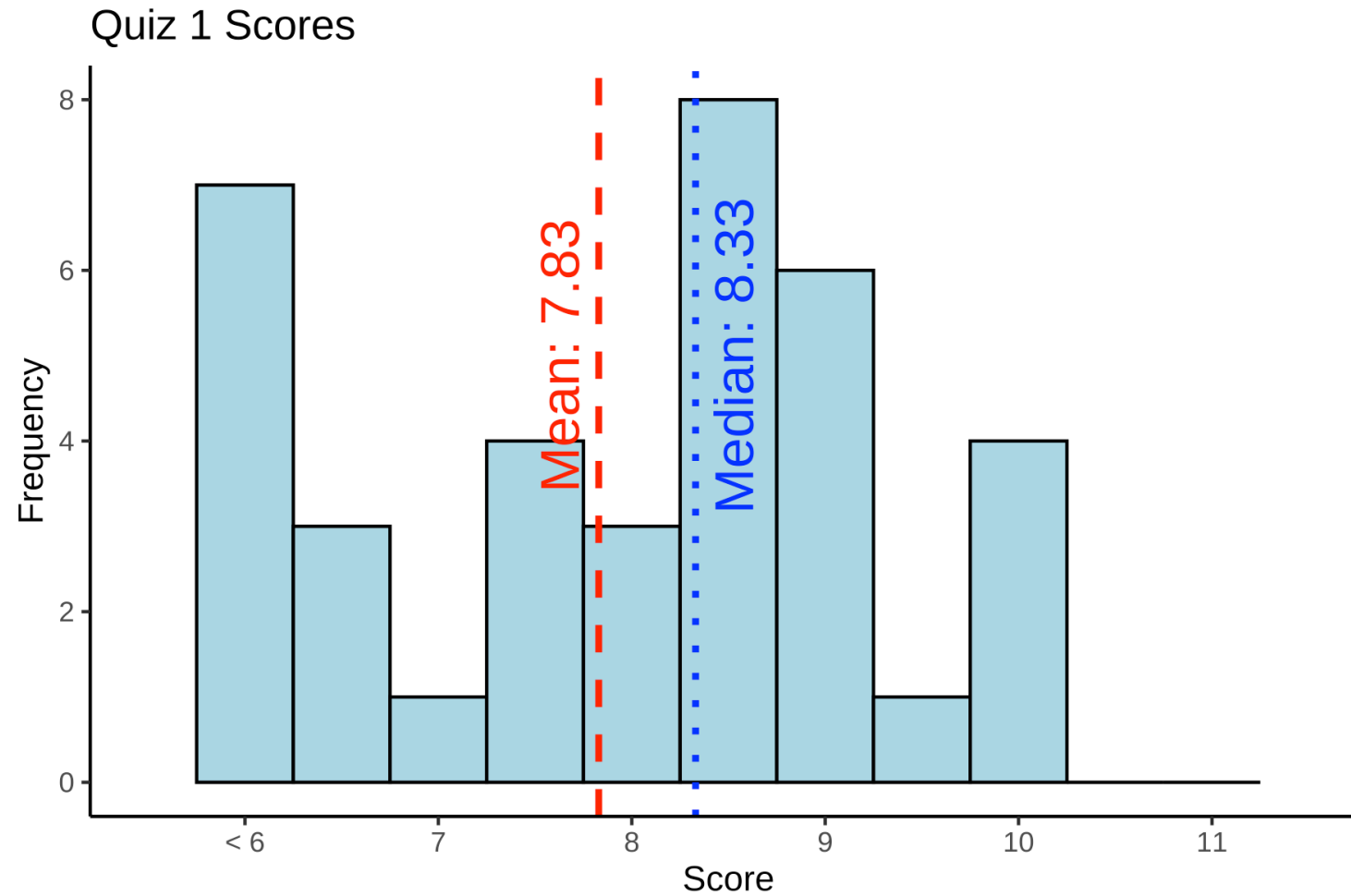
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University

