

The Heavy Costs of High Bail

Evidence From Bail Judge Randomization

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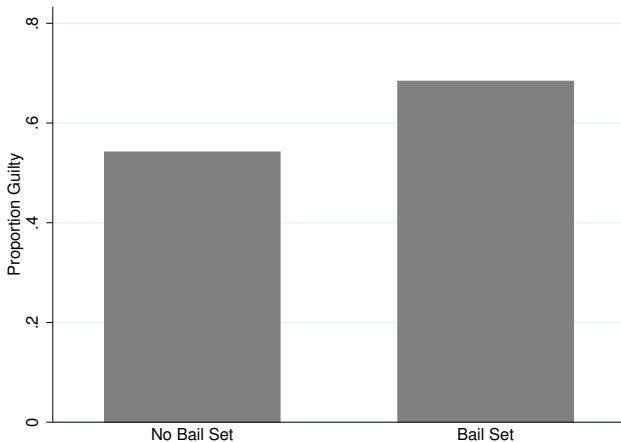
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Motivation: Presence of Bail Predicts Criminal Guilt

Figure: Guilt by Bail Status: Possession of Marijuana



Basic Definitions

- ▶ “Bail” is a process of releasing a criminal defendant with conditions. If the conditions are not met, then the defendant will remain in custody.
- ▶ “Money bail” is the shorthand term for a secured financial condition of release.
- ▶ Persons who cannot afford their money bail are detained before trial.
- ▶ Defendants can deposit a 10% collateral with a bail bondsman to cover bail, kept as interest.

Legal Motivation: Liberty Aspects of Bail

- ▶ Liberty is a fundamental right guaranteed by the 5th and 14th Amendments to the Constitution.
- ▶ Pretrial detention must be “narrowly tailored” to “compelling interests” (U.S. v. Salerno).
 - ▶ flight risk
 - ▶ public safety
- ▶ “Bail set at a figure higher than an amount reasonably calculated to fulfill [its] purpose is excessive” under the 8th Amendment (Stack v. Boyle).
- ▶ Defendants are presumed innocent until proven guilty.

Legal Motivation: Equal Protection Aspects of Bail

- ▶ Bail also raises questions of 14th Amendment equal protection:
 - ▶ Incarceration for reasons of pure inability to pay (Tate v. Short)
 - ▶ Differential access to justice depending on wealth (Griffin v. Illinois)
 - ▶ Equal treatment on bail assessment for other protected classes, i.e. gender, age, race, etc.
 - ▶ Caveat: Disparate impact on protected classes not enough; discriminatory purpose is necessary.

We Obtain Causal Estimates of the Impact of Bail on Judicial Outcomes

- ▶ We establish variation in treatment intensity of bail due to judge factors:
 - ▶ Bail judges vary in severity of bail assessment
 - ▶ Cases are randomly assigned to bail judges
- ▶ We use this judicial variation to causally establish the role of bail amounts on criminal defendants:
 - ▶ An assessment of monetary bail causally probability of guilty plea by 6%
 - ▶ Raises likelihood of future crime by 4%
 - ▶ Suggestive results on outcomes of racial bias in bail setting, failure to appear

The Bail Assessment Process in Pennsylvania

- ▶ Philadelphia:
 - ▶ Centralized municipal court where defendants face bail hearing from an arraignment court magistrate, who divide cases in a manner which appears effectively random.
 - ▶ Bail arraignment typically within 6–24 hours of arrest. After bail assessment, defendants choose plea.
- ▶ Rest of State:
 - ▶ Magistrate judges elected for 6-year terms in districts, handle majority of cases committed in jurisdiction.
 - ▶ 20–30% of cases in district overseen by other judges, typically due to weekend, night, vacation, other episodes of judicial leaves.
- ▶ Our main focus is on Philadelphia cases from 2010–2015, but for robustness we separately analyze Pittsburgh.

