MATHEMATICA Policy Research

The Academic Cost of Juvenile Incarceration

Evidence from Regression Discontinuity and Instrumental Variable Analyses

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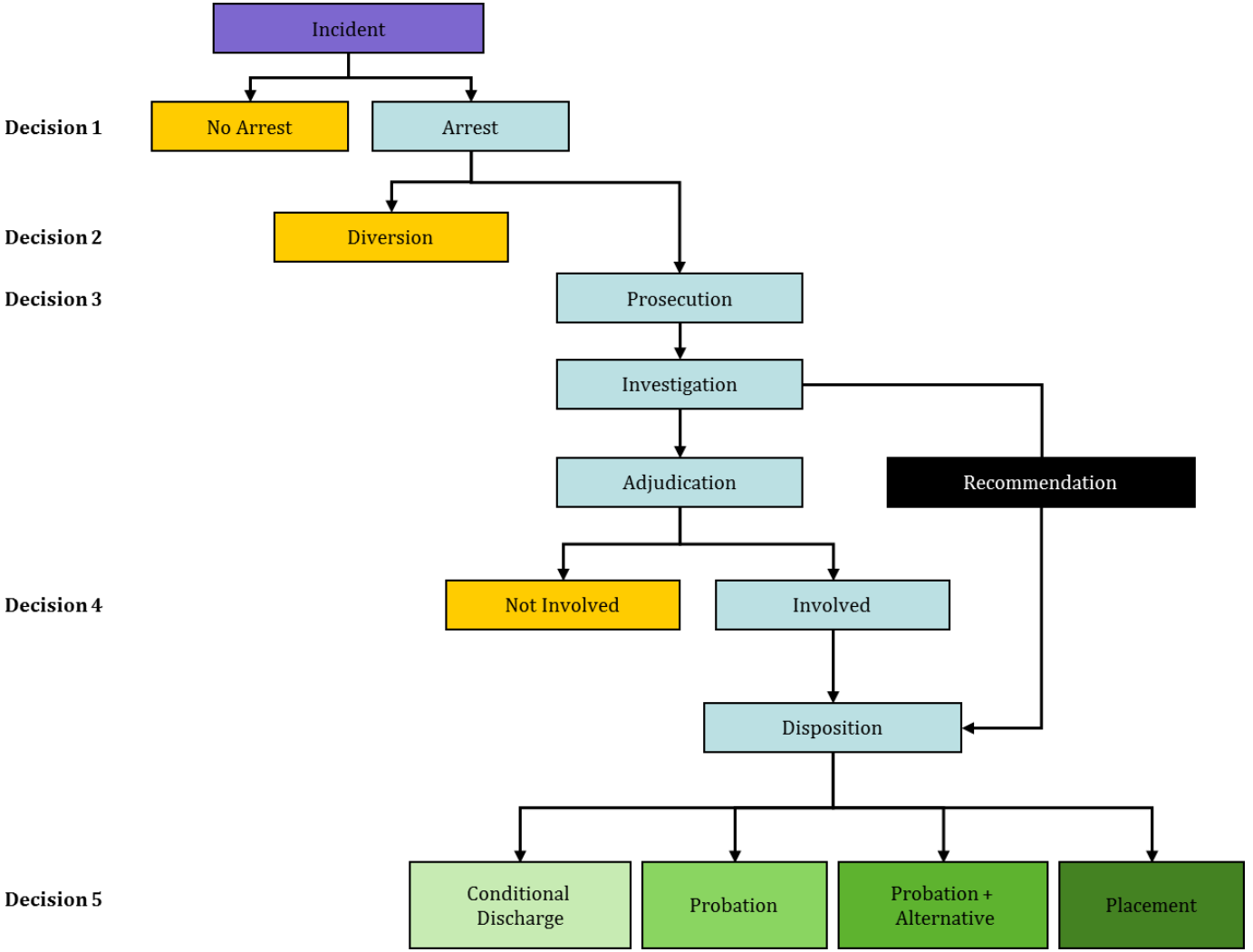
Motivation

- Incarceration negatively affects the life outcomes of adults, including employment, earnings, and marriage, and increases the likelihood of future offending
  - For example: Grogger, 1995; Pager, 2003; Raphael, 2006; Sampson & Laub, 1993, 1997; Weiman, 2007; Western, Kling, & Weiman, 2001
- Little focus on the effects of incarceration on juveniles
- As a policy response to juvenile delinquency, incarceration has been criticized as ineffective, expensive, and often dangerous for youth
  - Yet incarcerated youth attend school daily – leading some to ask, are there academic benefits of juvenile incarceration?

