

Online Appendix to: Tough on Young Offenders: Harmful or Helpful?

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A.1 Other Robustness Checks

Alternative Estimation Methods---- I now consider whether results are stable across alternative estimation methods: I find that they hold also when the analysis is carried out through a parametric approach up to a second-order polynomial (Table A9). In the even columns of Table A9, I also add control variables as a further check: gender, sentence length, ethnicity, plea, proceedings, month of birth, type of offence¹ and age at which the offender committed the first offence. Columns (1)-(4) refer to the 1963 cohort, while columns (5)-(8) refer to the 1975 cohort. Estimated coefficients tend to appear slightly smaller in size when control variables are included, but they are not significantly different from the coefficients estimated without control variables.² In Table A10, I show the different local average treatment effects by offence type, estimated through a parametric approach: effects go in the same direction as through the non-parametric. The same is found in the 1963-68 comparison.

¹ If the offender committed multiple offences when sentenced at 20/21, I consider the category of the most serious offence (i.e. the offence for which she was given the hardest penalty).

² When I impose a first-degree polynomial equation to estimate the 1975 cohort's reoffending, the magnitude of the treatment effects resembles the local linear regression estimates, but the estimated coefficients are not always significantly different from zero. A second-degree polynomial estimation gives more significant results, and all results point in the same direction throughout the analysis.

Sample Selection---- I also want to mitigate lingering concerns on the possibility that results for the cohorts born in 1963 and 1968 might be driven by the sample extraction. The sample in the Offenders Index Cohort database for England and Wales was constructed in order to be representative of the full cohorts. It is a common strategy in cohort studies in the UK to identify a particular period from which to select cohort members. For example, the National Child Development Study selected children born in a particular week in 1958. The longer period of three-four weeks used in the Offenders Index Cohort Database was necessary to ensure a sufficient sample size. As a further robustness check, I want to show that the sample selected is indeed representative of the full cohort. I proceed in two ways.

First, the PNC offers me the chance to look at the offenders born in 1963 and 1968 who offended again after 1995. This is a sample selected on an outcome (re-offending after 1995), so it cannot be used for an evaluation of different custody treatments experienced by the cohorts, but it still can offer some indication of the presence or absence of significant differences between offenders born in the selected weeks chosen for the Offenders Index Cohort database and the full cohort as it appears in the PNC. Table A11 shows that most of the pre-treatment variables of offenders born in selected weeks in 1963 and 1968 (columns 2 and 6) are not significantly different from variables in the full sample (columns 1 and 5), and that when there are significant differences, the magnitude of these differences is very small.

Second, I explore whether characteristics available from the 2011 census for England and Wales differ by individuals' month of birth for the cohorts born in 1963 and 1968. Data on labour characteristics was provided by the Office of National Statistics. In Table A12, I show the averages of labour market indicators in the full cohort and averages for individuals born in selected months

(March, June, September or December, as the months chosen to build the Offenders Data Index Cohort sample). While most of the differences in labour market indicators between individuals born in selected months and the full sample are not significantly different from zero, the few significant differences are extremely small in magnitude (all below 0.5%). Altogether, Tables A11-A12 suggest that individuals selected by a specific time of birth are representative of the full cohort.

Early Release---- In Section III, I analysed the future felonies of the 1963 cohort over the next eight years, even though over this time some offenders are not free from confinement but kept in custody. If the time spent incapacitated by offenders in youth custody/detention centres and offenders in prisons were different, the main results I presented would be biased, as the number of free people facing the choice of committing (or not) new offences would be disproportionate. To address this concern, I have already shown that the best available proxy for time spent in custody, sentence length, is balanced. That is, the time that offenders are sentenced to spend in custody is not significantly different between the two groups, and consequently, should not affect the estimates. However, even though the sentence length is balanced, the actual time spent incapacitated might not be, if some offenders are granted parole and released earlier than others. I do not have any information on the actual time spent incapacitated, but to the best of my knowledge, the right to parole was not different for offenders above or below 21 years old.³ To

³ For the 1963 and 1968 cohorts, release on licence (parole) could be granted to an offender serving a sentence of imprisonment, other than imprisonment for life, who had served not less than one-third of his/her sentence or six months, whichever expired the later, or even more, as the Secretary of State may by order have provided (CJA 1967, CJA 1982). Hence, while the rules on early release were not different for 20 or 21 years old offenders, the exact ending of custody was at discretion of the Secretary of State. The 1991 CJA (in effect 1st October 1992) changed the rules on early release and made them less discretionary, but once again, they did not differ for 20 and 21 years old offenders (CJA, 1991).