Summary Statistics

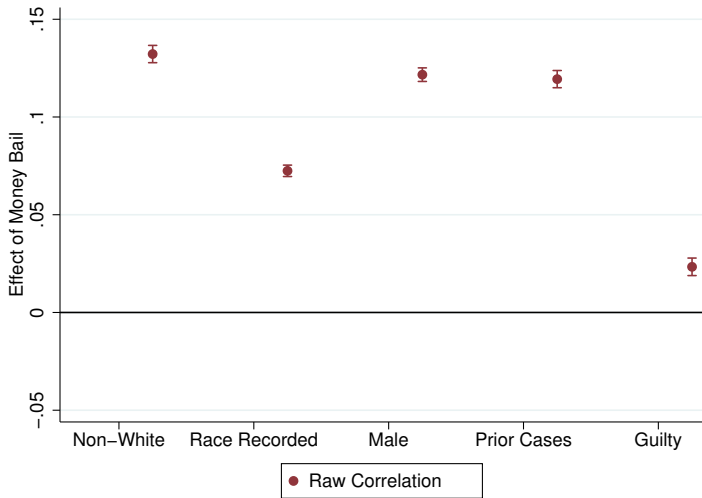
	Philadelphia		Pittsburgh	
	Mean	SD	Mean	SD
Age	33.5	11.6	33.4	11.7
Non-White	0.56	0.50	0.42	0.49
Race Missing	0.12	0.33	0.027	0.16
Male	0.81	0.39	0.77	0.42
Prior Cases	0.42	0.49	0.33	0.47
Total Offenses	3.42	2.95	4.68	3.48
Case Guilty	0.50	0.50	0.77	0.42
Total Bail	24,083	74,891	12,964	28,697
Money Bail	0.62	0.48	0.53	0.50
Posted Bail	0.60	0.49	0.46	0.50
Bench Warrant	0.019	0.14	0.15	0.35
Commit Future Crime	0.43	0.49	0.33	0.47
Sample Size	201k		38k	

OLS Estimates Consistent with Role for Bail in Determining Guilty Outcomes...

Table: Case Guilty against Money Bail

	(1)	(2)	(3)	(4)
Any Money Bail	0.014* (0.008)	0.092*** (0.007)	0.043*** (0.006)	
Log(Money Bail)				0.004*** (0.001)
Proportion Guilty	0.498	0.498	0.498	0.498
N	200643	200643	200617	200617
Case Controls	No	No	Yes	Yes
Offense FEs	No	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes	Yes

... But Bail Assessments in General Biased



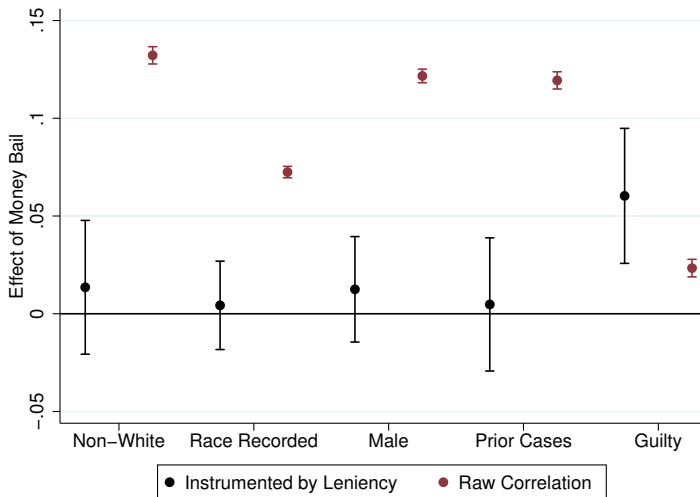
Bias in Bail Setting Prevents Causal Interpretation

- ▶ If bail were randomly assigned to defendants could estimate:

$$Guilt_{it} = \alpha + \beta Bail_{it} + \varepsilon_{it}$$

- ▶ However, in general $E[\varepsilon_{it}|Bail_{it}] \neq 0$
- ▶ Attempt to recover β using judge severity as an instrument for bail setting
- ▶ Exploit randomization of defendants to judges, and judge differences in the propensity to assign bail and intensity of assignment
 - ▶ Following Kling (2006), Doyle (2007), Dobbie and Song (2015), Mueller-Smith (2016), and many others

Variation from Judicial Assessment is Random



Instrument for Judge Severity Solves the Identification Challenge

- ▶ Conceptually, to isolate the impact of judge severity, for individual i in court c with judge j :

