

Shared Punishment? The Impact of Criminal Sentences on Defendants, Their Children, and Their Partners

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How shall we punish crime?

There are many possible punishments: Criminologists often advocate for a ladder approach to punishing crime

- Start with lower level punishments such as fines
 - Becker argues that “social welfare is increased if fines are used *whenever feasible*” (Essays in the Economics of Crime and Punishment, pg 28)
- Graduate to harsher penalties as crime severity increases and/or number of crimes committed by an individual increases

We might also want to consider externalities of punishment, particularly on families of defendants

Prison as the last rung on the ladder

Much of the economics of crime analysis thus far has focused on the impact of prison

- Prison is a punishment of last resort in many countries
- Thus, while prison is important and we will look at it in this paper, we have expanded to include other punishments in order to better understand impacts on defendants and their families

This presentation - Main questions

- ① How should we optimally punish crime?
 - We first show descriptively that the “ladder” approach to punishing crime is salient
 - Next, we estimate the causal impact of two important punishment types - fines and prison - on defendants
- ② What impact do different types of punishments have on children and partners of defendants?
 - How does impact change with stage of childhood? Different outcomes?

Main challenges

In this paper we present evidence using Finnish data to address 2 main challenges:

- ① Punishment correlated with many other determinants of defendant and child outcomes
 - Use random assignment to judges to estimate causal impact of both fines and prison
- ② Punishments may have important spillovers
 - Link defendants to their families
 - Look at externalities on defendant's children, paying careful attention to child age and with an array of possible outcomes
 - Look at externalities on defendant's spouses

Contribution to the literature

Incarceration impact on defendants

- Bhuller et. al. (2016), Mueller-Smith (2015), Kling et. al. (2006)

Other types of punishment

- Probation: Di Tella and Schargrotsky (2013) Hennequelle, Monnery, and Kensey (2016)
- Fines: Bar-Ilan and Sacerdote (2004), Mello (2019), Goncalves and Mello (2019)

Incarceration and externalities

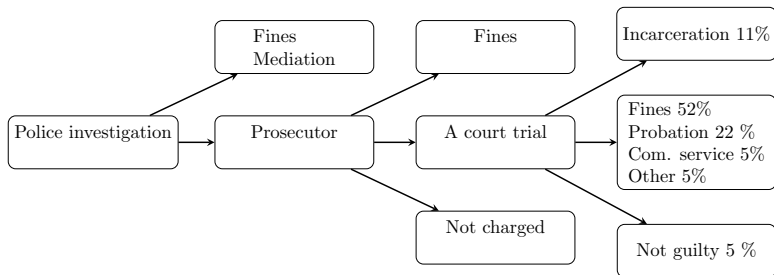
- Dobbie et. al. (2018), Norris, Pecenco, & Weaver (2018), Bhuller et. al. (2018), Artega (2018), Billings (2017)

Data

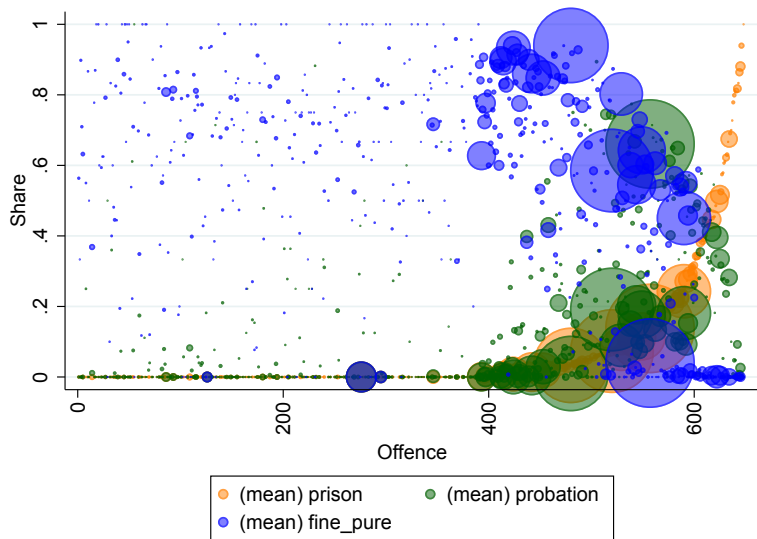
We use administrative data from Finland covering the entire population

- Includes every court case, all labor market outcomes, all high school outcomes, etc. all linked using unique government identifiers
- Collected data on every judge in Finland and their cases
- Collected data on early childhood outcomes from a subset of municipalities
- Awaiting data on additional outcomes (age 18 military tests, early health outcomes)