mitigate this concern further, I re-conduct the analysis by looking at the offences committed only in a time window where I can observe all the offenders outside of custody, independently of parole. For this, I measure reoffending from the expiration of the sentence rather than from conviction. For the 1963 cohort, this restricted time window in which I observe offenders is four years⁴, two years for the 1968 cohort⁵. I can observe the 1975 cohort up to fifteen years after, but for this exercise I will limit the time window to four years to make it comparable to the 1963 cohort and show that results are in line.⁶

As I can see in Table A13, local average treatment effects for offenders born in 1963 and 1975 are consistent with what is found over the eight-year period after conviction: offenders born in 1963 at the margin of the age cut-off and being exposed to prisons rather than to youth custody/detention centres commit 2.12 fewer offences in the four years following release (-2.96 in eight years after conviction); they are 41.9 percent less likely to commit offences (-27 percent in eight years); and they appear in court more than once less (-1.54 in eight years). As before, for the 1975 cohort, I find opposite results: offenders at the margin of the age cut-off and being exposed

⁴ As explained in the data section, the time window for the 1963 cohort is four years because once I exclude two offenders who have been given a sentence of 60 months, the longest sentence I have in the sample is 48 months, i.e. four years. This means that offenders born at the latest in the sample (i.e. in December 1963) and who are sentenced to prison when age 21 (i.e. at the latest December 1985, some days before their 22nd birthday) for the maximum time (i.e. four years from December 1985) will be out of custody in December 1989 and I will observe them until December 1993.

⁵ The time window is two years maximum, if I limit the sample to offenders who are assigned maximum one year in custody. This follows from the fact that offenders born at the latest in the sample (i.e. in December 1968) and who are sentenced to prison until they are still 21 (i.e. at the latest December 1990, some days before their 22nd birthday) for one year (i.e. one year from December 1990) will be out of custody in December 1991, and I will observe them until December 1993, that is, for two years.

⁶ For the 1975 cohort, the time window where I can observe offenders is fifteen years after release, as, after excluding offenders assigned to custody for life, the maximum offence assigned to an offender at 20/21 in the sample is five years.

to prisons commit 1.12 offences more in the four years following release (1.88 in eight years after conviction), they receive 0.7 sentences more to prison (1.25 in eight years) and they go back to court 0.34 times more⁷ (0.7 in eight years). Reoffending for cohorts born in 1963 and 1968 also follows the same pattern when analysed for two years after release only (Table A14). However, as the time span is much limited, the magnitude of the effects is smaller, and results are not significantly different from zero for either cohort. Overall, results are in line with what is found when looking at reoffending since the time of conviction.

Full Sample of Offenders born in 1963---- Let us remember that in the analysis of the 1963 cohort I excluded offenders who committed their first offence when younger than 14. I proceeded this way because the age at which offenders committed their first offence was the only unbalanced covariate between treatment and control groups: young offenders who went to youth custody/detention centres were more likely to have committed their first offence when they were younger than their counterparts. I now re-conduct the analysis for the 1963 cohort with the full sample of offenders, including those who committed their first crime before turning 14 years old. The full sample includes 707 offenders in total. As I might have expected, the magnitude of the treatment effects in the full sample is slightly greater than in the main analysis (Table A15): young offenders at the margin of the age cut-off and experiencing a tougher punishment commit on average 4 offences more (2.96 in the original sample); they are brought to court 1.98 times more (1.54 in the original sample); they are sentenced to prison 1.81 times more (1.06 in the original sample); and they are 25 percent more likely to re-offend in the future (26.5 percent in the original sample). All of the treatment effects found are significantly different from zero and remain so even when the bandwidth around the threshold is reduced.

⁷Times to court becomes significantly different from zero only closer to the cut-off.

Age Crime Profiles---- Because the identifying assumption is that offenders about to turn 21 are comparable to offenders who just turned 21, I need to consider the relationship between engaging in criminal activities and age, as crime commission seems to peak in the mid to late teens and then decline (Quetelet, 1831; Hansen, 1993; Bell et al., 2015). A decrease in the propensity to offend after a specific age threshold implies that individuals who decide to commit a crime when older may be different from younger offenders (e.g. offenders who commit a crime when older may be pushed by other factors such as lower self-control, more difficult labour market conditions, etc.). If so, comparing offenders who engaged in illegal activities at different stages of their lives could give biased results.