$$Bail_{icjt} = \alpha + \gamma_c + \delta_j + v_{it}$$

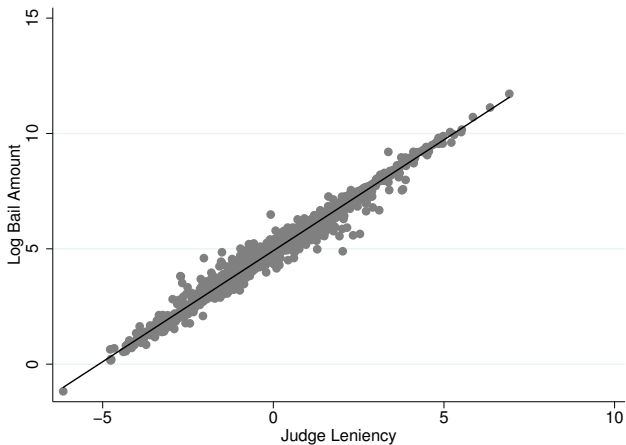
- ▶ Where δ_j are judge fixed effects
- ▶ Biased in finite samples, so we follow the literature and estimate a leave-out mean estimate:

$$Z_{icjt} = \frac{1}{n_{cjt} - 1} \left(\sum_{k=1}^{n_{cjt}} (Bail_k) - Bail_i \right) - \frac{1}{n_{ct} - 1} \left(\sum_{k=1}^{n_{ct}} (Bail_k) - Bail_i \right)$$

- ▶ Our preferred measure computes judge deviations from the office-offense average
 - ▶ Account for possible non-random assignment by offense

Judge Level Instrument Predicts Individual Bail

Figure: Judicial Severity vs. Log Bail Amount



Over Time

Over Office

Randomization Tests – Leniency on Observables

	Means	Pairwise	Joint Regressions	
			No Controls	Controls
Non-White	0.56	0.00035 (0.000)	0.00037 (0.001)	0.00020 (0.001)
Race Missing	0.12	-0.00026 (0.001)	-0.000015 (0.001)	-0.00014 (0.001)
Male	0.81	0.00053 (0.001)	0.00043 (0.001)	-0.000066 (0.001)
Age	33.5	-0.0000010 (0.000)	-0.00000041 (0.000)	0.000016 (0.000)
Out of State	0.031	0.0018 (0.001)	0.0019 (0.001)	0.0026 (0.002)
Prior Cases	0.42	0.00013 (0.000)	0.00013 (0.000)	0.00037 (0.001)
N. of cases			200617	200617
F-Statistic			0.54	0.34
Offense FEs		No	Yes	Yes
Month FEs		No	No	Yes

We use a Standard Instrumental Variables Framework

- ▶ Instrument for $Bail_{ictjo}$ with Z_{ictjo} our measure of judge severity:

$$Guilt_{ictjo} = \alpha + \beta Bail_{ictjo} + X'_{ictjo} \delta + \eta_{ctjo} + \varepsilon_{ictjo}$$

$$Bail_{ictjo} = \alpha + \gamma Z_{ictjo} + X'_{ictjo} \zeta + \rho_{ctjo} + v_{ictjo}$$

- ▶ Identifying assumption (from judge randomization):

$$\text{corr}(Z_{ictjo}, \varepsilon_{ictjo}) = 0$$

IV Estimates Confirm Causal Role for Bail on Guilt Outcome: Extensive Margin

	First Stage	Reduced Form	IV
	Any Money Bail	Case Guilty	Case Guilty
Strictness	0.587*** (0.028)	0.036** (0.017)	
Any Money Bail			0.061** (0.028)
Non-White	0.014*** (0.003)	-0.026*** (0.003)	-0.027*** (0.003)
Male	0.077*** (0.006)	0.026*** (0.003)	0.021*** (0.003)
Mean of Dep. Var.	0.623	0.498	0.499
N	200617	200617	200615
Case Controls	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes

Effects Persist with Continuous Measure

	First Stage	Reduced Form	IV
	Log(Money Bail)	Case Guilty	Case Guilty
Strictness	0.561*** (0.027)	0.004* (0.002)	
Log(Money Bail)			0.006** (0.003)
Non-White	0.153*** (0.024)	-0.026*** (0.003)	-0.027*** (0.003)
Male	0.829*** (0.058)	0.026*** (0.003)	0.021*** (0.004)
Mean of Dep. Var.	5.695	0.498	0.499
N	200617	200617	200615
Case Controls	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes

Effects by Bail Posting Status

	Guilty		Not Guilty	
	Bail Not Posted	Bail Posted	Bail Not Posted	Bail Posted
Any Money Bail	0.161*** (0.059)	-0.098* (0.060)	0.014 (0.050)	-0.077 (0.053)
Non-White	-0.006** (0.002)	-0.021*** (0.003)	0.029*** (0.003)	-0.003 (0.004)
Male	0.029*** (0.005)	-0.008 (0.005)	0.028*** (0.006)	-0.049*** (0.006)
Mean of Dep. Var.	0.226	0.272	0.178	0.323
N	200615	200615	200615	200615
Case Controls	Yes	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes	Yes