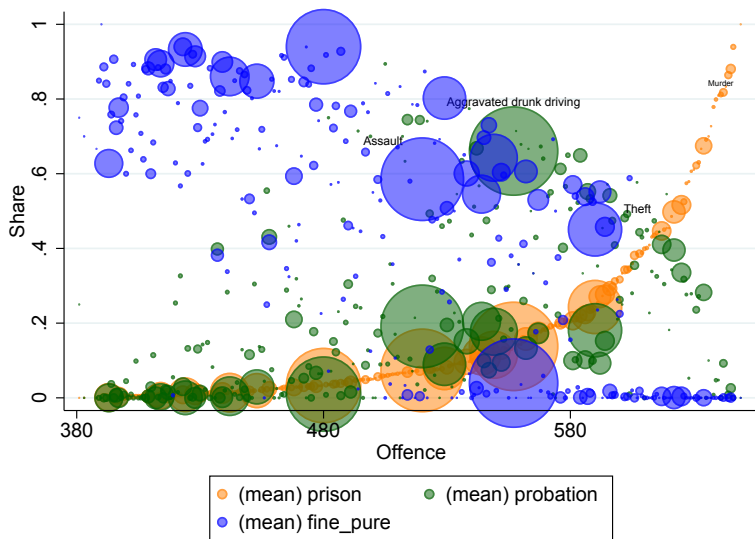
Sentencing process in Finland



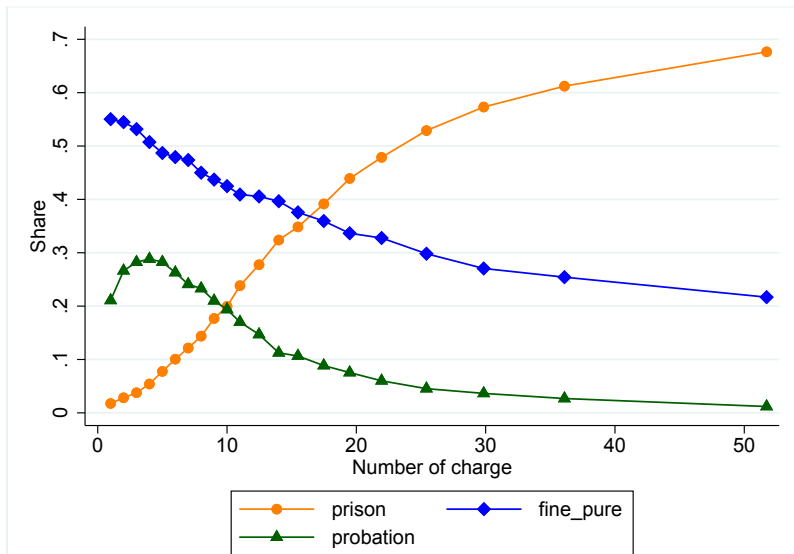
Evidence on the ladder approach to punishments



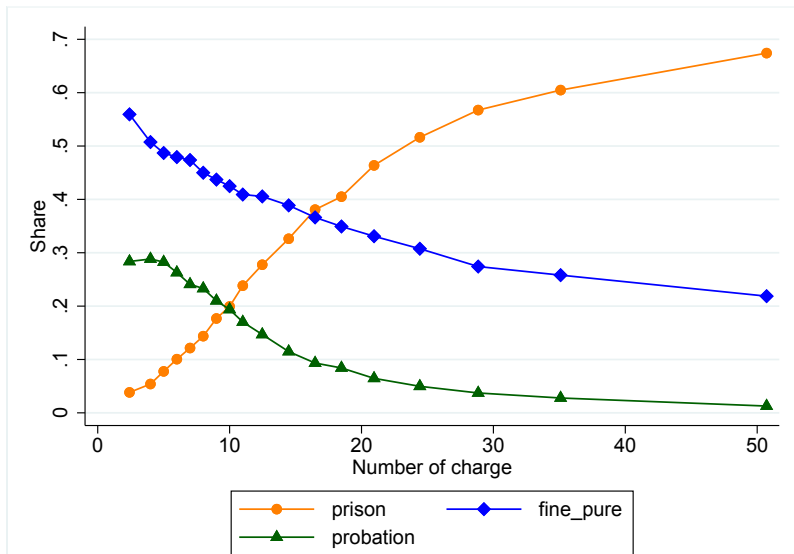
Evidence on the ladder approach to punishments