To reduce this potential bias, I restricted the sample to offenders who are no more than one year older/younger than 21 throughout the entire analysis. Moreover, for the first cohort of offenders the harsher treatment affects the younger, while for the second and third cohorts it is the softer treatment that affects the younger. Hence, if the difference in the propensity to commit a crime between the older and younger offenders does not change across time, the bias introduced in the estimates for the three quasi-experiments should be the same, and the direction of the treatment effects would be reliable. On the contrary, if the age-crime curve changes over time the estimates for the two cohorts might be biased in a different way, affecting the conclusions.

While Hirschi and Gottfredson (1983) claimed that the age-crime curve is invariant over different times, places, crime types, sexes, and so on (Farrington, 1983), subsequent research argued instead that age-crime profiles change in time (Hansen, 2003; Ulmer and Steffensmeier, 2014). Even though changes in the age-crime profiles can occur, it takes time for them to happen. For example, “in the United States, total arrests for all offenses in 1980 peaked at age 18; in 1933, at 19. Seemingly, there was little change in half a century. [...] A comparison of the age

distribution of criminality in contemporary England with that in the 1840s shows a major shift in modal age: in 1842-44 (before summary jurisdiction acts began to divert juvenile offenders from the regular criminal courts), the rate of involvement peaked at ages 20-25; in 1968, at 14-17” (Greenberg, 1985). For such a major shift to take place in England, 125 years were necessary. The second and third cohorts analysed in the paper were born 5 and 12 years after the first, respectively: even if the modal age could have changed, it is reasonable to think that it would not change by much, and the same reasoning would apply to the entire age distribution. Indeed, when I consider not only the sample analysed in the paper, but the full cohorts of offenders born in selected weeks of 1963 and 1968, and I examine the number of court appearances by age for the types of crimes where I find a significant effect (Figures A2-A3), I observe a similar trend: when offenders turn 21, they are less likely to commit a crime, appear in court, and the same holds true for thefts, violent offences, and burglaries/robberies. Only the number of court appearances by age for criminal damage is not very smoothly distributed, and its trend temporarily reverses when offenders from the second cohort turn 21. Overall, offenders from both cohorts are more likely to offend when 20 rather than 21. The age at which the offenders commit an offence could be correlated to being more prone to offend. But, given that the tougher treatment is given to offenders who are 20 first and then to offenders who are 21 and that in both cases the ones exposed to the tougher regime become more likely to offend in the future, treatment effects do not seem to be driven by whether offenders were 20 or 21 when sent to custody. I do not have the data to show the crime-age curves for the 1975 cohort, but I do not have any reason to believe that they would be different from what was shown for the full cohorts born in 1963 and 1968.

Non-compliers---- The assignment mechanism to penal institutions is not perfectly respected, which means that some offenders who should be sentenced to prison will be held in youth custody/detention centres/young offender institutions, and vice versa. Who are the non-complier offenders assigned to the incorrect treatment? By calculating the means of the available variables (exact age at court appearance, gender, ethnicity, month of birth, offence type, sentence length, plea) for compliers and non-compliers, I explore which characteristics correlate to the incorrect assignment. Overall, non-compliers are few and quite similar to compliers in observable characteristics.

Among the 249 offenders born in 1963 and 20 years old at the court appearance date, 19 (6.03 percent) are wrongly assigned to adult prisons but do not show any significant difference in observables with respect to offenders assigned to the legitimate treatment. Among the 309 offenders aged 21, 13 (5.35 percent) are wrongly assigned to youth custody/detention centres.

Among the 229 offenders born in 1968 and aged 20 at the court appearance date, 6 (2.62 percent) are wrongly assigned to adult prisons. Among the 217 offenders aged 21, 8 (3.69 percent) are wrongly assigned to young offender institutions.

Among the 2,764 offenders born in 1975 and aged 20 at the court appearance date, 557 were wrongly assigned to adult prisons (20.15 percent). Among the 2,676 offenders who appeared at court when 21, 77 (2.88 percent) were wrongly assigned to YOIs.

