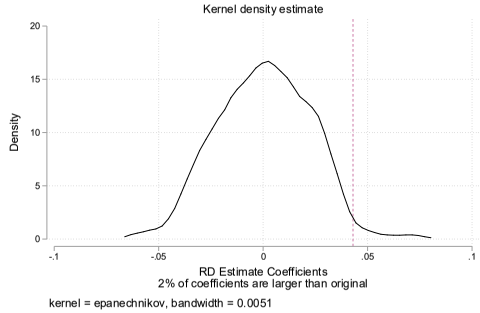
The Effect of Risk Assessment Scores on Judicial Behavior and Defendant Outcomes

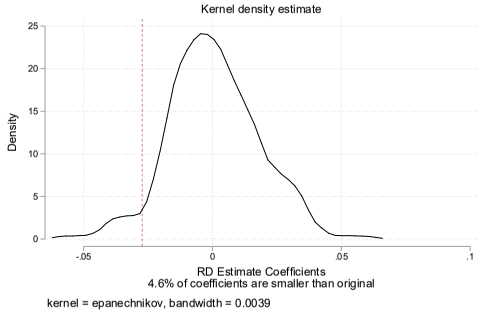
CarlyWill Sloan, George Naufal, and Heather Caspers

Online Appendix

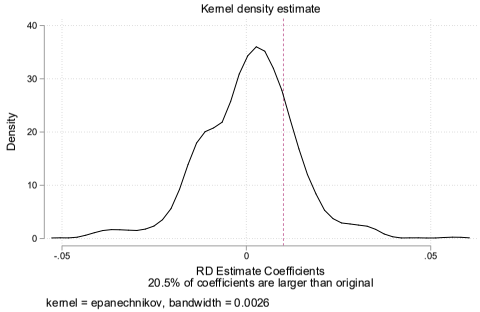
Figure A.1: Reassigning Treatment Date



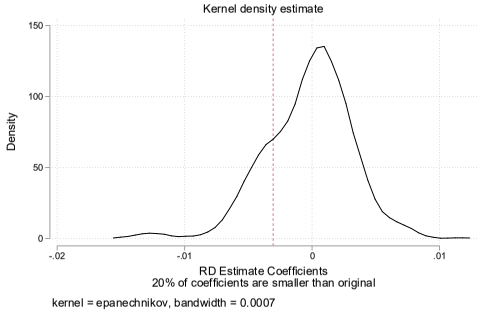
(a) Outcome: Release on Non-financial Bond