Evidence on the ladder approach to punishments



The progression of serial criminals (>3 crimes) on the ladder



Summary statistics - Defendants

	Full Court Sample		Sub-samples			
	Mean	SD	Fined		Incarcerated	
			Mean	SD	Mean	SD
	(1)	(2)	(3)	(4)	(5)	(6)
Defendant Characteristics						
Age	36.74	10.56	36.93	10.71	33.94	8.761
Income in Euors	13865.3	17335.9	15072.7	17098.3	5580.0	9123.9
Employed	0.440	0.496	0.491	0.500	0.157	0.364
Secondary degree	0.393	0.488	0.422	0.494	0.267	0.442
Tertiary degree	0.0965	0.295	0.103	0.304	0.0211	0.144
Marital status	0.233	0.422	0.234	0.423	0.154	0.361
Number of children	1.826	1.184	1.839	1.168	1.708	1.002
Court incident t-1	0.346	0.476	0.279	0.449	0.714	0.452
Court incident t-2, t-3	0.446	0.497	0.375	0.484	0.846	0.361
Prison sentence t-1	0.117	0.322	0.0614	0.240	0.467	0.499
Prison sentence t-2, t-3	0.152	0.359	0.0869	0.282	0.562	0.496
Observations	220677		106082		35671	

Summary statistics - Parents

	Full Population		Court Population					
	Mean	SD	All Court		Fined		Incarcerated	
			Mean	SD	Mean	SD	Mean	SD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Parent Characteristics (when child is born)								
Age	31.1	5.9	29.3	7.0	29.4	6.6	27.5	6.3
Income thousands euros	18.0	23.5	12.01	19.3	12.75	17.7	6.1	15.71
Employed	0.716	0.451	0.412	0.492	0.449	0.497	0.185	0.388
Primary degree	0.180	0.383	0.571	0.494	0.535	0.495	0.772	0.420
Secondary degree	0.446	0.497	0.344	0.475	0.371	0.483	0.211	0.408
Tertiary degree	0.374	0.483	0.084	0.278	0.094	0.292	0.017	0.131
Marital status	0.671	0.469	0.395	0.488	0.406	0.491	0.279	0.444
Number of children	1.824	1.177	1.839	1.916	1.921	1.002	1.781	1.041
Court incident t-1	0.016	0.125	0.326	0.460	0.270	0.444	0.645	0.478
Prison sentence t-1	0.001	0.042	0.100	0.299	0.056	0.230	0.363	0.481
Observations	3,357,553		180,328		85,124		28,482	

Summary statistics - Children

Child Characteristics

Income age 19	6.2	5.6	5.6	5.7	5.8	5.8	4.9	5.4
NEET 19	0.206	0.404	0.323	0.467	0.309	0.462	0.398	0.489
Any degree age 19	0.677	0.471	0.408	0.491	0.424	0.495	0.301	0.459
GPA	7.629	0.922	7.082	1.018	7.095	1.017	6.881	0.952
Court incidents age 15-19	0.027	0.162	0.066	0.249	0.063	0.244	0.101	0.301
Prison sentences age 15-19	0.001	0.025	0.005	0.072	0.004	0.065	0.012	0.109

Random assignment to judges

- In Finland, random assignment of judges to cases is legally required
- Randomization occurs subject to some restrictions. For now we include crime fixed effects to address these issues.
- We also include standard sample restrictions (2 judges per court, 100 cases per judge)
 - Plus a few Finland specific (Swedish speaking, training judges, young defendants) Sample Restrictions
- This makes estimating the impact of prison as done in previous papers straightforward

Empirical specification

$$Y_{icdt} = \beta_0 + \beta_1 \hat{P}_{cdt} + \beta_2 \mathbf{X}_{icdt} + \varepsilon_{icdt}$$

$$P_{cdt} = \alpha_0 + \alpha_1 Z_{jd} + \alpha_2 \mathbf{X}_{icdt} + \varepsilon_{icdt}$$

Empirical specification: Judge stringency

$$P_{cdt}^* = P_{cdt} - \kappa \mathbf{X}_{ct}$$

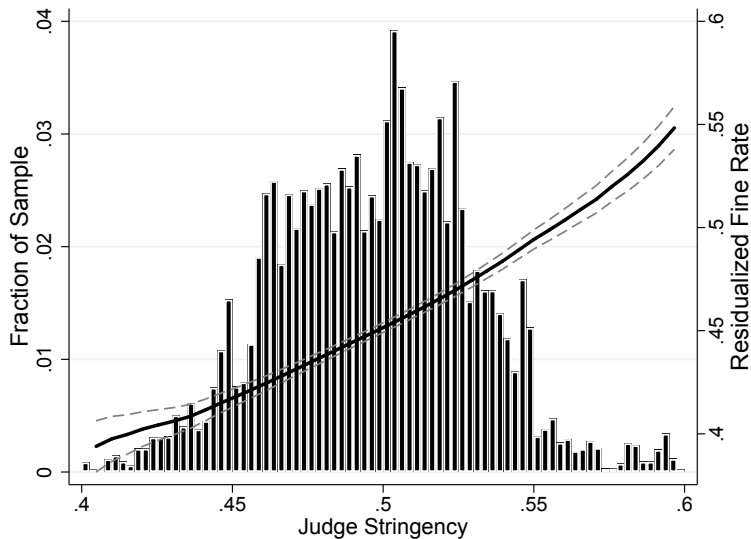
$$Z_{jd} = \left(\frac{1}{n_j - n_{jd}} \right) \left(\sum_{c=0}^{n_j} P_{dk}^* - \sum_{c=0}^{n_{jf}} P_{dc}^* \right)$$