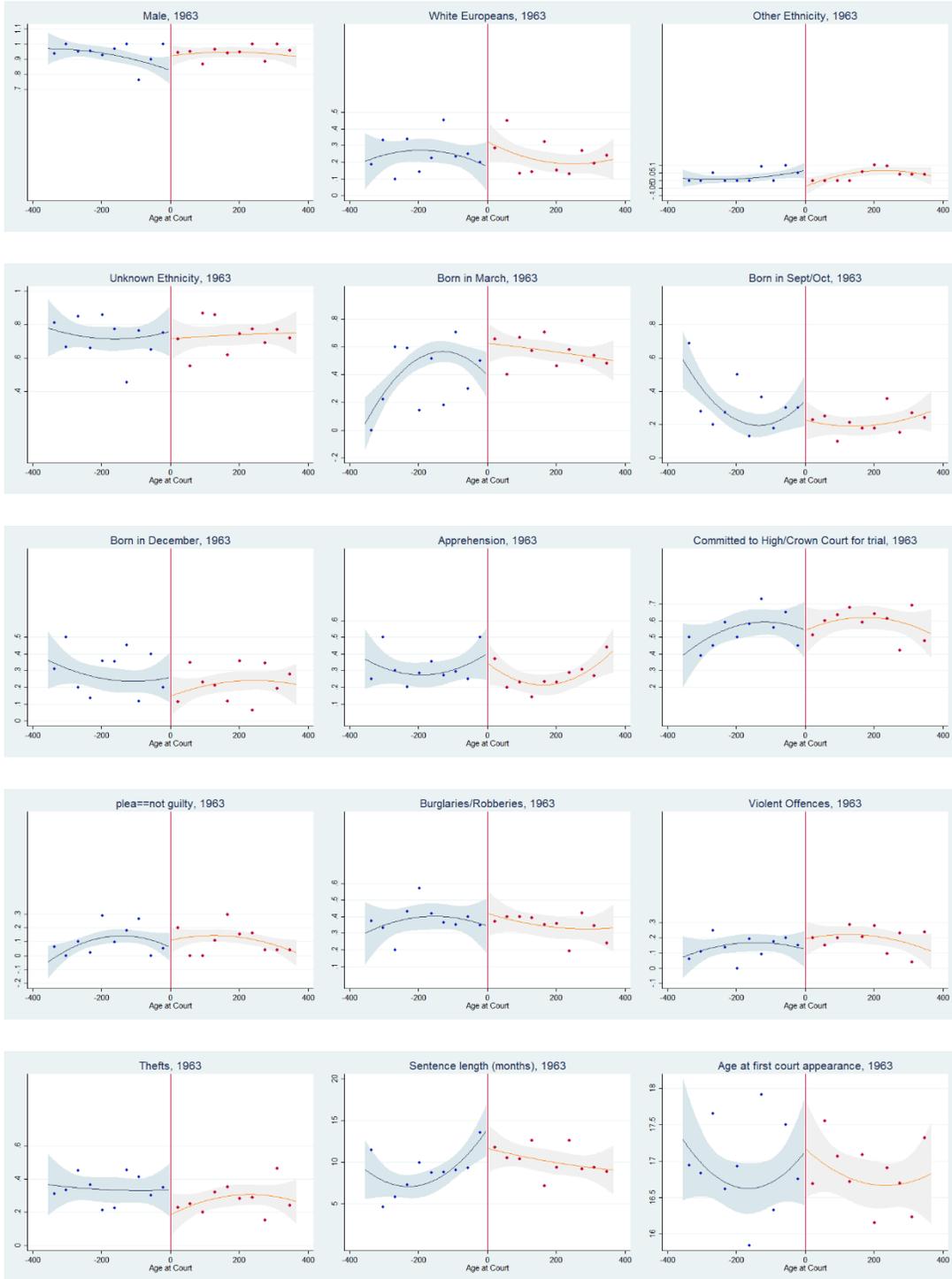
To check if compliers differ from non-compliers in some characteristics, I estimate a linear probability model with the full set of control variables, where the dependent variable is being assigned to the wrong treatment (Table A19). Overall, I do not find systematic differences between compliers and non-compliers.