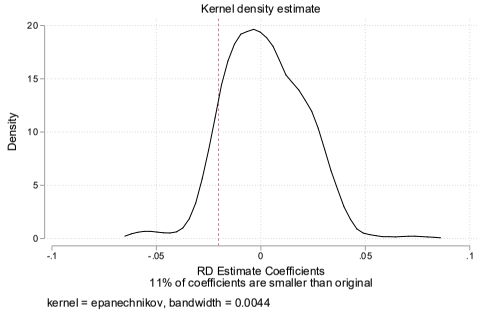
(b) Outcome: Pretrial Detention



(c) Outcome: Non-violent Pretrial Crime



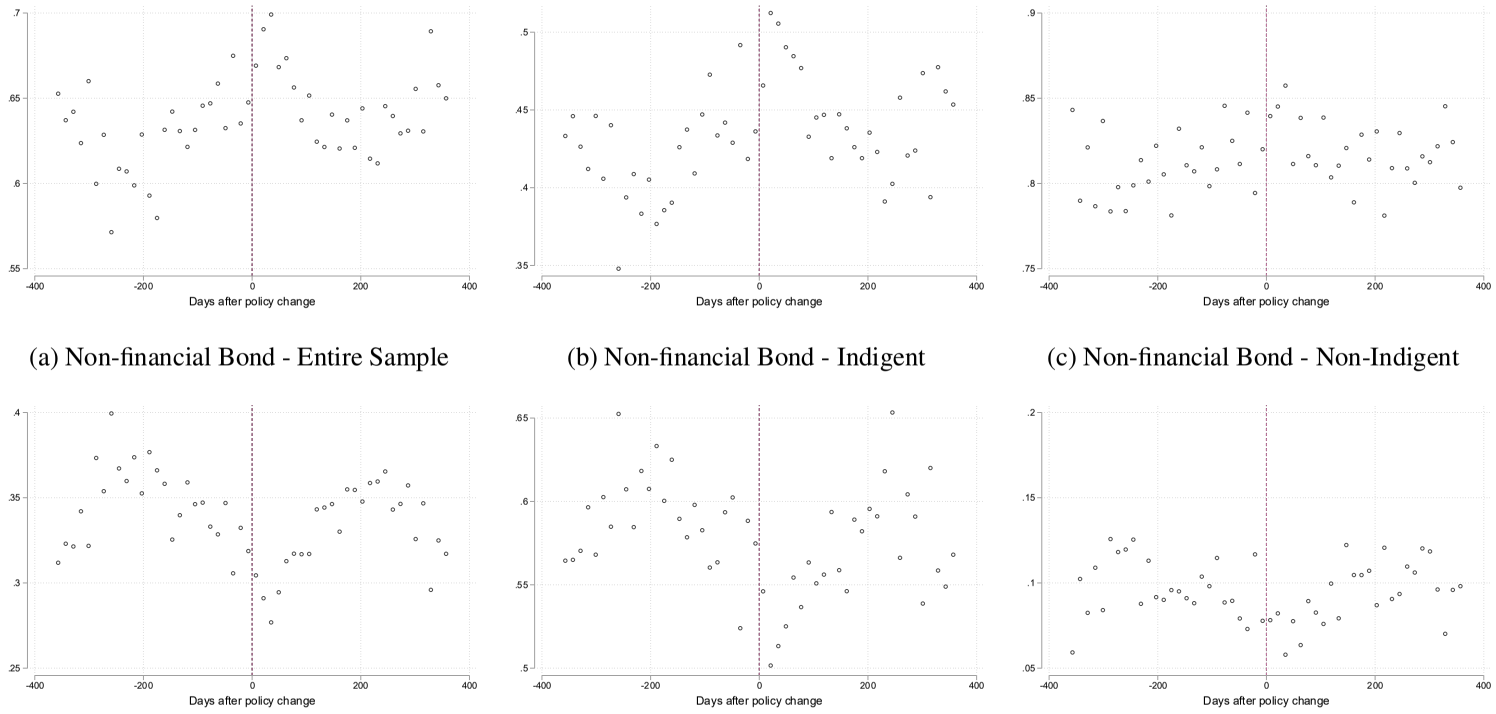
(d) Outcome: Violent Pretrial Crime



(e) Outcome: Conviction

Notes: This figure plots the distribution of 910 regression discontinuity coefficients from equation (1) using pre-treatment data. Dashed lines are treatment effects from Table 2. For the probability of release on non-financial bond, our estimate reported in Table 2 is greater than 98 percent of all placebo estimates. For pretrial detention, our estimate reported in Table 2 is less than 95 percent of all placebo estimates

Figure A.2: Indigent Regression Discontinuity Results for Non-financial Bond and Pretrial Detention

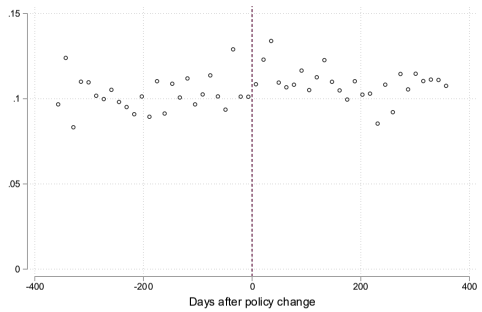


(a) Non-financial Bond - Entire Sample (b) Non-financial Bond - Indigent (c) Non-financial Bond - Non-Indigent

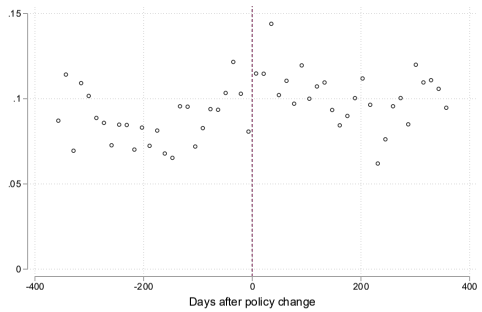
(d) Pretrial Detention - Entire Sample (e) Pretrial Detention - Indigent (f) Pretrial Detention - Non-Indigent

Notes: This figure shows the regression discontinuity estimate of the effect of implementing a risk assessment score policy on the non-financial bond or pretrial detention by plotting the mean non-financial bond or pretrial detention in two week bins. A bandwidth of 360 days is shown.

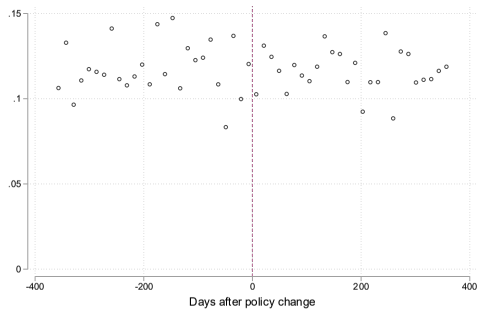
Figure A.3: Indigent Regression Discontinuity Results for Pretrial Crime



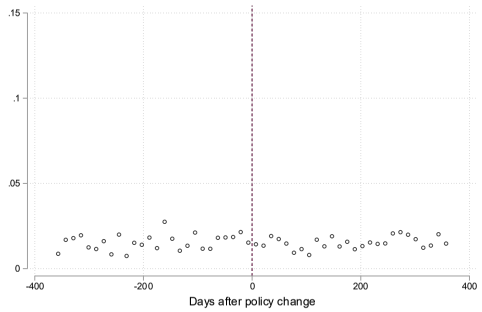
(a) Non-violent Pretrial Crime - Entire Sample