Bail Assessment Also Increases Recidivism

	First Stage	Reduced Form	IV
	Any Money Bail	Recidivism	Recidivism
Strictness	0.588*** (0.028)	0.025** (0.012)	
Any Money Bail			0.043** (0.020)
Non-White	0.014*** (0.003)	-0.003 (0.004)	-0.004 (0.004)
Male	0.077*** (0.006)	0.036*** (0.003)	0.033*** (0.004)
Mean of Dep. Var.	0.623	0.498	0.499
N	200617	200617	200615
Case Controls	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes

Cross-Sectional Cuts

	Felony	Public Defender	Male	Non-White
Any Money Bail	0.081 (0.061)	0.054* (0.029)	0.060* (0.032)	0.083** (0.034)
Non-White	-0.045*** (0.003)	-0.026*** (0.003)	-0.026*** (0.003)	
Male	0.020*** (0.006)	0.024*** (0.004)		0.024*** (0.004)
Proportion Guilty	0.541	0.492	0.509	0.515
N	94658	126757	162691	112280
Case Controls	Yes	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes	Yes

Sources of Judicial Discretion: Racial Bias

	Judge Level	Judge \times Year	Judge \times Year \times Offense
Judicial Racial Bias Indicator	-0.012 (0.009)	-0.011 (0.009)	-0.002 (0.006)
Judicial Racial Bias Indicator \times Non-White	0.022*** (0.006)	0.023*** (0.006)	0.014** (0.006)
F-Test			
Proportion With Money bail			
N	203159	203159	203159
Case Controls	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes

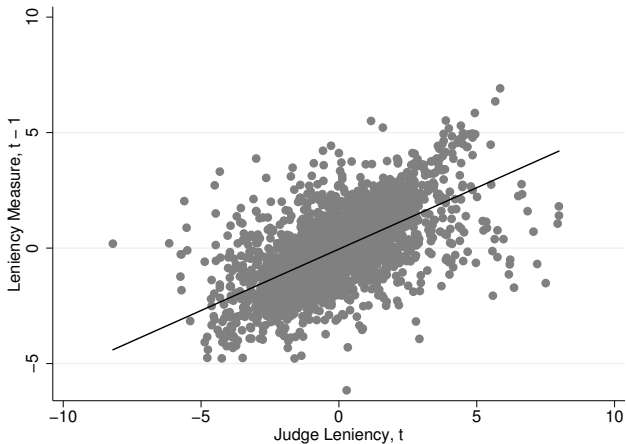
Our Results Raise Questions About the Effectiveness of Bail and Pretrial Detentions

- ▶ Substantial judicial variation sustained over time in setting bail suggests conditions are not “narrowly tailored” to flight risk and public safety
- ▶ We exploit judicial variation and randomized assignment to assess novel causal implications of money bail:
 - ▶ Money bail results in a ~ 6 percentage point higher chance of conviction, overturning presumption of innocence
 - ▶ 4 percentage point higher chance of committing future crime
 - ▶ Money bail is disproportionately levied on non-white defendants, suggestive of discriminatory impact
- ▶ Future work will examine other outcomes of sentencing: mortality, bankruptcy, employment, homelessness. Sources of judicial discretion as well: partisan identity of appointments, etc.