A.2 Differences between 1963 and 1968 cohorts

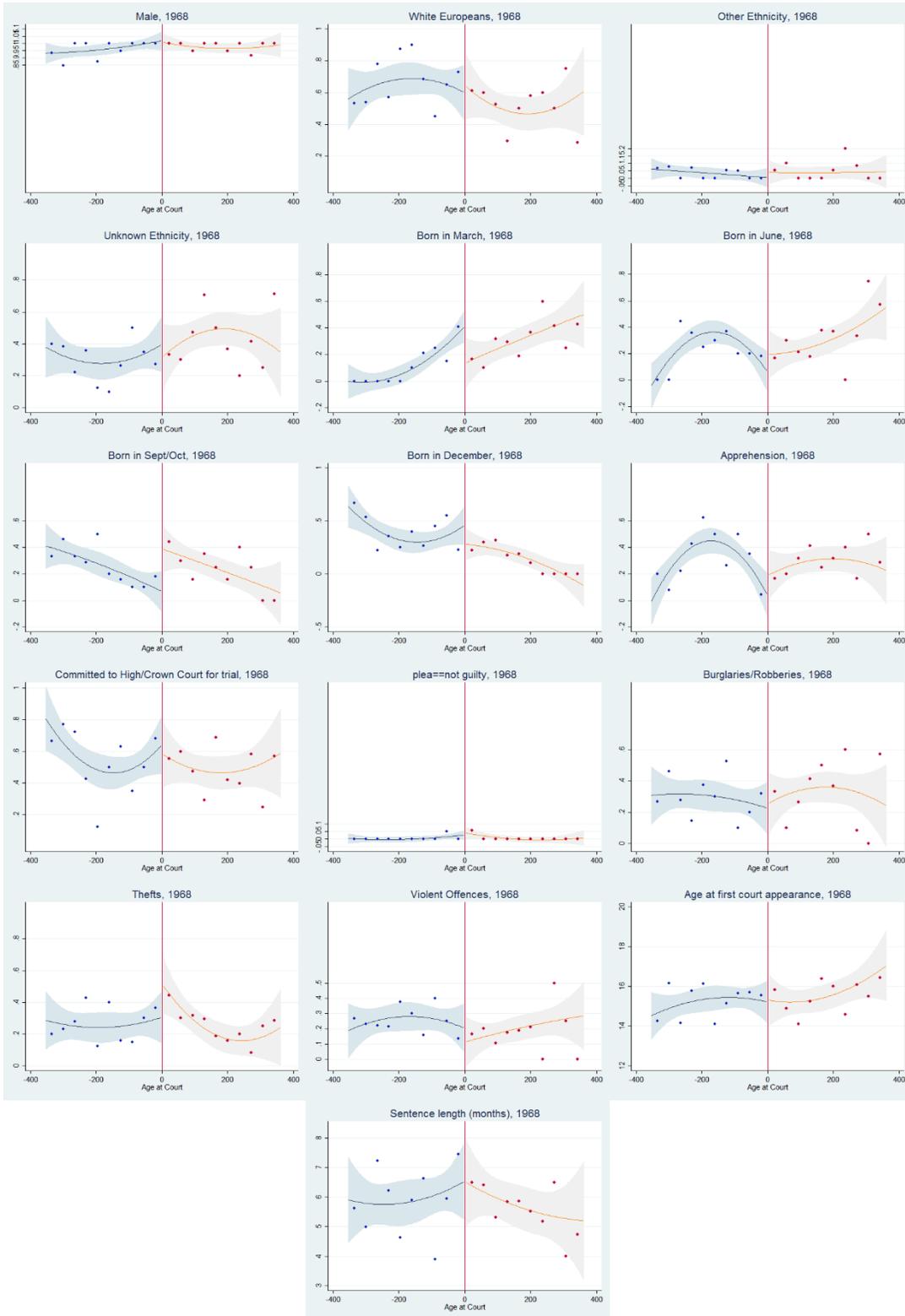
I have already shown that young offenders at the margin of turning 20 and young offenders who just turned 20 are not different in observable characteristics. This is true within each experiment (Table A8, Figure A1). I now investigate whether observable characteristics, like types of offences, differ at the 20/21 cut-off across experiments. I run this exercise only for the 1963 and 1968 cohorts, since offences for the 1975 cohort are recorded differently by the Police National Computer. To examine whether the type of offence committed changes at the 21-year threshold across experiments, I first compare young offenders born in 1963 at the margin of the age cut-off and experiencing custody in youth facilities, and young offenders born in 1968 at the margin of the age cut-off and being sent to prison. I do not limit the sample to offenders with precise characteristics (e.g. offenders with sentence up to three years), but I consider the full sample of offenders. For this first comparison, I have 579 offenders: of them, 348 were born in 1963 and were sentenced to custody at 20; 231 were born in 1968 and were sentenced to custody at 21. Second, I compare young offenders born in 1968 at the margin of the age cut-off and experiencing youth facilities, and young offenders born in 1963 at the margin of the age cut-off and being sent to prison. For this second comparison, I have 596 offenders: of them, 237 were born in 1963 and were sentenced to custody at 20; 359 were born in 1968 and were sentenced to custody at 21. As shown in Table A20, local linear regression estimates of the types of offences committed across the 21-year cut-off, are not significantly different across experiments. The results further reinforce the validity of the analysis.