What we identify

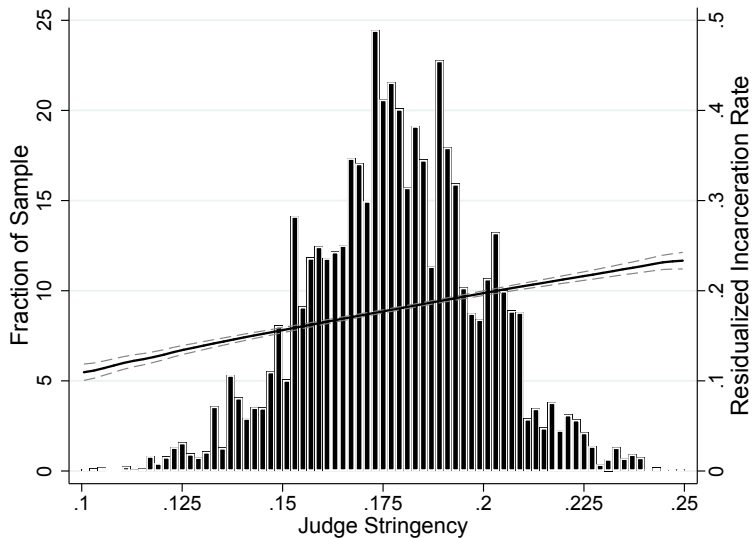
$$LATE_{Prison} = \pi_{Prob} LATE_{Prison/Prob} + \pi_{Fine} LATE_{Prison/Fine}$$

$$LATE_{Fine} = \pi_{Prob} LATE_{Fine/Prob} + \pi_{Prison} LATE_{Fine/Prison}$$

Judge stringency - Fines



Judge stringency - Prison



First stage - Defendants

	Fines (1)	Prison (2)
A. FE only	0.946*** (0.063)	0.551*** (0.054)
F stat	209	102.9
B. With Controls	0.943*** (0.065)	0.538*** (0.048)
F stat	540.7	1424.9
Dependent mean	0.489	0.171
N	220,677	220,677

First Stage Children

Balance checks

	Fines	Fines Judge IV	Prison	Prison Judge IV
Age	-0.0008*** (0.0001)	0 (0)	-0.0003*** (0.00008)	0 (0)
Kids	-0.0078*** (0.0013)	-0.0001 (0)	-0.0083*** (0.0006)	0 (0)
Married	-0.0322*** (0.0030)	0 (0.0001)	0.0073*** (0.0017)	0 (0.0001)
Post degree	0.0148*** (0.0023)	-0.0002 (0.0001)	-0.0163*** (0.0016)	0 (0)
College	-0.0146*** (0.0045)	-0.0004 (0.0002)	-0.0185*** (0.0021)	-0.0001 (0.0001)
Employed	0.0268*** (0.0029)	0 (0)	-0.0353** (0.0018)	0 (0.0001)
...		

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Balance checks (continued)

	Fines	Fines Judge IV	Prison	Prison Judge IV
Income	0*** (0)	0 (0)	-0.0000*** (0.0000)	0 (0)
Native born	0.0043 (0.0056)	0.0001 (0.0003)	-0.0186*** (0.0029)	-0.0000 (0.0002)
Prison t-1	-0.116*** (0.0044)	-0.0001 (0.0002)	0.280*** (0.0046)	0.0000 (0.0001)
Charged t-1	-0.0476*** (0.0030)	-0.0003 (0.0001)	-0.0445 (0.0021)	0.0000 (0.0001)
Prison t-2, t-3	-0.0466*** (0.0040)	0.0001 (0.0002)	0.0538*** (0.0044)	0.0000 (0.001)
Charged t-2, t-3	-0.0466*** (0.0029)	0.0001 (0.0001)	0.0538 (0.0018)	0 (0)
P	543.3	1.152	1623.3	0.359
F test	0	0.314	0	0.977
N	220,677	220,677	220,677	220,677

Identification assumptions

- Monotonicity
 - Do a “reverse sample instrument test” Monotonicity
 - Also check to be sure fathers are not treated differently for spillovers analysis Fathers
- No multi-dimensional sentencing
 - Not legal to offer multiple punishments for one crime, although can occur for cases with multiple crimes
 - More subtle forms of multi-dimensional sentencing could occur
- Placebo Check

