



UNIVERSITY OF
BIRMINGHAM



1

ESRC IMPACT ACCELERATION WORKSHOP AROUND
ALTERNATIVES TO CUSTODY WITH SPECIAL REFERENCE TO
VIOLENT CRIME

20 APRIL 2016

Broad Purpose

2

- What deters crime: detection, punishment, scope of rehabilitation?
- ‘When do alternatives to prison work and for whom’ (in the spirit of the ‘what works agenda’ but tries to understand mechanisms behind what works).
- Specifically:
 1. To understand the impact of non-custodial alternatives on different crime categories and age groups
 2. Get a deeper understanding of the determinants of violence (links to a second strand of work with Sofia Amaral).

Today

3

- Our talk is a quantitative analysis of the impact of various types of case disposals on crime
- Looks at how variations across different types of custodial and non-custodial sentences affect adult and youth crime
- Looks at both count data and conviction rates across different categories (today's talk focuses on conviction rates)

Background

4

- Purpose behind prison has been manifold but deterrence, rehabilitation and incapacitation are possibly the most important
- Controversy exists around effectiveness of both custody and its alternatives
- This controversy in supposed outcomes mirrors the ideological debate being played out across the left and right ends of the spectrum
- Each side in the debate extrapolates from studies that seem to bolster their argument
- Our analysis takes a first step towards isolating the impact of prisons as well as non-custodial alternatives
- The analysis will not answer the question of whether alternatives to custody are effective (including cost effective) but we can compare how custody fares compared to non-custody at current levels of 'quality'
- We find both prisons and community sentences have mixed effectiveness

Recap (past related work)

5

- Han, Bandyopadhyay and Bhattacharya (2013) look at the role of law enforcement, socioeconomic variables and persistence in crime and finds detection has a crime lowering effect and past crime rates have strong explanatory power
- Bandyopadhyay, Bhattacharya and Sensarma (2015) look at whether the determinants of crime differ across high and low crime areas
- Bandyopadhyay, Bhattacharya, Koli and Sensarma (2012) show that short sentences can be counterproductive for certain categories while beyond a point increases in sentence do reduce crime.
- Mechanisms for short sentences increasing crime (rather than being just ineffective) revolve around the role prison plays in a criminal pathway as well as insufficient deterrence
- Longer sentences work both via deterrence and incapacitation
- Relative effectiveness should compare this with non custodial alternatives which is our current project (Abramovaite, Bandyopadhyay, Bhattacharya and Cowen)

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6

**EFFECTS OF CASE DISPOSALS ON
VIOLENT CRIME ON JUVENILES
AND ADULTS**

By Juste Abramovaite, Siddhartha Bandyopadhyay, Samrat Bhattacharya and
Nick Cowen

The Outline

7

- Introduction and Research Questions
- Custodial vs. Non-custodial Sentences
- Data
- Methodology
- Results
- Conclusions

Research Questions

8

- What is more effective – Custodial or Non Custodial sentences? [various ways to measure ‘effectiveness’, our preliminary analysis will focus on crime reduction]
- Should we use different sentences on juveniles and adults?

Custodial vs. Non-custodial Sentences?

9

- **Definition:**

Custodial	Non-custodial
<ul style="list-style-type: none">• Immediate custodial sentences (determinate and indeterminate)• Suspended sentences	<ul style="list-style-type: none">• Fines• community service• conditional discharge• absolute discharge

Custodial vs. Non-custodial Sentences?

10

- Heavy use of custodial sentences led to steady increases in annual prison population over the years:



Custodial vs. Non-custodial Sentences?

11

Prison Costs:

- In the UK the annual average cost for each prison place is £36,237 and cost per prisoner is £33,785 (for 2013-14)*
- Prison population stood at almost 85 thousand

* Taken from *Costs per place and costs per prisoner*, National Offender Management Service, Annual Report and Accounts 2013-14, Management Information Addendum, Ministry of Justice, Information Release, Published 28 October 2014