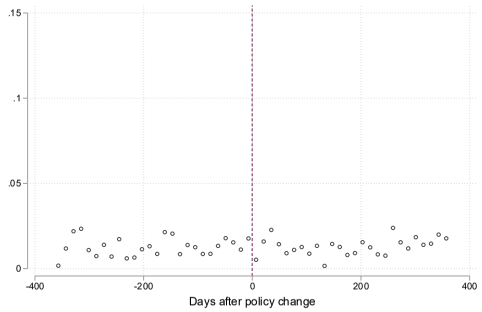
(b) Non-violent Pretrial Crime - Indigent



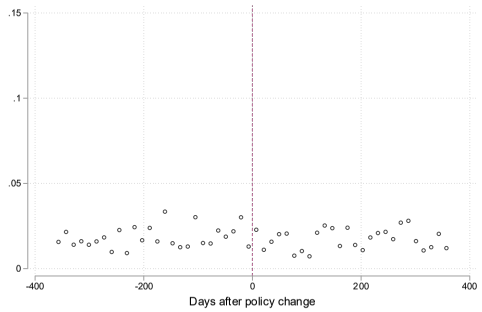
(c) Non-violent Pretrial Crime - Non-Indigent



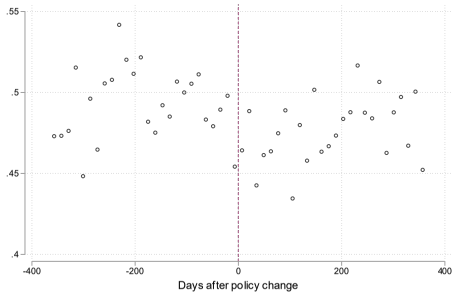
(d) Violent Pretrial Crime - Entire Sample



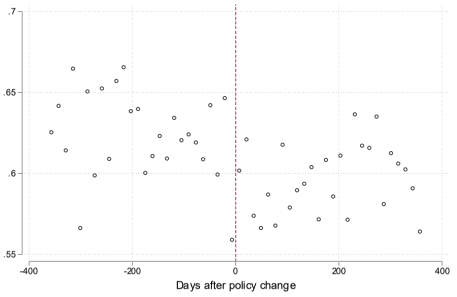
(e) Violent Pretrial Crime - Indigent



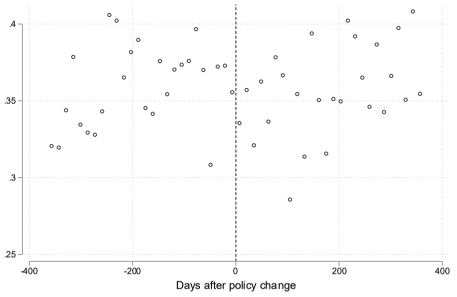
(f) Violent Pretrial Crime - Non-Indigent



(g) Conviction- Entire Sample



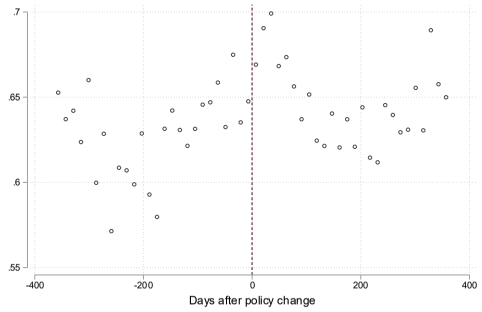
(h) Conviction - Indigent



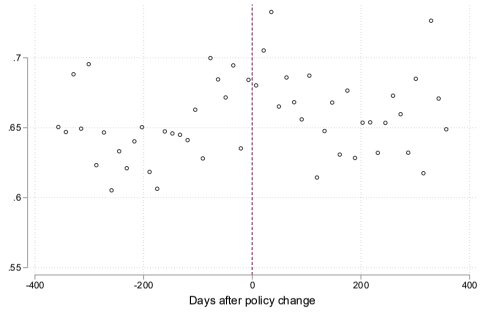
(i) Conviction - Non-Indigent

Notes: This figure shows the regression discontinuity estimate of the effect of implementing a risk assessment score policy on pretrial crime by plotting the mean non-financial bond or pretrial detention in two week bins. A bandwidth of 360 days is shown.

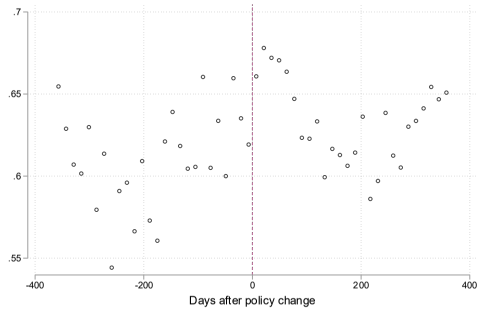
Figure A.4: Regression Discontinuity Results for Non-financial Bond and Pretrial Detention by Race