Impacts on other punishments

	Fines (1)	Probation (2)	Prison (3)
A. IV Fines	0.946*** (0.063)	-0.382*** (0.027)	-0.252*** (0.025)
B. IV Prison	-0.525*** (0.054)	0.261*** (0.043)	0.551*** (0.054)
Dependent mean	0.489	0.230	0.171
<i>N</i>	220,677	220,677	220,677

Charges

Dep. variable	Pr(Charged)		
	1 year after (1)	2 years after (2)	3 years after (3)
OLS: Fines	-0.008***	-0.005**	-0.010***
Controls	(0.002)	(0.002)	(0.002)
IV: Fines	0.0773	0.0919*	0.0393
No controls	(0.0399)	(0.0385)	(0.0371)
OLS: Incarceration	0.053***	0.031***	0.052***
Controls	(0.003)	(0.003)	(0.003)
IV: Incarceration	-0.164	-0.241*	-0.081
No controls	(0.106)	(0.104)	(0.0968)
Dep. mean	0.319	0.278	0.254
Number of cases	205,602	205,602	205,602

Prison

Dep. variable	Pr(Prison)		
	1 year after (1)	2 years after (2)	3 years after (3)
OLS: Fines	-0.093***	-0.073***	-0.067***
Controls	(0.001)	(0.001)	(0.001)
IV: Fines	0.014	0.008	-0.006
No controls	(0.029)	(0.027)	(0.026)
OLS: Incarceration	0.324***	0.244***	0.222***
Controls	(0.002)	(0.002)	(0.002)
IV: Incarceration	-0.006	-0.037	-0.045
No controls	(0.074)	(0.070)	(0.067)
Dep. mean	0.131	0.112	0.101
Number of cases	205,602	205,602	205,602

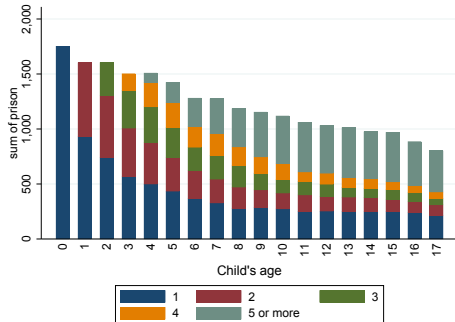
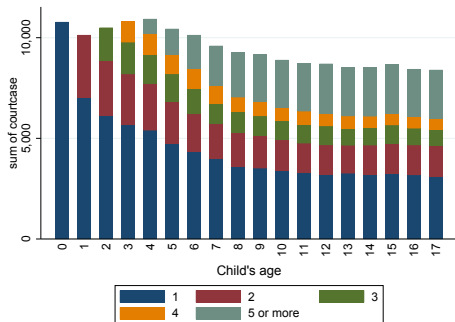
Employment

Dep. variable	Pr(Employed)		
	1 year after (1)	2 years after (2)	3 years after (3)
OLS: Fines	0.038***	0.036***	0.033***
Controls	(0.002)	(0.002)	(0.002)
IV: Fines	0.002	-0.042	-0.026
No controls	(0.036)	(0.036)	(0.036)
OLS: Incarceration	-0.109***	-0.101***	-0.096
Controls	(0.002)	(0.002)	(0.002)
IV: Incarceration	-0.178	-0.038	-0.121
No controls	(0.095)	(0.099)	(0.098)
Dep. mean	0.360	0.364	0.368
Number of cases	217,250	213,966	210,664

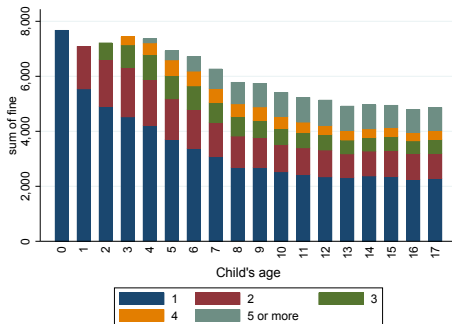
Earnings

Dep. variable	Earnings		
	1 year after (1)	2 years after (2)	3 years after (3)
OLS: Fines	700.57***	654.93***	659.72***
Controls	(58.44)	(66.32)	(67.23)
IV: Fines	-49.21	-693.36	-86.05
No controls	(1420.42)	(1522.21)	(1524.81)
OLS: Incarceration	-1305.73 ***	-1296.97***	-1397.95***
Controls	(82.75)	(94.11)	(95.56)
IV: Incarceration	-8643.89*	-6009.12	-4132.46
No controls	(3801.20)	(4118.85)	(4107.93)
Dep. mean	10204.80	10455.15	10695.28
Number of cases	217,250	217,250	217,250