Outline for Today

1. Intro to Judge Fixed Effects
2. Summarize Papers on Racial Bias in Criminal Justice System



Quiz 1 Stats





Next week

1. Quiz 2 (in class, open notes, open book, lockdown browser, etc.)
2. Rest of racial bias papers

Judge Fixed Effects



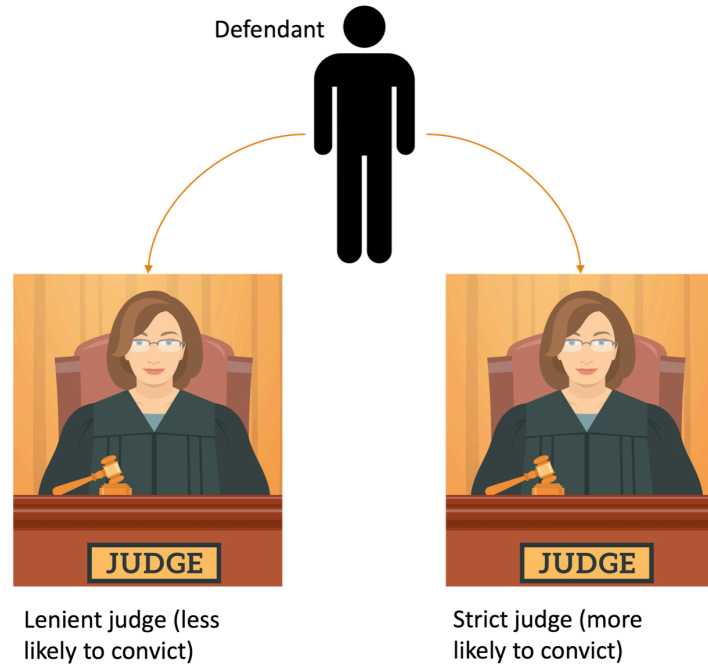
Judge Fixed Effects in a Nutshell

- **Conceptual Framework:** Judge fixed effects function akin to unobserved heterogeneity in econometric models, where the legal decisions—varies due to judge-specific traits and not solely due to the case specifics or legal arguments presented
- **Econometric Relevance:** In the econometric analysis of judicial behavior, judge fixed effects are capturing the intrinsic, idiosyncratic biases or tendencies of individual judges that might systematically affect case outcomes
- **Empirical Strategy:** To obtain unbiased estimators, it's critical to control for judge fixed effects in regression models. This approach isolates exogenous variation in legal decisions from endogenous judge characteristics.

What are Judge Fixed Effects?

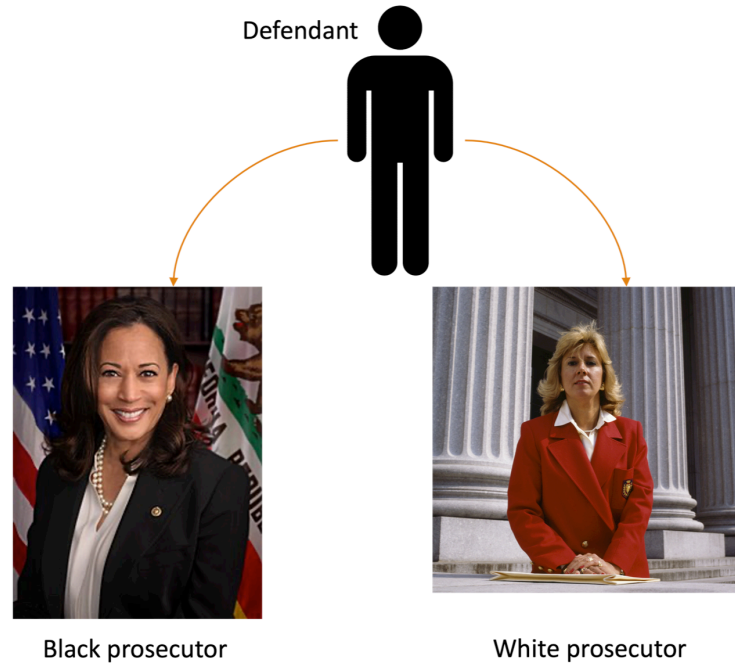
- It's a very common and well-regarded natural experiment that economists and social scientists use to study the casual effects of “treatment” within the criminal justice system
- It exploits the fact that judges/prosecutors are randomly assigned to cases
- Some judges/prosecutors are pickier and some are less picky
- This random assignment to picky/less picky judges leads to quasi-random variation in outcomes