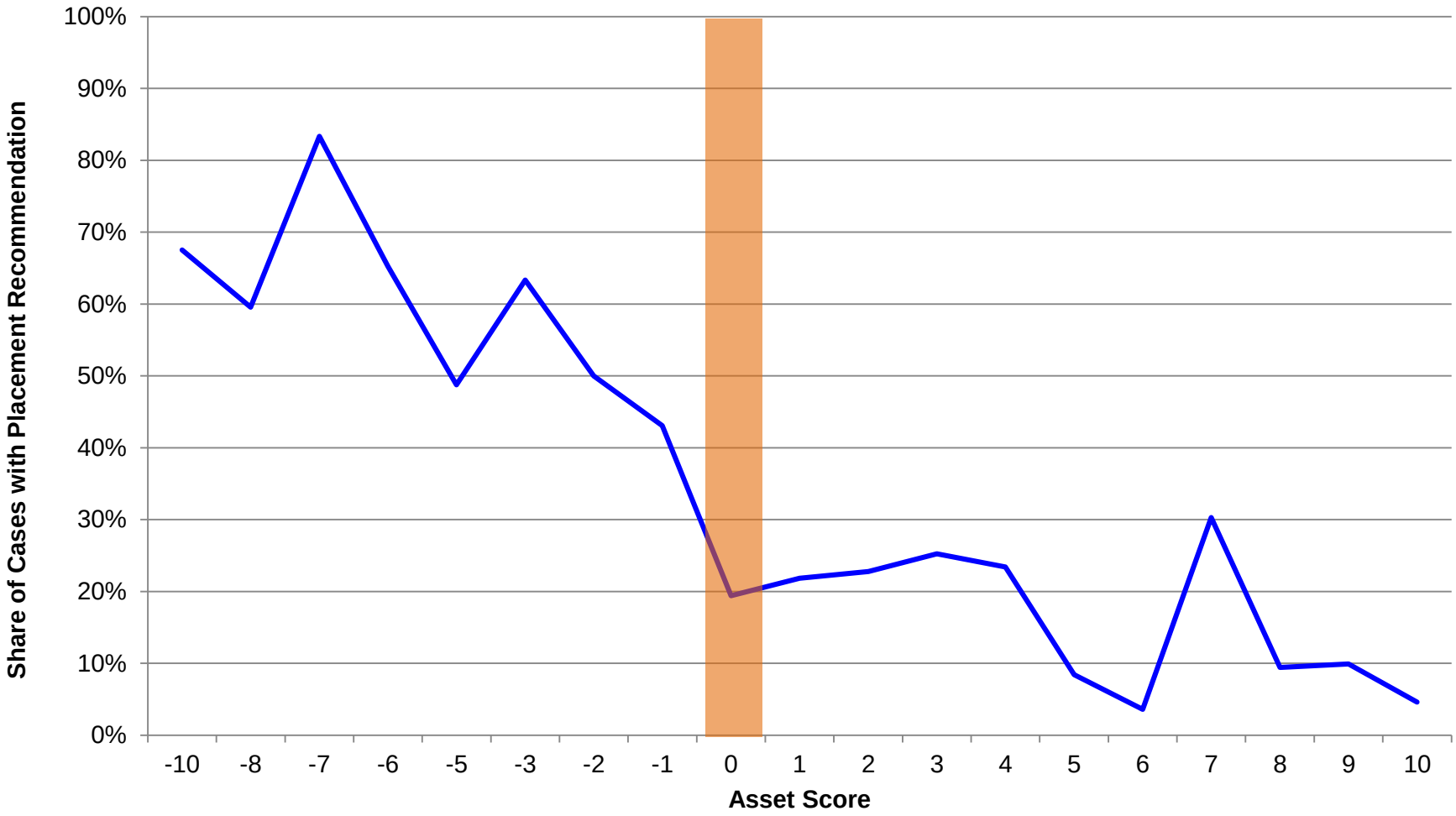
New York City juvenile justice system



Reform in New York City

- In 2005, NYC probation standardized criteria in reports and recommendations to judges
  - Risk assessment tool creates an asset score, taking into account both deficits (such as the severity of the offense) and assets (such as good school attendance)
  - Asset scores range from low assets (high risk) to high assets (low risk), and guide disposition recommendations based on discrete cut off points
  - If a PO wishes to override the recommended disposition, he/she needs supervisor approval
  - When given a disposition for secure placement, youth in New York City are generally incarcerated for one year