Exposure to crime over childhood



Exposure to crime over childhood



Impact of fines on children - OLS

	All (1)	Early (2)	Middle (3)	Late (4)
A: Failure of Cognition Test Age 5				
Estimate	0.0073	0.0073	-	-
SE	(0.0067)	(0.0067)	-	-
Mean of dep	0.319	0.319	-	-
Observations	25525	25525	-	-
B: GPA Age 16				
Estimate	-0.020*	-0.018	-0.035*	-0.014
Se	(0.010)	(0.034)	(0.016)	(0.011)
Mean of dep	7.082	7.142	7.081	7.077
Observations	71065	4376	24980	41681
C: Crime Ages 15-17				
Estimate	0.002	0.000	0.003	0.002
Se	(0.002)	(0.003)	(0.002)	(0.002)
Mean of dep	0.038	0.013	0.0032	0.046
Observations	91317	8407	32526	50374

Impact of fines on children - OLS

	All (1)	Early (2)	Middle (3)	Late (4)
D: No employment or schooling age 19				
Estimate	-0.011*	-0.000	-0.010	-0.013*
Se	(0.005)	(0.029)	(0.008)	(0.006)
Mean of dep	0.323	0.355	0.339	0.314
Observations	56183	1246	18011	36919
E: Degree by age 19				
Estimate	0.008*	0.028	0.006	0.007
Se	(0.005)	(0.022)	(0.008)	(0.005)
Mean of dep	0.408	0.408	0.408	0.408
Observations	66590	2833	22582	41166

Impact of prison on children - OLS

	All (1)	Early (2)	Middle (3)	Late (4)
A: Failure of Cognition Test Age 5				
Estimate	-0.0063	-0.0063	-	-
SE	(0.0123)	(0.0123)	-	-
Mean of dep	0.319	0.319	-	-
Observations	25525	25525	-	-
B: GPA Age 16				
Estimate	-0.041*	-0.065	-0.022	-0.051*
Se	(0.018)	(0.052)	(0.025)	(0.021)
Mean of dep	7.082	7.142	7.081	7.077
Observations	71065	4376	24980	41681
C: Crime Ages 15-17				
Estimate	0.003	-0.002	0.002	0.004
Se	(0.004)	(0.004)	(0.004)	(0.005)
Mean of dep	0.038	0.013	0.032	0.046
Observations	91317	8407	32526	50374

Impact of prison on children - OLS

	All (1)	Early (2)	Middle (3)	Late (4)
D: No employment or schooling age 19				
Estimate	0.035***	0.020	0.032**	0.037***
Se	(0.010)	(0.051)	(0.014)	(0.011)
Mean of dep	0.323	0.355	0.339	0.314
Observations	56183	1246	18011	36919
E: Degree by age 19				
Estimate	-0.047***	-0.063**	-0.039**	-0.049***
Se	(0.009)	(0.031)	(0.013)	(0.009)
Mean of dep	0.408	0.408	0.408	0.408
Observations	66590	2833	22582	41166

Impact of fines on children - IV

	All (1)	Early (2)	Middle (3)	Late (4)
A: Failure of Cognition Test Age 5				
Estimate	-0.057	-0.057	-	-
SE	(0.098)	(0.311)	-	-
Mean of dep	0.319	0.319	-	-
Observations	25525	25525	-	-
B: GPA Age 16				
Estimate	-0.150	-1.492	-0.381	0.064
Se	(0.161)	(1.098)	(0.316)	(0.191)
Mean of dep	7.082	7.142	7.081	7.077
Observations	71065	4376	24980	41681
C: Crime Ages 15-17				
Estimate	-0.016	0.049	-0.116	0.020
Se	(0.028)	(0.097)	(0.061)	(0.033)
Mean of dep	0.038	0.013	0.032	0.046
Observations	91317	8407	32526	50374

Impact of fines on children - IV

All	Early	Middle	Late
(1)	(2)	(3)	(4)

D: No employment or schooling age 19

Estimate	-0.146	0.356	-0.074	-0.209
Se	(0.094)	(0.885)	(0.171)	(0.115)
Mean of dep	0.323	0.355	0.339	0.314
Observations	56183	1246	18011	36919

E: Degree by age 19

Estimate	-0.101	-1.078	-0.071	-0.069
Se	(0.085)	(1.151)	(0.149)	(0.102)
Mean of dep	0.408	0.408	0.408	0.408
Observations	66590	2833	22582	41166