Quasi-Experimental Approaches: Judges



- This quasi-random assignment of cases to judges creates quasi-random variation that can be used to study the causal effect of a conviction (or other judicial decision) on causal outcomes.
- Or random assignment to a judge/prosecutor of a particular race, to study racial bias.

Quasi-Experimental Approaches: Prosecutors



- Or random assignment to a judge/prosecutor of a particular race, to defendants, to study racial bias (Sloan, 2020)

Sloan (2020)



Judge Fixed Effects in Action

- CarlyWill Sloan, the author of this paper, just finished her Ph.D. in economics a few years ago and this was her dissertation research!

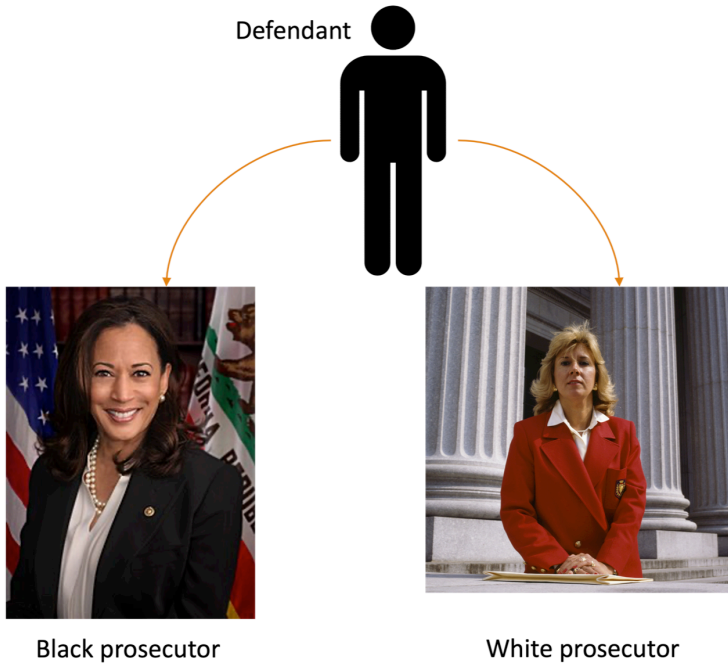
Abstract: There is much interest in understanding the extent to which racial bias drives the large racial disparities in criminal justice outcomes. However, little is known about whether prosecutors exhibit racial bias, despite the widespread belief that prosecutors have more power and discretion than any other actor in the justice system. This paper uses data from New York County to test for racial bias in convictions by being the first to exploit the **conditionally random assignment of prosecutors to cases**. To overcome confounding factors associated with defendant and prosecutor race, I use a difference-in-differences to consider how much more black versus white defendants are convicted by white prosecutors, compared to the same difference for black prosecutors.

Results show strong racial bias for property crimes

- Results indicate strong evidence of racial bias for property crimes but not for other crimes.
- Property crime results show white defendants have similar conviction rates regardless of prosecutor race
- However, while prosecutors of both races convict black defendants at higher rates, the difference in conviction rates across white and black defendants is 5 percentage points (8 percent) higher for white prosecutors than black prosecutors
- Additional results indicate this effect is driven by differences in dismissals and by defendants with no criminal history