Appendix

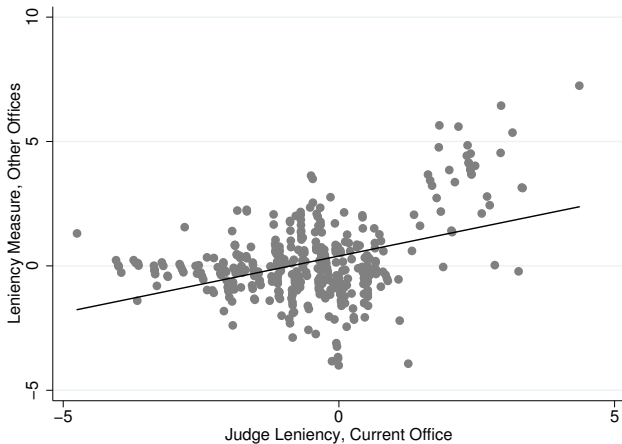
Judges Consistent Over Time

Figure: Judicial Severity $t-1$ v. Severity in t



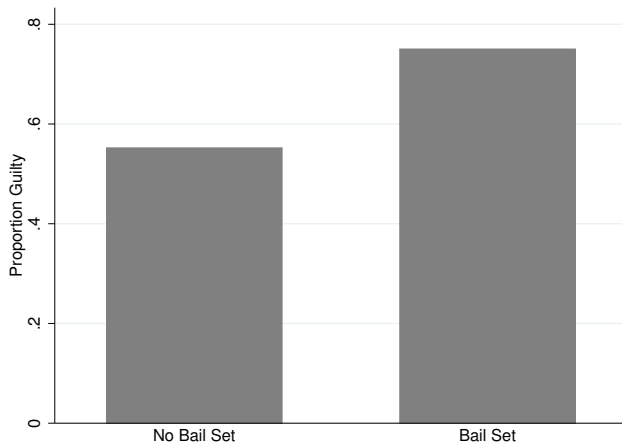
Judges Consistent Over Offices

Figure: Judicial Severity in one Office v. Another



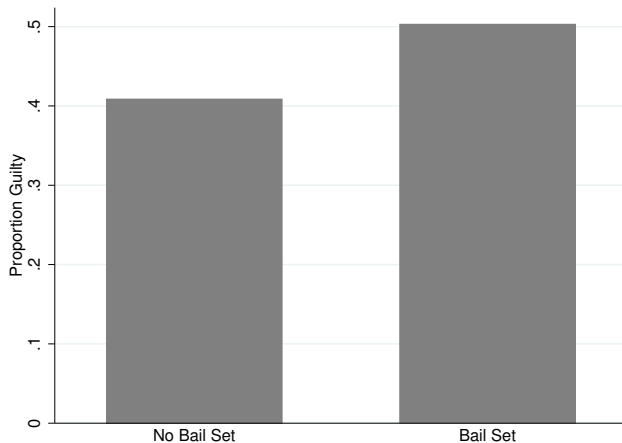
Motivation

Figure: Guilt by Bail Status: Retail Theft



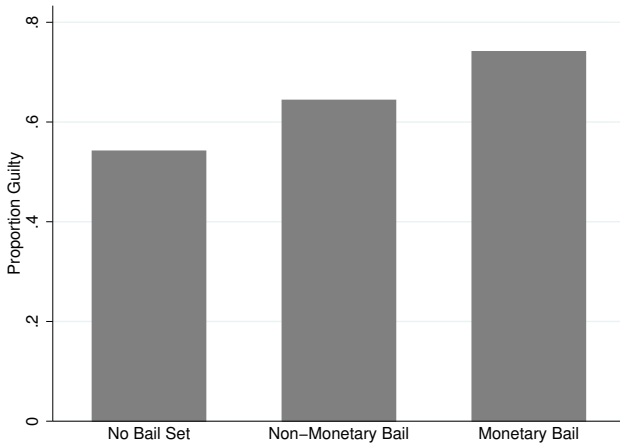
Motivation

Figure: Guilt by Bail Status: DUI



Motivation

Figure: Guilt by Bail Status: Possession of Marijuana



Randomization Tests – Leniency on Observables

	Means	Pairwise	Joint Regressions	
			No Controls	Controls
Non-White	0.56	0.0020 (0.004)	0.0023 (0.004)	0.00059 (0.007)
Race Missing	0.12	-0.00024 (0.006)	0.0014 (0.007)	0.0016 (0.011)
Male	0.81	0.0064 (0.005)	0.0059 (0.005)	0.0014 (0.008)
Age	33.5	-0.000075 (0.000)	-0.000071 (0.000)	0.000098 (0.000)
Out of State	0.031	0.0076 (0.011)	0.0076 (0.012)	0.013 (0.017)
Prior Cases	0.42	-0.00076 (0.004)	-0.00092 (0.004)	0.00085 (0.007)
N. of cases			200617	200617
F-Statistic			0.39	0.14
Offense FEs		No	Yes	Yes
Month FEs		No	No	Yes