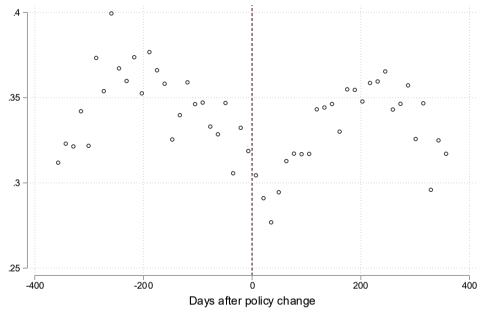
(a) Non-financial Bond - Entire Sample



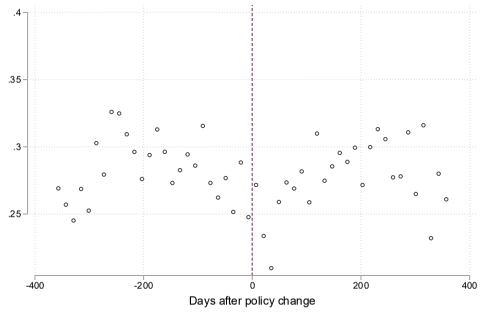
(b) Non-financial Bond - White



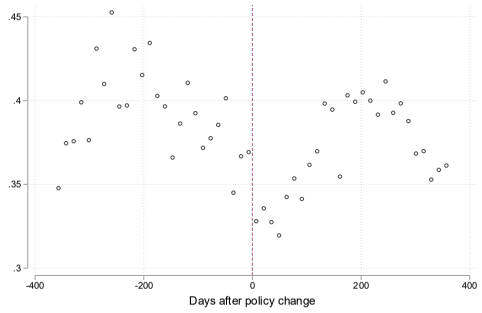
(c) Non-financial Bond - Minority



(d) Pretrial Detention- Entire Sample



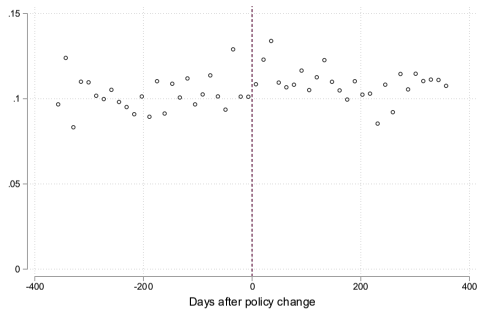
(e) Pretrial Detention- White



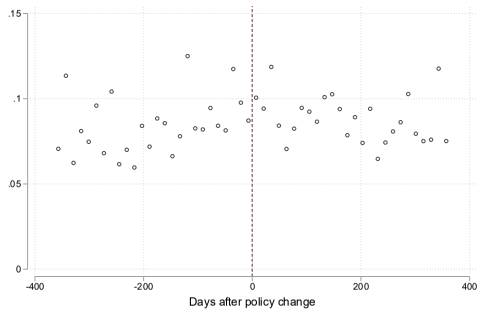
(f) Pretrial Detention- Minority

Notes: This figure shows the regression discontinuity estimate of the effect of implementing a risk assessment score policy on the non-financial bond or pretrial detention by plotting the mean non-financial bond or pretrial detention in two week bins. A bandwidth of 360 days is shown. White defendants are only white. Minority defendants are Hispanic or non-white.

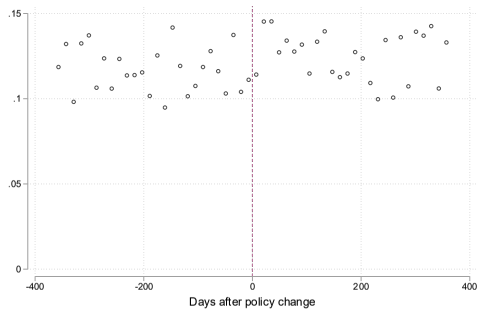
Figure A.5: Regression Discontinuity Results for Pretrial Crime by Race



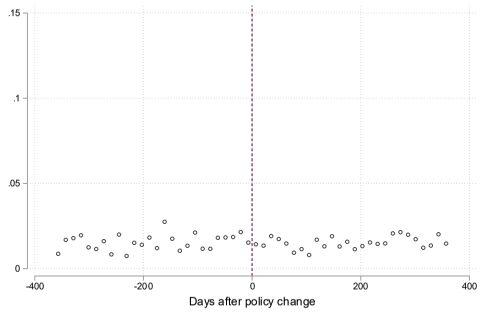
(a) Non-violent Pretrial Crime - Entire Sample



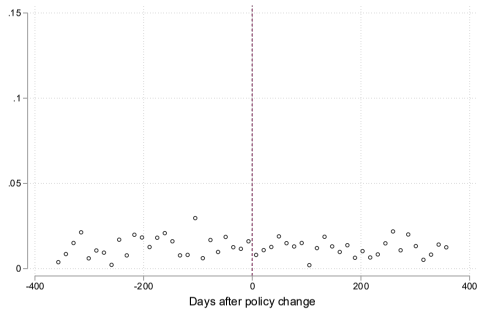
(b) Non-violent Pretrial Crime - White



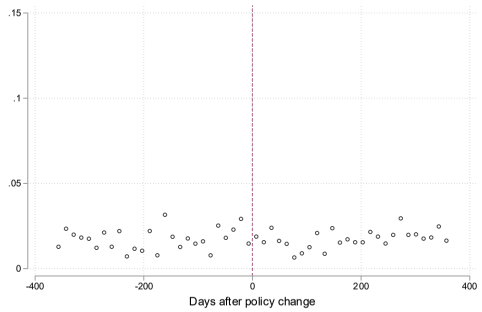
(c) Non-violent Pretrial Crime - Minority