Data and Methodology

- Sloan uses case-level data from the New York County District Attorney's Office
- Sloan has data on the race of the defendant, and the race of the prosecutor, and focuses on comparing white and black defendants who are randomly assigned prosecutors who are either white or black
- After controlling for screening date, assignment to prosecutors is as-good-as-random
- Primary outcome = was the defendant found guilty
- The research question is if the being quasi-randomly assigned a white or black prosecutor has a different effect on white vs. black defendants



- Or random assignment to a judge/prosecutor of a particular race, to defendants, to study racial bias (Sloan, 2020)

	Black Defendant	White Defendant
Black Prosecutor	Guilty conviction rate = C	Guilty conviction rate = D
White Prosecutor	Guilty conviction rate = A	Guilty conviction rate = B

- Difference-in-Differences Estimate = $(A - B) - (C - D)$
- Both black and white prosecutors may have higher guilty conviction rates for black defendants, but is this white-black gap in conviction rates higher for white prosecutors? This would suggest racial bias

Results

Table 2: Proportion Guilty by Prosecutor and Defendant Race

	(1) Black Prosecutors	(2) White Prosecutors
<i>Panel A: White Defendants</i>	0.4859	0.5045
<i>Panel B: Black Defendants</i>	0.5940	0.6354

Table 3: Proportion Guilty by Prosecutor and Defendant Race for Property Crimes

	(1) Black Prosecutors	(2) White Prosecutors
<i>Panel A: White Defendants</i>	0.5016	0.5021
<i>Panel B: Black Defendants</i>	0.6059	0.6546

Results

Table 6: Estimates of Opposite-Race Bias in Defendant Guilt by Crime Type

	(1)	(2)	(3)	(4)
Panel D: Property Crimes				
<i>Outcome: Guilty</i>				
Black Defendant*White Prosecutor	0.0481*** (0.0159)	0.0448*** (0.0133)	0.0459*** (0.0134)	0.0500*** (0.0138)
Observations	29815	29815	29815	29815
Outcome Mean	0.615	0.615	0.615	0.615
FDR q-values	0.011	0.004	0.003	0.002
Prosecutor and Defendant Race Indicators	Y	Y	Y	Y
Screening Date FE	Y	Y	Y	Y
Case-Level Controls	-	Y	Y	Y
Prosecutor FE	-	-	Y	-
Interactions	-	-	-	Y

Standard errors in parentheses
* $p < .1$, ** $p < .05$, *** $p < .01$

If black defendants are quasi-randomly matched to white prosecutors, they are between 4.5 and 5 percentage points more likely to be deemed guilty, relative to:

- Black defendants matched with black prosecutors
- White defendants matched with white prosecutors
- White defendants matched with white prosecutors

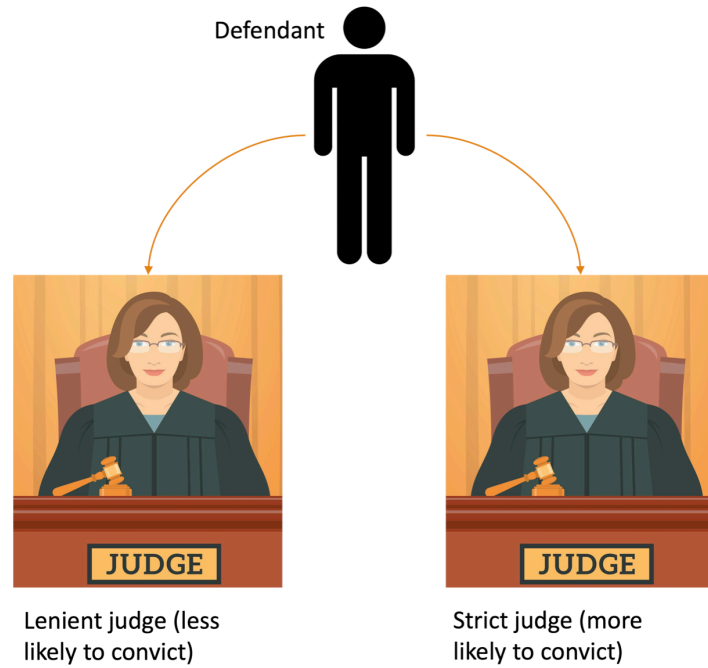
i.e. it's a difference-in-differences

Arnold, Dobbie and Yang (2018)