FIGURE A1. PRE-TREATMENT VARIABLES (20 BINS)

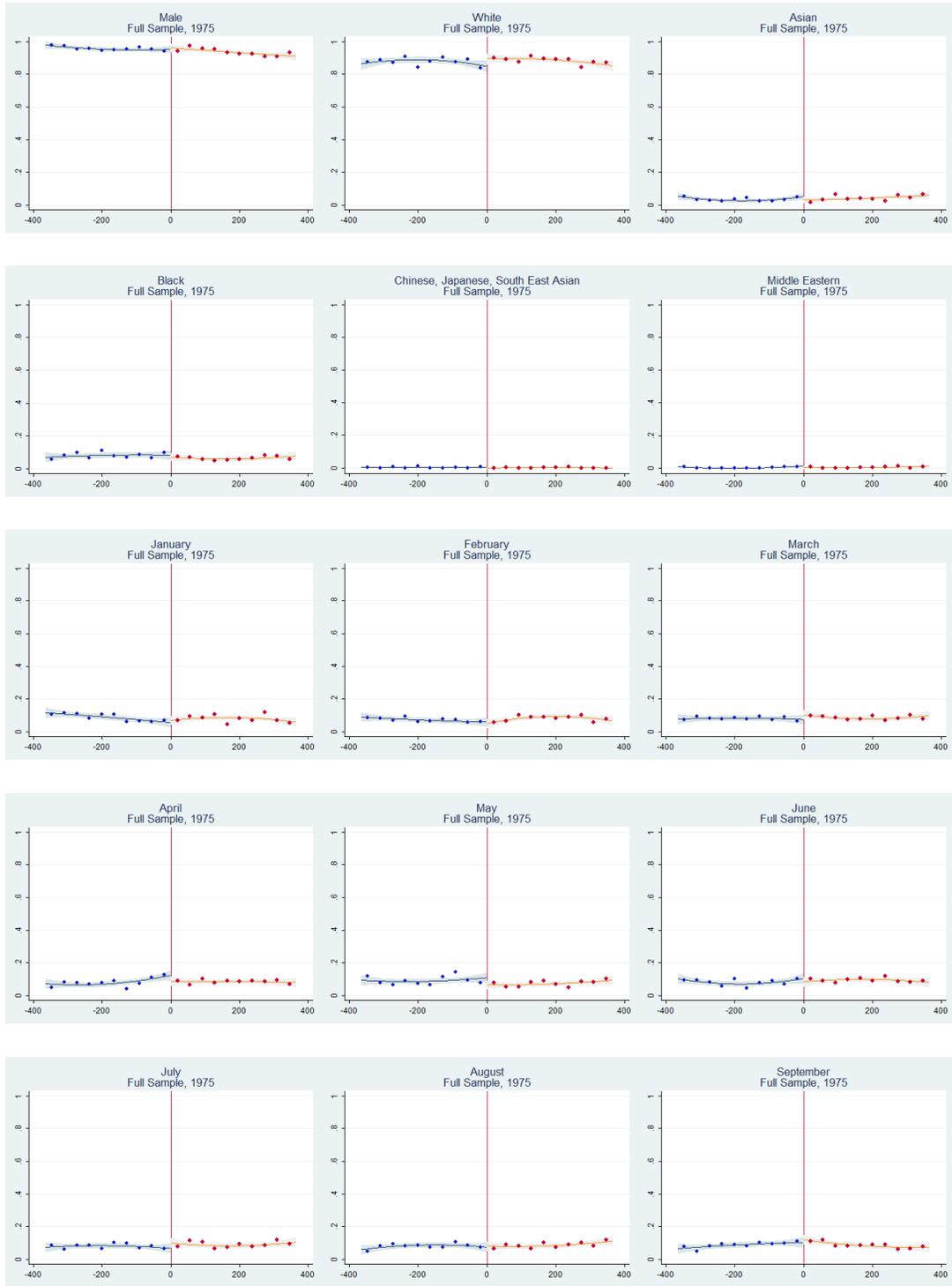