Share of Cases with Placement Recommendation, by Asset Score Relative to Placement Cut Off



Data sources

- New York City Department of Probation (DOP) from 2005 to 2009: individual court records
- New York City Department of Education (DOE): individual academic records
  - Effort: days absent, courses taken, credits attempted
  - Achievement: passing reading and math exams (grade 8 and below), dropout, graduation
- Juvenile court and education data merged by student identifiers by the DOE
  - Of the total 17,456 juvenile justice system records, 74% matched to educational records.
- Youth who are incarcerated are less likely to re-enroll in school upon release
  - Therefore estimates of the impact of incarceration are generalizable to those likely to re-enroll (not population of incarcerated youth)

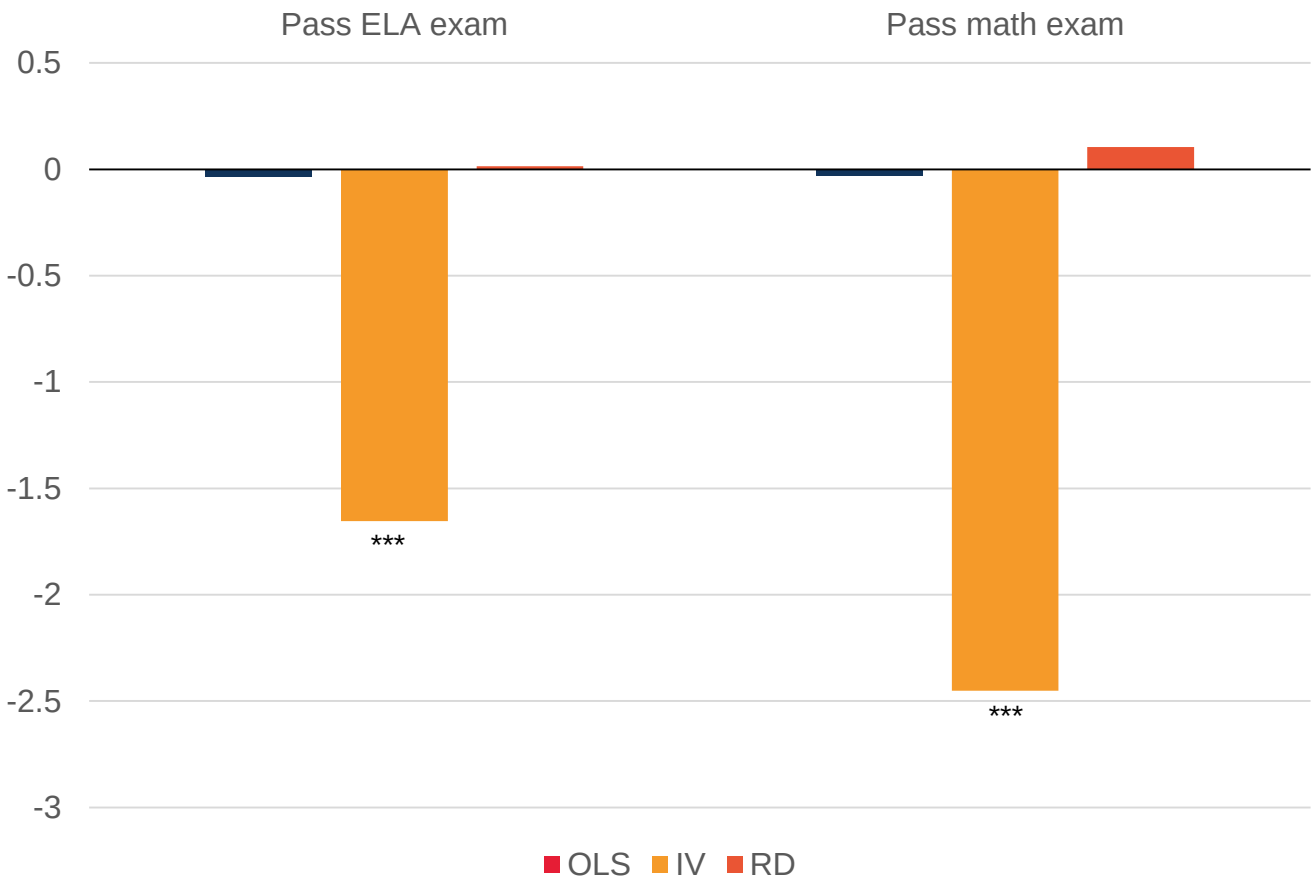
Research design

- **Regression discontinuity**
  - First stage: instrument for the probability of a placement recommendation, using the cutoff variable
  - Second stage: regress the outcome measures on the predicted probability of placement recommendation
  - Models include year fixed effects and individual level controls
- **Judge placement rate IV**
  - First stage: instrument for probability of a placement disposition, using judge leave-out placement rate
  - Second stage: regress outcome measures on the predicted probability of placement disposition
  - Models include year fixed effects and individual level controls

Results: days absent from school

DV: Days Absent	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			IV:	**IV:**	**IV:**	**IV:**	**RD:**	**RD:**	**RD:**	**RD:**
Models	**OLS**	**OLS**	**1st stage**	**2nd stage**	**1st stage**	**2nd stage**	**1st stage**	**2nd stage**	**1st stage**	**2nd stage**
Placement (disposition)	50.93***	3.242**		292.0***		50.53***				
	(1.480)	(1.329)		(6.777)		(12.51)				
Placement (recommendation)		6.707***						37.04***		15.45***
		(0.908)						(3.859)		(3.998)
Judge placement rate			0.738***		1.486***					
			(0.0161)		(0.162)					
Tx (cutoff)							0.356***		0.525***	
							(0.0131)		(0.0264)	
Asset score		0.853***			-0.008***	0.909***	0.007***	2.566***	0.0332***	1.455***
		(0.0317)			(0.0007)	(0.0413)	(0.0004)	(0.058)	(0.003)	(0.157)
Observations	9,886	9,881	9,878	9,878	9,878	9,878	3,782	3,782	3,782	3,782
R-squared	0.107	0.647	0.176		0.230		0.313		0.431	
Controls	No	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Clusters		40			39	39			37	37
First stage F-Stat			2106		84.09		740.9		396.8	
Bandwidth							5.2	5.2	5.2	5.2