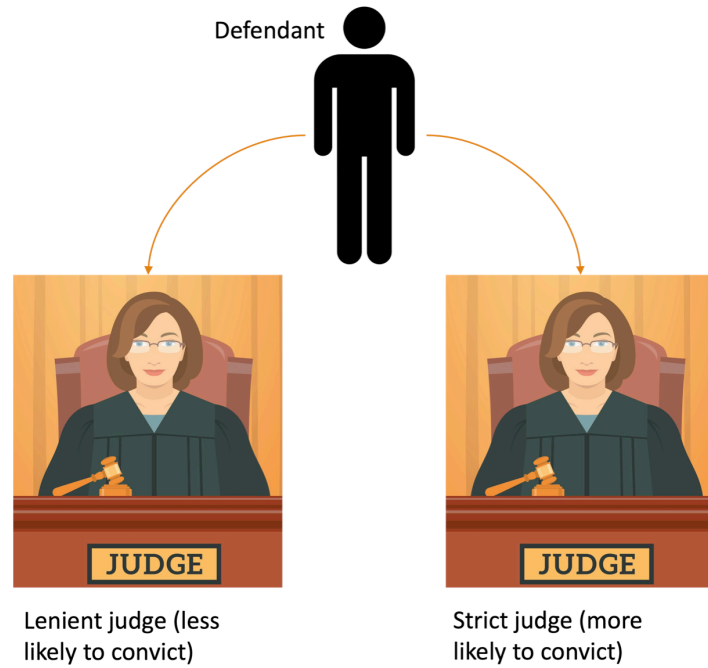


Racial Bias in Bail Decisions

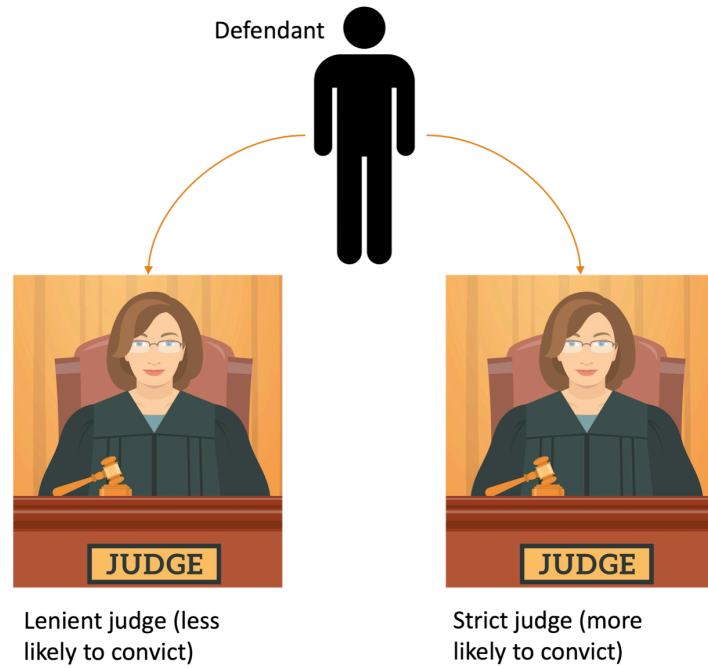
Abstract: This article develops a new test for identifying racial bias in the context of bail decisions—a high-stakes setting with large disparities between white and black defendants. We motivate our analysis using Becker’s model of racial bias. Becker’s model which predict that rates of pretrial misconduct will be identical for marginal white and marginal black defendants if bail judges are racially unbiased. In contrast, marginal white defendants will have higher rates of misconduct than marginal black defendants if bail judges are racially biased, whether that bias is driven by racial animus, inaccurate racial stereotypes, or any other form of bias. To test the model, we use the release tendencies of quasi-randomly assigned bail judges to identify the relevant race-specific misconduct rates. Estimates from Miami and Philadelphia show that bail judges are racially biased against black defendants, with substantially more racial bias among both inexperienced and part-time judges. We find suggestive evidence that this racial bias is driven by bail judges relying on inaccurate stereotypes that exaggerate the relative danger of releasing black defendants.