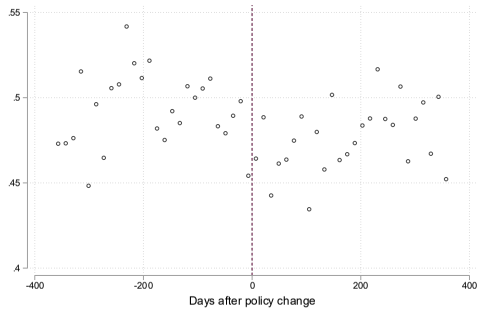
(d) Violent Pretrial Crime - Entire Sample



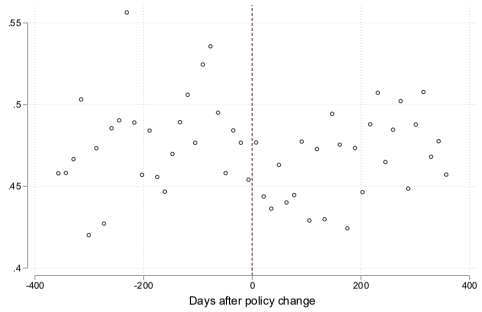
(e) Violent Pretrial Crime - White



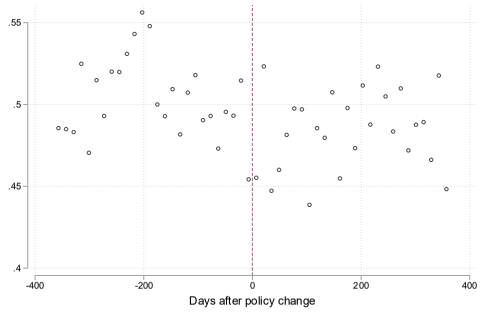
(f) Violent Pretrial Crime - Minority



(g) Conviction - Entire Sample



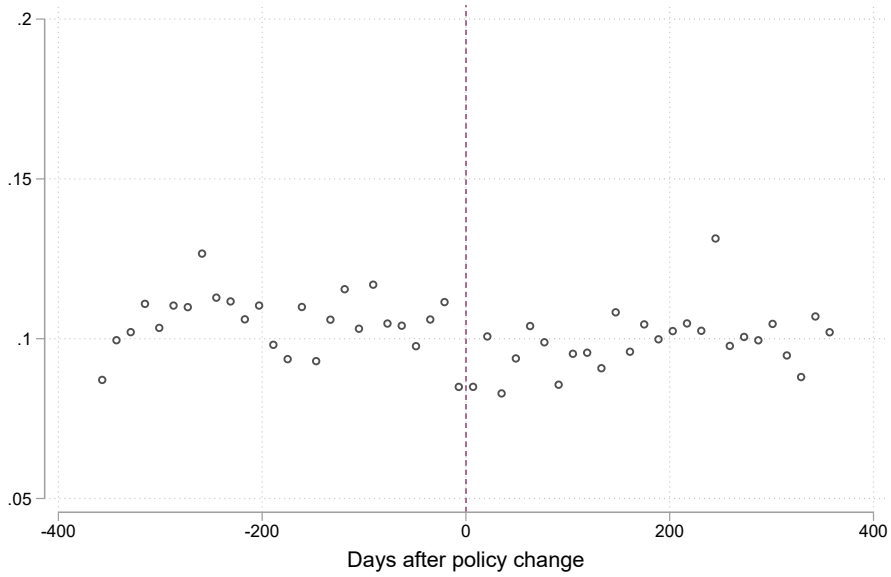
(h) Conviction - White



(i) Conviction - Minority

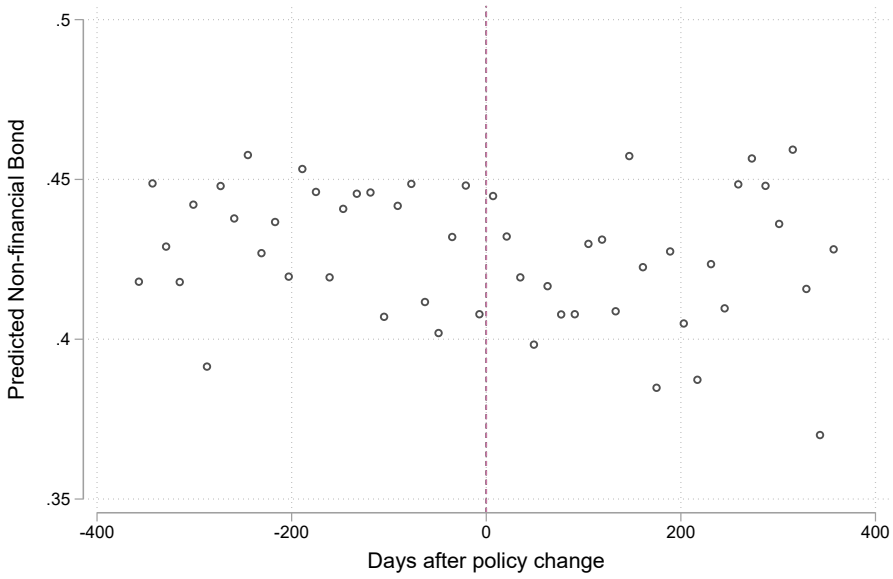
Notes: This figure shows the regression discontinuity estimate of the effect of implementing a risk assessment score policy on pretrial crime by plotting the mean probability of pretrial crime and conviction in two week bins. A bandwidth of 360 days is shown. White defendants are only white. Minority defendants are Hispanic or non-white.