Results: pre-high school outcomes

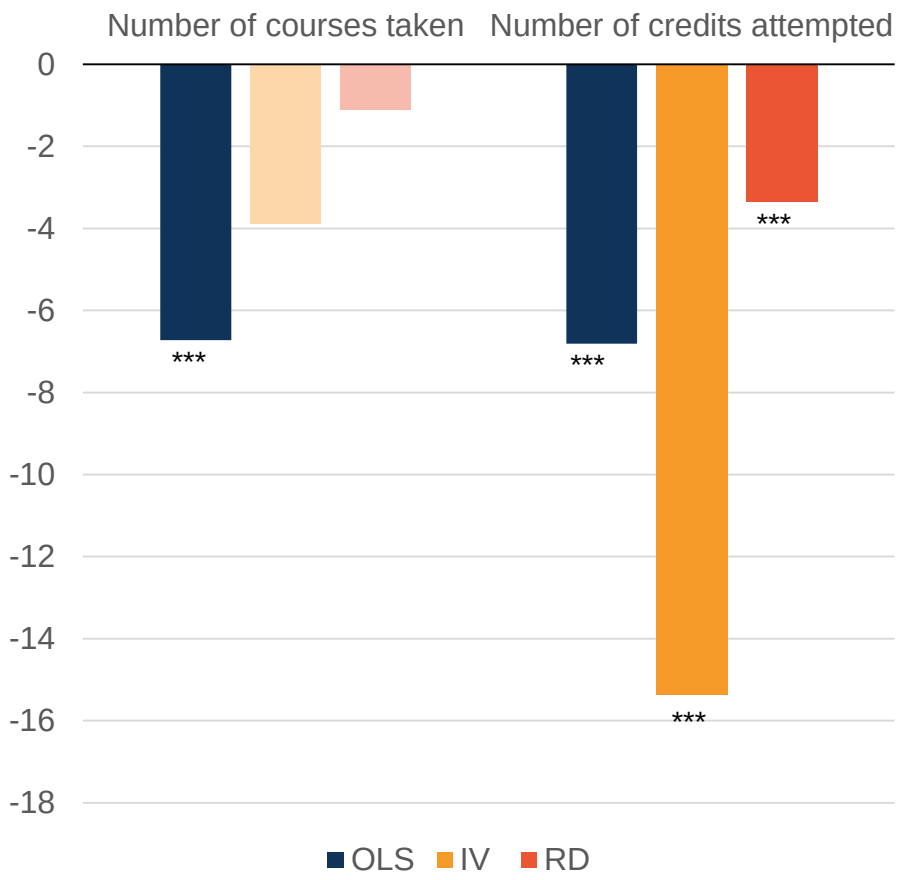


Results: pre-high school outcomes

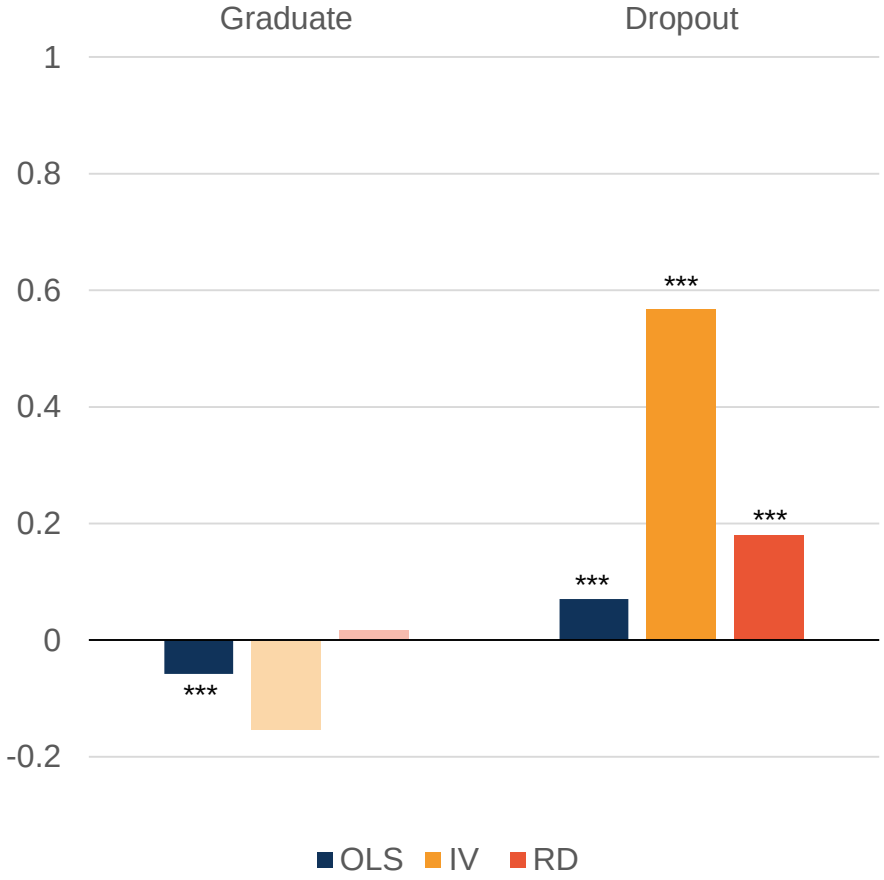
	OLS	IV		RD	
A. Pass ELA exam	(1)	(2)	(3)	(4)	(5)
Placement[a]	-0.0366		-1.654***		0.0141
	(0.0416)		(0.518)		(0.0708)
Instrument[b]		0.204***		0.382***	
		(0.0727)		(0.0497)	
Observations	2,962	2,961	2,961	903	903
R-squared	0.227	0.035		0.307	
First Stage F Stat (Bandwidth)		7.8		59.0	(7.3)
B. Pass math exam	(1)	(2)	(3)	(4)	(5)
Placement[a]	-0.0325		-2.452***		0.105
	(0.0393)		(0.787)		(0.116)
Instrument[b]		0.204**		0.343***	
		(0.0810)		(0.0515)	
Observations	2,875	2,874	2,874	720	720
R-squared	0.269	0.034		0.307	
First Stage F Stat (Bandwidth)		6.4		44.4	(5.1)

Results: high school outcomes

Effort



Achievement



Policy implications

- **Need for coordination and communication between JJ and ED systems to ensure youth leaving incarceration are able to enroll and engage in school**
  - **Align correctional education programming with public school curricula to decrease the cost of incarceration on academic progress**
  - **Foster open communication between the juvenile justice and educational systems to promote information sharing and reintegration of youth back into school following incarceration**
  - **Create short-term educational options for youth experiencing absences from school during court involvement**
  - **Facilitate connections to neighborhood schools during incarceration to improve reentry and prevent recidivism**

Thanks!

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