- Most defendants would get pre-trial release (or not) regardless of the judge, but for a portion of defendants, they are “marginal”
- Defendants are “marginal defendants” if whether they get released or not depends on if they get quasi-randomly allocated to a lenient vs. a strict judge



- The quasi-random assignment to lenient vs. picky judges provides quasi-random variation in pre-trial release
- The idea is to see if those quasi-randomly assigned pre-trial release in this way re-commit crimes while on release



- The idea is to see if those quasi-randomly assigned pre-trial release in this way re-commit crimes while on release
- The key thing for this paper is to see if the re-commit rate differs between white and black defendants. If it does, it could suggest racial bias in how pre-trial release is allocated

Bias in Bail

RACIAL BIAS IN BAIL DECISIONS 1911

TABLE II
FIRST-STAGE RESULTS

	All defendants		White		Black	
	(1)	(2)	(3)	(4)	(5)	(6)
Pretrial 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

- First, does quasi-random assignment to a more lenient judge actually lead to pretrial release? If not, then we can't use this quasi-random assignment to them test the effect of quasi-randomly assigned pretrial release on criminal behavior while on release
- Thus, there needs to be a first stage that shows a relationship. We need to see a relationship between judge leniency and pretrial release

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- All instrumental variables papers, of which this is one, require a strong first stage, otherwise there is no way to do the study
- E.g., Levitt (1997) uses electoral cycles to measure the effect of police on crime and had to show that police hiring did in fact follow electoral cycles to some extent (the first stage)
- We see a strong first stage relationship here, which means we can then move to see how quasi-random assignment of pretrial release through lenient judges affects crimes committed while released

Bias in Bail

TABLE IV
PRETRIAL RELEASE AND CRIMINAL OUTCOMES

	IV results			MTE results		
	White (1)	Black (2)	D^{IV} (3)	White (4)	Black (5)	D^{MTE} (6)
Panel A: Rearrest for all crimes						
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) –
Panel B: Rearrest by crime type						
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	–

- IV = Instrumental variable. We use quasi-randomly assigned “stricter” judges as a way to get quasi-random variation in pre-trial release
- Marginal defendant = those on the margins between getting pretrial release or not
- The idea is the random assignment of a pickier or less picky judge will create quasi-random variation in being released or not for this marginal group

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Observations	106,846	149,407	–	106,846	149,407	–

- White marginal defendants are much more likely to engage in pretrial misconduct compared to marginal black defendants
- For marginal black defendants, being quasi-randomly “assigned” pretrial release (via a less strict judge) or not (via a more strict judge) has no clear effect on pretrial misconduct (estimates are small and statistically insignificant)
- This not the case for marginal white defendants: they are significantly more likely to engage in pretrial misconduct

Bias in Bail

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Observations	106,846	149,407	–	106,846	149,407	–

- What does it mean that pretrial release has no effect on pretrial misconduct for black defendants, but significantly increases pretrial misconduct for white defendants?
- Judges are making inefficient (racist) decisions. They would make fewer mistakes (i.e. giving pretrial release to those less likely to commit pretrial misconduct) if they gave much fewer marginal or near-marginal white defendants release, and gave many more marginal and near-marginal black defendants release

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- i.e. judges over-release whites and under-release blacks
- This clearly implies racial bias: judges assume that marginal black defendants are more likely to commit pretrial misconduct, when that is not the case

Eren and Mocan (2018)



Other “natural experiments”