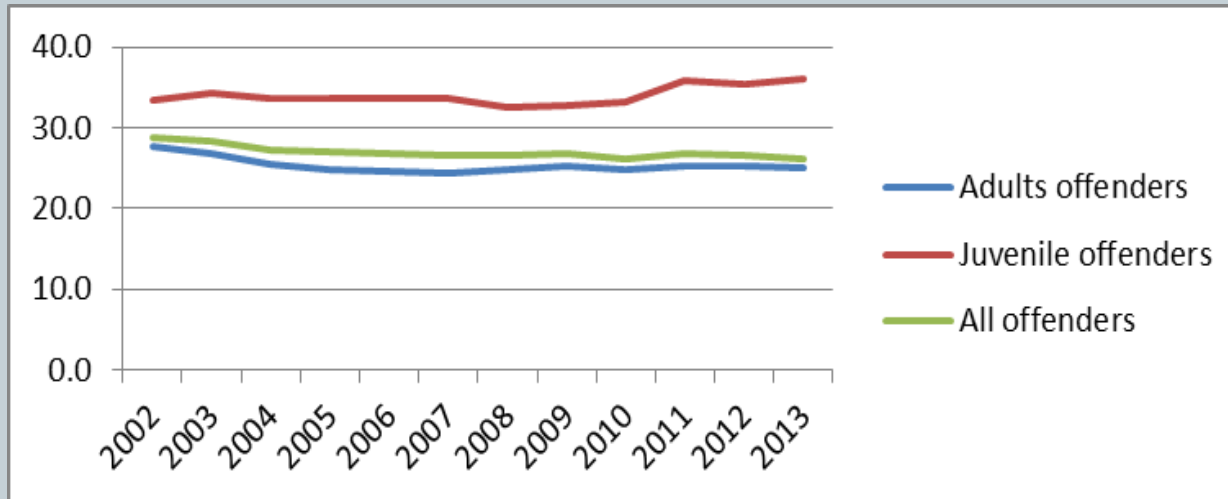
Custodial vs. Non-custodial Sentences?

12

- Prisons being expensive is one reason to analyse its effectiveness, another would be its deterrence and incapacitation value (leaving aside its dehumanizing effect)
- Proven reoffending statistics (where offenders were proven to commit a re-offence within 12 months):
 - While around 91% of all offenders are adults and 9% are juveniles, reoffending rates are very different:
 - ✦ around 25% for adults
 - ✦ around 35% for juveniles

Custodial vs. Non Custodial Sentences?

13



Data taken from Ministry of Justice, Proven Reoffending Statistics, published in 2015

Expense of custodial sentencing and recidivism rates rising for young offenders

Custodial vs. Non-custodial Sentences?

14

- As a result, non-custodial sentences such as Community Service are being proposed as ‘better’ alternatives to harsh prison sentences:
 - Mills (2011) indicates that the Criminal Justice Act 2003 (implemented in 2005) has been the most far reaching community sentence reform, its main aim being to provide credible community alternatives to custodial sentences of less than 12 months
 - Government states that it costs around £2,800 to administer a community sentence, though it provides no indication as to its effectiveness

Custodial vs. Non-custodial Sentences?

15

Public debate:

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Convicts spared jail attack 50 people every day: Thousands serving community sentences commit violent and sexual crimes

- 18,000 convicts reoffend within 12 months after avoiding a jail sentence
- Offenders set to be handed 28 hour community service punishment instead of being put behind bars

By JAMES SLACK FOR THE DAILY MAIL
UPDATED: 13:37, 30 December 2011

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Fifty people a day suffer a violent or sexual attack by a convict spared jail in the 'soft' justice system. Victims include young children assaulted by paedophiles, figures released by the Government show.

They reveal that every year more than 18,000 convicts given a community punishment commit a sexual or violent crime within 12 months of being sentenced.

Had they been sent to jail, the offences – which could range from rape to common assault – need never have taken place.

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Criminals 'laughing' at community sentences which have failed to cut prison population

By MATTHEW HICKLEY
UPDATED: 23:27, 2 March 2009

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Criminals given community punishments instead of jail terms are 'laughing their heads off' at their soft punishments, a report warned today.

Ministers have claimed that 'tough' community orders introduced in 2005 are a serious alternative to prison – and not simply a cheap way of attempting to ease prison overcrowding.

But researchers found offenders were 'relieved' to be let off with community punishments, while probation staff complained that criminals 'give two fingers to the Probation Service'.



Data

16

- Detailed data set – for each Police Force Area (PFA) in England and Wales (43 in total) from 2002 to 2013:
 - How many crimes were committed (for violence against the person, robbery, sexual offences and property crime)
 - Dependent variable is **Crime Rate per 100,000 people** for all three violent crime types

Data

17

- Also, we retrieved data from the Ministry of Justice through a Freedom of Information request asking how many sentences have been issued for those crime types in each year in each criminal justice area
 - Sentences issued include – prison sentences, suspended sentences, fines, absolute discharge, conditional discharge, community service

Data

18

- Since we have a number of sentences given to young criminals and adults separately, we sum up sentencing into four categories:
 - custodial sentences for adults
 - non-custodial sentences for adults
 - custodial sentences for juvenile
 - non-custodial sentences for juvenile.