Randomization Tests – Pittsburgh

	Means	Pairwise	Joint Regressions	
			No Controls	Controls
Non-White	0.42	0.019*** (0.002)	0.019*** (0.002)	0.015*** (0.004)
Race Missing	0.027	0.0050 (0.007)	0.015** (0.007)	-0.013 (0.011)
Male	0.77	0.014*** (0.003)	0.013*** (0.003)	0.0093*** (0.003)
Age	33.4	-0.00011 (0.000)	-0.000042 (0.000)	0.000053 (0.000)
Out of State	0.029	0.015** (0.007)	0.016** (0.007)	0.014* (0.009)
Prior Cases	0.33	-0.0063*** (0.002)	-0.0060** (0.002)	0.0036 (0.003)
N. of cases			38149	38149
F-Statistic			20.0	4.74
Offense FEs		No	Yes	Yes
Month FEs		No	No	Yes

Randomization Test

	Money Bail	Judge Leniency
Case Guilty	0.023*** (0.002)	0.038*** (0.011)
Non-White	0.132*** (0.002)	0.008 (0.011)
Race Missing	-0.072*** (0.001)	-0.003 (0.007)
Male	0.122*** (0.002)	0.008 (0.009)
Age	-2.454*** (0.053)	-0.013 (0.254)
Out of State	-0.013*** (0.001)	0.005 (0.004)
Prior Cases	0.119*** (0.002)	0.003 (0.011)

OLS Estimates Consistent with Role for Bail in Determining Guilty Outcomes: Pittsburgh

	(1)	(2)	(3)	(4)
Any Money Bail	0.065*** (0.008)	0.065*** (0.007)	0.039*** (0.006)	
Log(Money Bail)				0.004*** (0.001)
Proportion Guilty	0.774	0.774	0.774	0.774
N	34963	34963	34908	34908
Case Controls	No	No	Yes	Yes
Offense FEs	No	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes	Yes

IV Estimates Confirm Causal Role for Bail on Guilt Outcome: Extensive Margin

	First Stage	Reduced Form	IV
	Any Money Bail	Case Guilty	Case Guilty
Strictness	0.391*** (0.026)	0.025* (0.013)	
Any Money Bail			0.064** (0.031)
Non-White	0.107*** (0.006)	-0.004 (0.006)	-0.011 (0.007)
Male	0.084*** (0.006)	0.053*** (0.006)	0.047*** (0.006)
Mean of Dep. Var.	0.495	0.777	0.766
N	38149	38149	38141
Case Controls	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes

Effects Persist with Continuous Measure

	First Stage	Reduced Form	IV
	Log(Money Bail)	Case Guilty	Case Guilty
Strictness	0.393*** (0.026)	0.003* (0.001)	
Log(Money Bail)			0.007* (0.003)
Non-White	1.067*** (0.054)	-0.004 (0.006)	-0.011 (0.007)
Male	0.884*** (0.056)	0.053*** (0.006)	0.047*** (0.006)
Mean of Dep. Var.	4.648	0.777	0.766
N	38149	38149	38141
Case Controls	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes

Intensive Margin: Philadelphia

	First Stage	Reduced Form	IV
	Log(Money Bail Bail>0)	Case Guilty	Case Guilty
Strictness	0.489*** (0.035)	-0.006 (0.008)	
Log(Money Bail Bail > 0)			-0.013 (0.016)
Non-White	0.047*** (0.007)	-0.037*** (0.002)	-0.036*** (0.002)
Male	0.344*** (0.021)	0.019*** (0.004)	0.023*** (0.006)
Mean of Dep. Var.	9.143	0.506	0.499
N	124352	124352	124338
Case Controls	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes

Back

Intensive Margin: Pittsburgh

	First Stage	Reduced Form	IV
	Log(Money Bail Bail>0)	Case Guilty	Case Guilty
Strictness	0.446*** (0.033)	0.010* (0.005)	
Log(Money Bail Bail > 0)			0.022* (0.011)
Non-White	0.133*** (0.018)	-0.036*** (0.006)	-0.039*** (0.006)
Male	0.303*** (0.021)	0.048*** (0.008)	0.041*** (0.009)
Mean of Dep. Var.	9.412	0.818	0.766
N	17370	17370	17366
Case Controls	Yes	Yes	Yes
Offense FEs	Yes	Yes	Yes
Month FEs	Yes	Yes	Yes

Back

Failure to Appear (FTA)

	Calendar FTA	Bench Warrant FTA
Any Money Bail	0.003 (0.003)	-0.010 (0.016)
Non-White	-0.000 (0.000)	0.001* (0.001)
Male	-0.000 (0.000)	-0.004*** (0.001)
Mean of Dep. Var.	0.00144	0.0192
N	200615	200615
Case Controls	Yes	Yes
Offense FEs	Yes	Yes
Month FEs	Yes	Yes