Abstract: Employing the universe of juvenile court decisions in Louisiana between 1996 and 2012, we analyze the effects of emotional shocks associated with unexpected outcomes of football games played by ~~a prominent college team in the state~~ **LSU**. We find that unexpected losses increase sentence lengths assigned by judges during the week following the game. The effects of these emotional shocks are asymmetrically borne by black defendants. The impact of upset losses on sentence lengths is larger for defendants if their cases are handled by judges who received their bachelor's degrees from ~~the university with which the football team is affiliated~~ **LSU**. These results provide evidence for the impact of emotions in one domain on decisions in a completely unrelated domain among a uniformly highly educated group of individuals (judges) who make decisions after deliberation that involve high stakes (sentence lengths). They also point to the existence of a subtle and previously unnoticed capricious application of sentencing.

LSU as a Natural Experiment

- In this paper, the authors use LSU winning or loses as quasi-random variation of negative emotions, to see how this differentially affects black versus white juvenile defendants.
- The comparison is a difference-in-difference of sorts:
- Upset loss (negative emotional shock) vs. not an upset loss (no shock)
- Black juvenile defendant vs. white juvenile defendant

LSU game outcome	Defendant Race	
	Black	White
Not an upset loss (no shock)	Average sentence length = C	Average sentence length = D
Upset loss (negative shock)	Average sentence length = A	Average sentence length = B

- Difference-in-Differences Estimate = $(A - B) - (C - D)$
- Black juvenile defendants may face a higher sentence length anyways (so, $C > D$), but if this increases after an upset loss, then it suggests that judges react to negative emotional shocks in racist ways

Results

TABLE 7—THE EFFECT OF EMOTIONAL SHOCKS FROM LSU FOOTBALL GAMES ON DISPOSITION LENGTH IMPOSED BY JUDGES: BY TYPE OF GAME, TYPE OF CRIME, AND THE RACE OF THE JUVENILE

	Game type		Offense type		Juvenile race	
	LSU ranks in top 10 (1)	LSU ranks below top 10 (2)	Felony (3)	Non-felony (4)	Black (5)	White (6)
Upset loss	49.537 (19.450)	24.564 (23.197)	32.854 (21.756)	28.327 (17.672)	42.902 (14.894)	4.815 (21.963)
Close loss	12.763 (34.201)	3.276 (28.978)	15.617 (38.650)	8.622 (22.456)	-0.017 (23.320)	12.610 (34.936)
Upset win	37.564 (62.036)	-23.079 (24.703)	-32.895 (40.784)	4.525 (22.278)	-10.166 (28.592)	-2.588 (31.103)
Predicted win	-6.020 (18.022)	19.200 (20.118)	28.050 (26.907)	0.620 (15.873)	14.915 (16.680)	3.735 (26.023)
Predicted close	-3.640 (22.158)	1.918 (22.134)	12.243 (31.515)	-9.635 (17.507)	-2.607 (20.236)	6.339 (28.700)
Predicted loss	-29.094 (27.550)	32.942 (21.949)	25.749 (33.548)	11.321 (19.654)	15.108 (23.645)	28.234 (28.835)
Average disposition length	476.29	539.26	634.61	426.53	521.46	499.64
Sample Size	4,484	5,756	3,876	5,358	5,781	3,272
<i>Controls</i>						
Season, week, and days of week	Yes	Yes	Yes	Yes	Yes	Yes
Judge	No	No	No	No	No	No
Juvenile	Yes	Yes	Yes	Yes	Yes	Yes
Game	Yes	Yes	Yes	Yes	Yes	Yes
Offense fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Judge fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors, which are clustered at the judge level, are reported in parentheses. Columns 1 and 2 include all bye weeks irrespective of ranking during the bye weeks. Offense classifications (felony and non-felony) are based on the Louisiana Office of Juvenile Justice categorization. See notes to Table 4 and the text for data and control variable details.

- Disposition length increases by 42.9 days for black defendants, and only 4.8 days for white defendants after the negative shock of an upset game
- No statistically significant effects for any other types of game outcomes other than “upset loss”