Data

19

- **Adult Custodial** represents a total number of adults who got sentenced with an immediate custody
- **Adult Non-Custodial** represents a total number of adults who got absolute discharge, conditional discharge, fines, community service, were otherwise dealt with, also, we include suspended sentence in this category – it classifies as a custodial but since it does not result in custody, we include it in our Non Custodial count
- **Youth Custodial** represents a total number of juveniles who got sentenced with an immediate custody
- **Youth Non-Custodial** represents a total number of juveniles who got absolute discharge, conditional discharge, fines, community service or were otherwise dealt with

Data

20

- Also, we control for:
 - **unemployment** which is defined as a ratio of the number of unemployment benefit claimants to the total number of people in the workforce. We have unemployment figures for each PFA for all years.
 - **average weekly earnings** for individuals working in each PFA for a given year
 - **population density** which is defined as the population per square kilometre, we have population density data for each PFA for all years in our dataset

Methodology

21

- Model 1:
- The model we want to test is specified as follows:

$$\mathbf{CrimeRate}_{i,t} = \beta_1 \mathbf{AdultConvictionCS}_{i,t-1} + \beta_2 \mathbf{AdultConvictionCust}_{i,t-1} + \beta_3 \mathbf{JuvenileConvictionCS}_{i,t-1} + \beta_4 \mathbf{JuvenileConvictionCust}_{i,t-1} + \beta_5 \mathbf{AverageWeeklyEarnings}_{i,t} + \beta_6 \mathbf{Unemployment}_{i,t} + \sigma_i + \mu_t + \varepsilon_{i,t}$$

- where i represents the cross-section unit of observation, t represents time, σ_i is the unknown intercept for each PFA, μ_t represents year fixed effects which are needed to account for PFA specific year changes, and $\varepsilon_{i,t}$ is the error term. *AdultConvictionCS* stands for Conviction rate for adults who got a community sentence as a punishment, *AdultConvictionCust* - Conviction rate for adults who got custody as a sentence, *JuvenileConvictionCS* - conviction rate for juvenile who got a community sentence as a punishment and *JuvenileConvictionCust* - conviction rate for juvenile who got custody as a sentence.

Methodology

22

- The model is in logs so the coefficients have an elasticity interpretation, i.e. a 1% change in each variable will result in a β_i *change in crime*
- This allows for a more intuitive interpretation of results
- Conviction rates are lagged by one year

Results – Violence Against the Person

23

Variable Names	VATP - Model 1		VATP - Model 2	
	Coeff	t-stat	Coeff	t-stat
Adult_Community Sentence	-0.11	-1.45	-0.1	-1.39
Adult_Custody	-0.41***	-4.27	-0.40***	-4.13
Adult_Conditional Discharge	0.21	1.42		
Adult_Suspended Sentence				
Adult_Fine			0.11	0.74
Juvenile_Community Sentence	-0.01	-0.09	-0.01	-0.05
Juvenile_Custody	-0.07	-0.38	-0.08	-0.45
Juvenile_Conditional Discharge				
Juvenile_Fine				
Unempl	Y		Y	
Income	Y		Y	
PFA FE	Y		Y	
Year Dummies	Y		Y	
Robust Standard Error	Y		Y	
R-square (Within)	0.707		0.705	
Number of Observations	462		462	

Results – Violence Against the Person

24

- Punishing juvenile with custody has no statistically significant effect
- Non custody sentences don't either in this specification
- Adult custodial conviction rates matter **today's crime rate 0.4 per cent lower for a 1 per cent increase in custody rates yesterday**
- Note: *, ** and *** indicate 10%, 5% and 1% level of significance

Results - Robbery

25

Variable Names	Robbery	
	Coeff	t-stat
Adult_Community Sentence	-0.01	-0.18
Adult_Custody	-0.21***	-4.04
Adult_Conditional Discharge		
Adult_Suspended Sentence		
Adult_Fine		
Juvenile_Community Sentence	-0.02	-0.69
Juvenile_Custody	-0.02	-1.02
Juvenile_Conditional Discharge		
Juvenile_Fine		
Unempl	Y	
Income	Y	
PFA FE	Y	
Year Dummies	Y	
Robust Standard Error	Y	
R-square (Within)	0.74	
Number of Observations	462	

Results - Robbery

26

- Juvenile disposals seem to have no impact
- Adults, however, show **of one per cent in custodial sentences one year ago leads to 0.2 per cent decrease in crime this year**
- Note: *, ** and *** indicate 10%, 5% and 1% level of significance