Impact of prison on children - IV

	All (1)	Early (2)	Middle (3)	Late (4)
A: Failure of Cognition Test Age 5				
Estimate	0.063	0.063	-	-
SE	(0.233)	(0.233)	-	-
Mean of dep	0.319	0.319	-	-
Observations	25525	25525	-	-
B: GPA Age 16				
Estimate	-0.364	1.052	-0.233	-0.587
Se	(0.365)	(1.380)	(0.478)	(0.539)
Mean of dep	7.082	7.142	7.081	7.077
Observations	71065	4376	24980	41681
C: Crime Ages 15-17				
Estimate	-0.024	-0.143	0.072	-0.071
Se	(0.058)	(0.106)	(0.076)	(0.097)
Mean of dep	0.038	0.013	0.032	0.046
Observations	91317	8407	32526	50374

Impact of prison on children - IV

	All (1)	Early (2)	Middle (3)	Late (4)
D: No employment or schooling age 19				
Estimate	-0.013	0.469	-0.244	0.181
Se	(0.198)	(1.164)	(0.270)	(0.284)
Mean of dep	0.323	0.355	0.339	0.314
Observations	56183	1246	18011	36919
E: Degree by age 19				
Estimate	0.166	-0.263	0.169	0.202
Se	(0.191)	(0.574)	(0.244)	(0.292)
Mean of dep	0.408	0.408	0.408	0.408
Observations	66590	2833	22582	41166

Impact on Spouses: Separations

Dep. variable	1 year after (1)	Pr(single) 2 years after (2)	3 years after (3)
OLS: Fines	-0.003	-0.003	-0.001
Controls	(0.003)	(0.003)	(0.003)
IV: Fines	0.072	0.045	-0.036
No controls	(0.056)	(0.058)	(0.057)
OLS: Incarceration	0.040***	0.033***	0.032***
Controls	(0.005)	(0.005)	(0.005)
IV: Incarceration	0.113	-0.019	0.169
No controls	(0.153)	(0.148)	(0.144)
Dep. mean	0.588	0.590	0.588
Number of cases	92334	91357	90367

Impact on Spouses: Charges

Dep. variable	Pr(Spouse Charged)		
	1 year after (1)	2 years after (2)	3 years after (3)
OLS: Fines	0.003	0.002	0.002
Controls	(0.002)	(0.002)	(0.002)
IV: Fines	0.042	0.035	0.055
No controls	(0.040)	(0.039)	(0.036)
OLS: Incarceration	0.034***	0.024***	0.028***
Controls	(0.007)	(0.006)	(0.006)
IV: Incarceration	0.085	0.062	-0.009
No controls	(0.123)	(0.122)	(0.112)
Dep. Mean	0.088	0.077	0.070
Number of Observations	68800.000	68800.000	68800.000

Impact on Spouses: Employment

Dep. variable	Pr(Spouse Employed)		
	1 year after (1)	2 years after (2)	3 years after (3)
OLS: Fines	-0.002	0.000	0.002
Controls	(0.004)	(0.004)	(0.004)
IV: Fines	-0.073	-0.082	-0.062
No controls	(0.058)	(0.058)	(0.062)
OLS: Incarceration	-0.023***	-0.027***	-0.023***
Controls	(0.008)	(0.008)	(0.008)
IV: Incarceration	0.059	-0.153	-0.212
No controls	(0.204)	(0.190)	(0.194)
Dep. mean	0.571	0.575	0.580
Number of cases	73291	72778	71715

Impact on Spouses: Earnings

Dep. variable	Spouse's Earnings		
	1 year after (1)	2 years after (2)	3 years after (3)
OLS: Fines	-173.129	-165.135	-177.245
Controls	(152.520)	(145.039)	(157.250)
IV: Fines	-4933.019*	-4910.871*	-2868.663
No controls	(2720.613)	(2648.413)	(2925.956)
OLS: Incarceration	-623.382***	-585.498***	-722.775
Controls	(211.704)	(225.321)	(228.647)
IV: Incarceration	-5357.400	-3290.092	-9357.119
No controls	(8605.734)	(8440.101)	(9101.428)
Dep. mean	15492	15879	
Number of cases	72778	72275	71715

Conclusions - Defendants

- OLS estimates (including rich controls) indicate that prison is universally negative and fines are universally positive
- However, IV estimates indicate more nuance - prison is better if goal is crime reduction, fines do better in terms of labor market outcomes

Conclusions - Spillovers on Children

- OLS results for children indicate negative spillovers for prison
- With exception of GPA, spillovers from fines appear to be marginally positive
- Unfortunately, IV estimates are very noisy and imprecise

Conclusions - Spillovers on Partners

- Results suggest negative spillovers on partners
- Fines have a significant and negative impact on the spouse's earnings the year after punishment