Figure A.6: Regression Discontinuity Results for the Probability of Missing Outcome Data



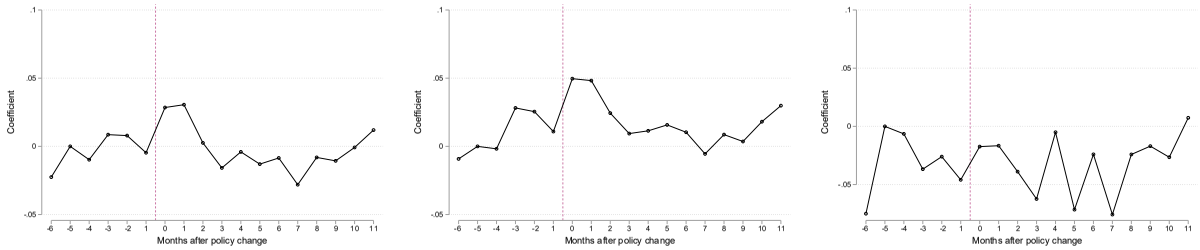
Notes: This figure shows the regression discontinuity estimate of the effect of implementing a risk assessment score policy on the likelihood of missing data by plotting the mean of the probability of missing in two week bins with linear fits. A bandwidth of 360 days is shown.

Figure A.7: Regression Discontinuity Results for Predicted Probability of Release on Non-financial Bond for Defendants with Missing Outcome Data



Notes: This figure plots an additional test of the regression discontinuity design. This graph includes means of the predicted probability of release on non-financial bond in two week bins. Outcome variables are predicted using observable case and defendant characteristics. A bandwidth of 360 days is shown. The RD is calculated only using observations from defendants who are missing data on non-financial bond.

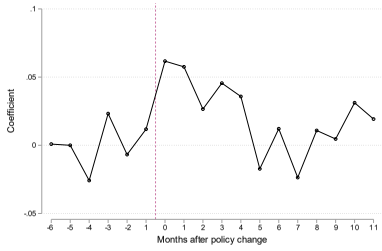
Figure A.8: Dynamic Effects of Risk Assessment Scores for Non-Financial Bond by Subgroups