Results – Sex Offences

27

Variable Names	Sexual Offenses - Model 1		Sexual Offenses - Model 2	
	Coeff	t-stat	Coeff	t-stat
Adult_Community Sentence	-0.03	-0.9	-0.04	-1.11
Adult_Custody	-0.15***	-3.1	-0.16***	-3.26
Adult_Conditional Discharge	-0.07*	-1.62		
Adult_Suspended Sentence				
Adult_Fine			0.03	0.79
Juvenile_Community Sentence	-0.04	-1.3	-0.05	-1.55
Juvenile_Custody	0.06	0.74	0.05	0.61
Juvenile_Conditional Discharge				
Juvenile_Fine				
Unempl	Y		Y	
Income	Y		Y	
PFA FE	Y		Y	
Year Dummies	Y		Y	
Robust Standard Error	Y		Y	
R-square (Within)	0.38		0.38	
Number of Observations	462		462	

Results – Sex Offences

28

- Youth crime continues to show no impact of conviction rates
- When it comes to adults, custodial sentences continues to show some effect
- Conditional discharges also matter, probably a deterrence effect in this case or impact of treatment
- Note: *,** and *** indicate 10%, 5% and 1% level of significance

Results - Property

29

Variable Names	Property - Model 1		Property - Model 2	
	Coeff	t-stat	Coeff	t-stat
Adult_Community Sentence	-0.19***	-2.99	-0.19***	-3
Adult_Custody	-0.26***	-3.1	-0.27***	-3.32
Adult_Conditional Discharge	-0.01	-0.29	0	0.01
Adult_Suspended Sentence	0.04	0.43		
Adult_Fine	0.06	0.74	0.05	0.61
Juvenile_Community Sentence	-0.07	0.99	-0.09	-1.15
Juvenile_Custody	-0.14	-0.4	-0.18	-0.52
Juvenile_Conditional Discharge	0.01	0.05	-0.09	-0.43
Juvenile_Fine	-0.74**	-2.17		
Unempl	Y		Y	
Income	Y		Y	
PFA FE	Y		Y	
Year Dummies	Y		Y	
Robust Standard Error	Y		Y	
R-square (Within)	0.95		0.95	
Number of Observations	462		462	

Results for Property

30

- Adult custody rates and community sentences both matter
- **Thus, non-custodial alternatives matter for property crime**
- This is particularly striking as co-efficient indicates that the crime lowering effect is close to custody
- Given that non-custodial alternatives cost a fraction of custody, one needs to take a serious look at using such alternatives for sentencing in property crime
- Note: *, ** and *** indicate 10%, 5% and 1% level of significance

Cost effectiveness of custody vs community

31

- It is worth illustrating the cost effectiveness of custody vs non custody for property crime
- If a 1% increase in custody lowers crime by 0.26% and non-custody by 0.19%, that implies 1.25% increase in non-custody will have the same crime lowering impact as custody
- While one will need to know actual costs of increasing custody rates vs community sentencing rates, our understanding is custody will certainly cost far more
- Hence it should be possible to demonstrate an economic case for community sentences for property crime.

Illustrative impact on recorded crime

32

Offence type	Violence against the person	Robbery	Sexual Offences
How many more if 1 per cent more sentenced to custody	158	48	39
Estimated number of additional offences prevented	2,667	118	102

Estimated impact of sentencing 1 per cent more offenders to custody in 2013 on number of recorded crimes in 2014

Illustrative impact on recorded crime

33

Property crime (Theft offences and criminal damage)	Community sentence	Custodial sentence
How many more if 1 per cent more sentenced	333	437
Estimated number of additional offences prevented	3,453	4,362

Estimated impact of sentencing 1 per cent more offenders to each sentence type in 2013 on number of recorded crimes in 2014

Conclusions

34

- Custody rates lower crime though one cannot untangle deterrence vs incapacitation
- Conditional discharge helps lower sexual offending, we suspect that this may be due to deterrence
- Community sentences seem a cost effective alternative for property crime
- Nothing seems to work for juvenile crime though it could partly be a data issue
- Very little is known about the 'quality' of community sentences
- One needs to understand issues around reverse causality that may affect these results (as well as general quantitative work in this area)

Conclusions

35

- **Further research:**
 - interdisciplinary approach trying to understand the motives of criminals better
 - Robustness checks for different classifications of custodial and non custodial sentences, maybe just one type of sentence (for example, community service) has any significant effect rather than all non custodial sentences
 - Closer attention to the ‘quality’ of non custodial sentence in rehabilitation and ways to make prison work better

References

36

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- S. Bandyopadhyay, S. Bhattacharya and R.Sensarma, 2015 Crime in England and Wales: A Quantile Regression Analysis, *Economics Bulletin* 35 (1), A 71
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