Additional sample restrictions

Table 10: Sample restrictions for judges from 2000-2015

Sample size after each restriction (in each row)					
A. Judge Stringency Panel					
Number of	Cases	Defendants	Judges	Courts	Children
No restrictions	388829	202408	3361	65	-
Drop training judges	304326	168882	1035	65	-
Swedish speaking	296245	163688	1034	65	-
Drop judges < 100 over career	282135	157644	680	65	-
Drop courts < 2 judges	282119	157637	680	65	-
B. Panel of Analysis for cases decided between 2000-2013					
Number of	Cases	Defendants	Judges	Courts	Children
Merging with kids	187049	60373	677	65	100477

[Main](#)

First stage fines - Children

	All (1)	Early (2)	Middle (3)	Late (4)
A. FE only	1.022*** (0.076)	1.010*** (0.094)	0.920*** (0.090)	1.151*** (0.092)
B. With controls	1.032*** (0.075)	1.037*** (0.094)	0.936*** (0.089)	1.135*** (0.092)
Dependent mean	0.472	0.474	0.471	0.472
F-stat	133.03	82.73	92.03	74.12
N	187,049	57,597	68,165	61,278

First stage prison- Children

	All (1)	Early (2)	Middle (3)	Late (4)
A. FE only	0.603*** (0.070)	0.609*** (0.089)	0.612*** (0.092)	0.604*** (0.093)
B. With controls	0.609*** (0.066)	0.631*** (0.087)	0.612*** (0.092)	0.604*** (0.093)
Dependent mean	0.158	0.162	0.162	0.148
F-stat	75.35	46.60	44.05	41.94
N	187,049	57,597	68,165	61,278

[Main](#)

Monotonicity test

	Baseline instrument	Reverse-sample Instrument
Sub-sample:	First stage P(Incarcerated)	First stage P(Incarcerated)
Any post compulsory education		
Estimate	0.389	0.331
(se)	(0.064)	(0.051)
Observations	53993	56488
No post compulsory education		
Estimate	0.581	0.598
(se)	(0.079)	(0.078)
Observations	69731	72886
Previously Employed		
Estimate	0.150	0.116
(se)	(0.052)	(0.041)
Observations	48096	50297
Previously non-Employed		
Estimate	0.729	0.456
(se)	(0.080)	(0.107)
Observations	75703	79134

Monotonicity (continued)

Married

Estimate	0.379	0.431
(se)	(0.089)	(0.083)
Observations	41074	42825

Not married

Estimate	0.610	0.391
(se)	(0.064)	(0.046)
Observations	82913	86820

Over 30 years old

Estimate	0.497	0.411
(se)	(0.006)	(0.057)
Observations	80863	84386

Less than 30 years old

Estimate	0.667	0.555
(se)	(0.095)	(0.077)
Observations	42953	45094

Monotonicity (continued)

Violence crimes

Estimate	0.363	0.285
(se)	(0.075)	(0.062)
Observations	45637	47779

Property crimes

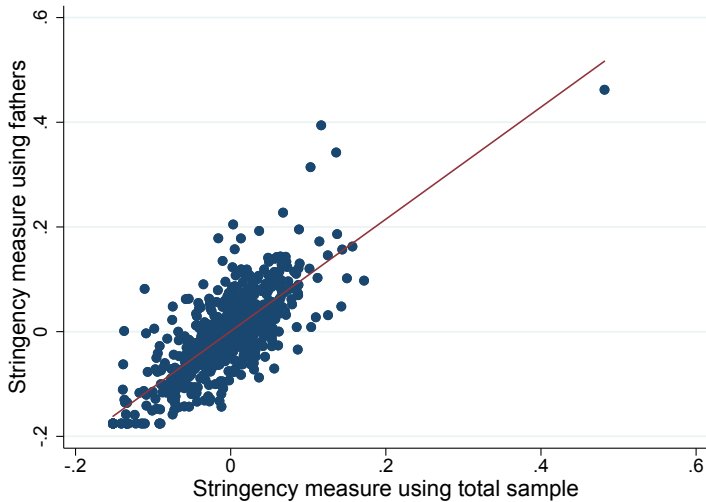
Estimate	0.563	0.489
(se)	(0.0986)	(0.099)
Observations	43298	45138

Other crimes

Estimate	0.398	0.422
(se)	(0.099)	(0.100)
Observations	24074	25351

[Main](#)

Monotonicity (Fathers)



Main

Placebo check

- Balance checks can be convincing
- Only as good as the observable variables you have in your data
- In Nordic countries, there are rich controls, but there still might be unobservables
- Thus, we also collected data on placebo outcomes as an additional test for IV validity
- We compare OLS versus IV impact of incarceration on birth outcomes

Placebo check

	OLS (1)	IV (3)
Fines: Child birth weight	21.4*** (2.82)	18.50 (44.59)
Prison: Child birth weight	-73.58*** (7.91)	-174.5 (90.22)
Dependent mean	3415.6	3415.6
Controls	No	No
<i>N</i>	174,982	174,982

Main