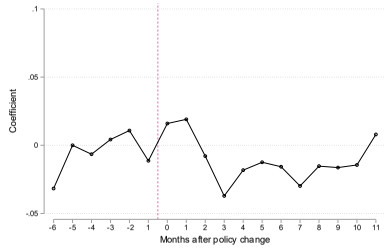
(a) Entire Sample

(b) Misdemeanors

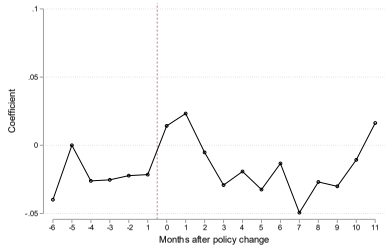
(c) Felonies



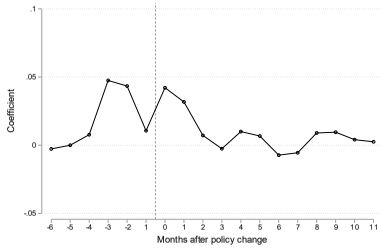
(d) Defendants with Priors



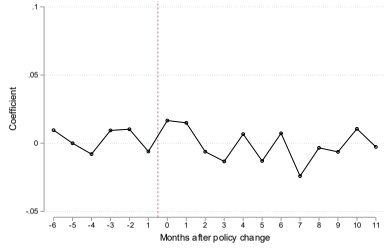
(e) Defendants with No Priors



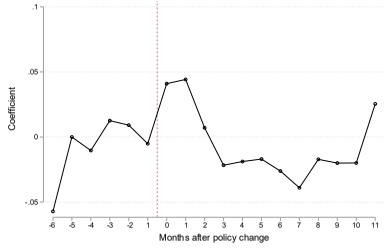
(f) Minority Defendants



(g) White Defendants



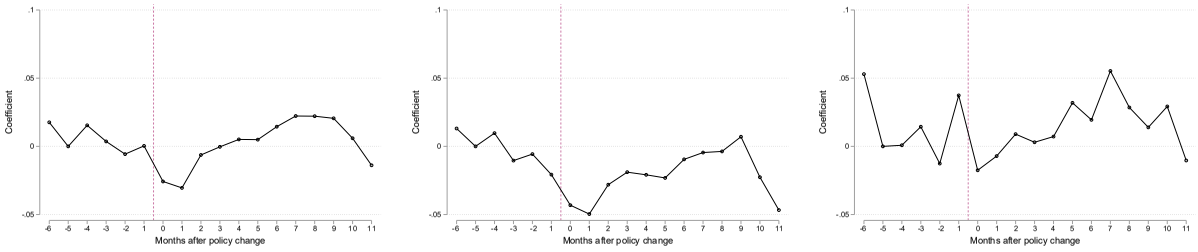
(h) Non-Indigent Defendants



(i) Indigent Defendants

These figures show coefficients from the regression of non-financial bond on indicators for months before or after risk assessment adoption by subgroup. Individual level controls for race, age, gender, citizenship and indigent status of the defendant along with controls for the severity of the crime (misdemeanor or not) as well as fixed effects for the court assigned and day-of-week of booking are used. A court-specific time trend is also included.

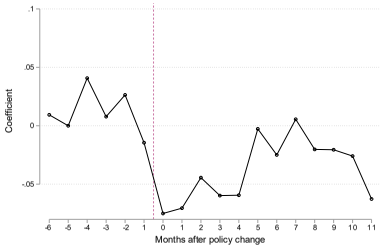
Figure A.9: Dynamic Effects of Risk Assessment Scores for Pretrial Detention by Subgroups



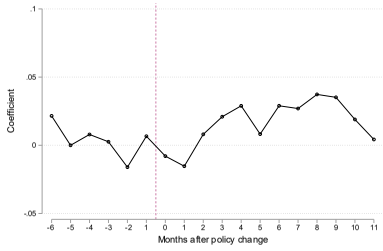
(a) Entire Sample

(b) Misdemeanors

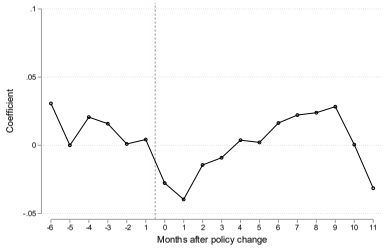
(c) Felonies



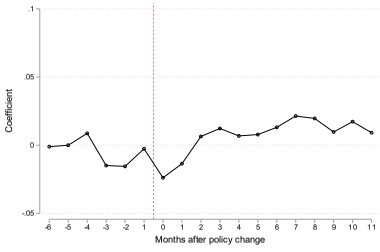
(d) Defendants with Priors



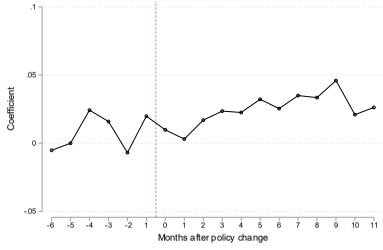
(e) Defendants with No Priors



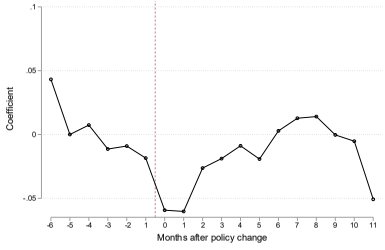
(f) Minority Defendants



(g) White Defendants



(h) Non-Indigent Defendants



(i) Indigent Defendants

These figures show coefficients from the regression of pretrial detention on indicators for months before or after risk assessment adoption by subgroup. Individual level controls for race, age, gender, citizenship and indigent status of the defendant along with controls for the severity of the crime (misdemeanor or not) as well as fixed effects for the court assigned and day-of-week of booking are used. A court-specific time trend is also included.

Table A.1: Tests of the identifying assumption of the RD analysis

	Court 2	Court 3	Court 4	Court 5	Court 6	Court 7	Court 8	Court 9	Court 10	Court 11	Court 12	Court 13
RD_Estimate	-0.00720	0.00722	0.000338	-0.00361	-0.000403	0.00121	0.000804	0.000363	0.00453	0.00174	-0.0137*	0.00258
	(0.00771)	(0.00697)	(0.00360)	(0.00442)	(0.00420)	(0.00761)	(0.00358)	(0.00411)	(0.00744)	(0.00380)	(0.00823)	(0.00815)
Observations	30638	37860	40020	23258	28334	31482	38320	28734	33238	35572	22300	27188
Bandwidth	196.6	238.4	251.4	150.1	182.1	201.8	241.5	185.4	211.4	225.3	144.5	175.3
Outcome Mean	0.131	0.131	0.0327	0.0323	0.0331	0.131	0.0321	0.0329	0.132	0.0329	0.114	0.131
Run. Var. Control	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

	White Def.	Misdemeanor	Def. Age	US Citizen	Male	Indigent	No Priors	Mental Health Flag
RD_Estimate	-0.0118	0.0147	0.704**	0.000619	-0.00909	0.00138	-0.00992	-0.00417
	(0.0123)	(0.0116)	(0.336)	(0.00796)	(0.00990)	(0.0141)	(0.0109)	(0.00698)
Observations	25326	25030	16818	23920	29286	19190	25708	34362
Bandwidth	163.2	161.8	110.8	154.6	188.6	125.0	165.2	218.9
Outcome Mean	0.432	0.684	32.58	0.889	0.752	0.500	0.735	0.121
Run. Var. Control	Y	Y	Y	Y	Y	Y	Y	Y

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

Notes: Each cell represents results for separate regressions. Robust standard errors are in parentheses. All specifications control for a linear function of distance from policy enactment in which the slope is allowed to vary on either side of the cutoff. The optimal (MSE) bandwidth is used to determine the sample for each separate regression. Some courts (1,2,13) do not occur enough times in our sample to estimate effects.

Table A.2: Regression Discontinuity Results for Predicted Outcomes

	Optimal Bandwidth
	(1)
Outcome: Predicted Non-financial Bond	
RD_Estimate	-0.00153
	(0.00673)
Observations	19604
Outcome Mean	0.607
Bandwidth	128.3
Outcome: Predicted Pretrial Detention	
RD_Estimate	-0.000287
	(0.00839)
Observations	19604
Outcome Mean	0.350
Bandwidth	128.2
Outcome: Predicted Non-Violent Pretrial Crime	
RD_Estimate	0.00113
	(0.00152)
Observations	20440
Outcome Mean	0.106
Bandwidth	133.7
Outcome: Predicted Violent Pretrial Crime	
RD_Estimate	-0.00101
	(0.000630)
Observations	23070
Outcome Mean	0.0155
Bandwidth	149.7
Outcome: Predicted Conviction	
RD_Estimate	0.00376
	(0.00487)
Observations	20266
Outcome Mean	0.490
Bandwidth	132.9
Running Variable Control	Y

Standard errors in parentheses

* $p < .1$, ** $p < .05$, *** $p < .01$

Notes: Each cell represents results for a separate regression where the key independent variable is an indicator for policy enactment. Robust standard errors are in parentheses. All specifications control for the distance from policy enactment. The optimal (MSE) bandwidth is used to determine the sample for each separate regression. Outcome variables are predicted using observable case and defendant characteristics. Specifically, we use race, age, gender, criminal history, indigent status, severity of arrest, mental health status, and US citizenship status, along with a court and day-of-week fixed effect. A linear functional form is used.

Table A.3: Release Regression Discontinuity Results for Untreated Years

	Optimal Bandwidth	
	(1)	(2)
Outcome: Non-financial Bond *2011*		
RD_Estimate	-0.0114	-0.0102
	(0.0177)	(0.0143)
Observations	11412	13126
Bandwidth	80.52	92.51
Outcome: Pretrial Detention *2011*		
RD_Estimate	0.0154	0.00225
	(0.0146)	(0.0104)
Observations	16554	19752
Bandwidth	104.1	123.7
Outcome: Non-financial Bond *2012*		
RD_Estimate	0.0103	-0.00853
	(0.0158)	(0.0149)
Observations	14062	11892
Bandwidth	109.7	92.51
Outcome: Pretrial Detention *2012*		
RD_Estimate	-0.0232	-0.0166
	(0.0149)	(0.0105)
Observations	15130	17954
Bandwidth	105.3	123.7
Outcome: Non-financial Bond *2014*		
RD_Estimate	0.00663	0.00129
	(0.0171)	(0.0152)
Observations	12120	12014
Bandwidth	93.19	92.51
Outcome: Pretrial Detention *2014*		
RD_Estimate	-0.00309	-0.00930
	(0.0181)	(0.0109)
Observations	10382	18042
Bandwidth	72.64	123.7
Controls	-	Y
Running Variable Control	Y	Y

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

Notes: Each cell shows results for a separate regression. Each panel shows results for a different dependent variable and the key independent variable is an indicator for policy enactment. Robust standard errors are in parentheses. All specifications control for the distance from the fake policy enactment. The optimal (MSE) bandwidth is used to determine the sample for each separate regression.

Table A.4: Regression Discontinuity Results for the Probability of Missing Data

	Optimal Bandwidth		*Optimal Bandwidth for Pr(Missing)*	
Outcome: Missing Data				
	(1)	(2)	(3)	(4)
RD_Estimate	-0.00583	-0.000751	-0.0114	-0.00533
	(0.00964)	(0.00862)	(0.00742)	(0.00527)
Observations	14016	14016	24386	40600
Bandwidth	92.78	92.51	157.3	255.1
Controls	-	Y	-	Y
Run. Var. Control	Y	Y	Y	Y

Standard errors in parentheses

* $p < .1$, ** $p < .05$, *** $p < .01$

Notes: Each cell represents results for separate regression. Each column presents results for the probability of missing data for the outcome variable and the key independent variable is an indicator for policy enactment. Robust standard errors are in parentheses. All specifications control for a linear function of distance from policy enactment in which the slope is allowed to vary on either side of the cutoff. The optimal (MSE) bandwidth is used to determine the sample for each separate regression in the first three columns. Columns (1)-(2) use the optimal bandwidth determined in Table 2. Columns (3)-(4) use the optimal bandwidth for the Probability of Missing Data.