Panel A – 1963 cohort

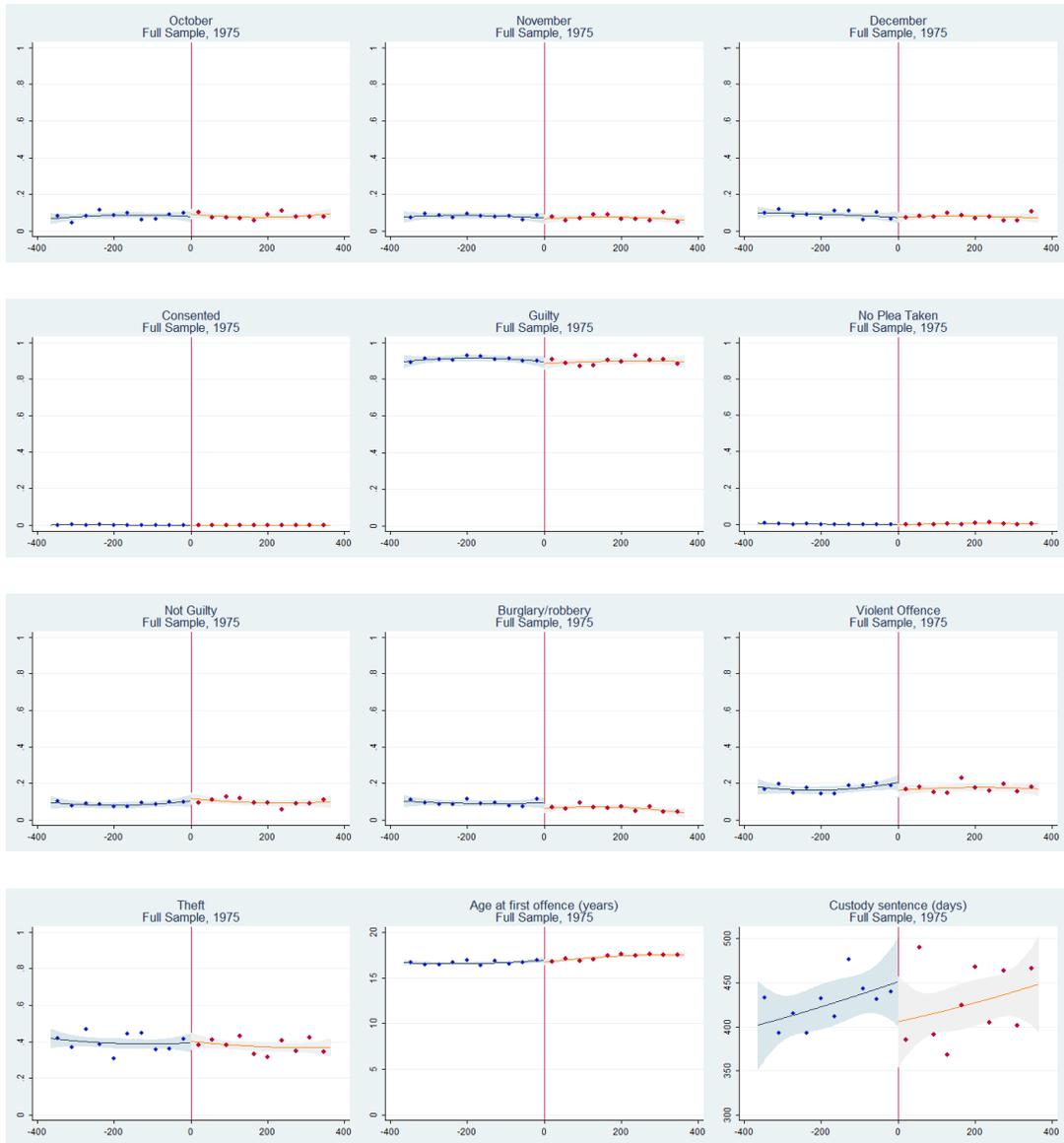


Panel B – 1968 cohort



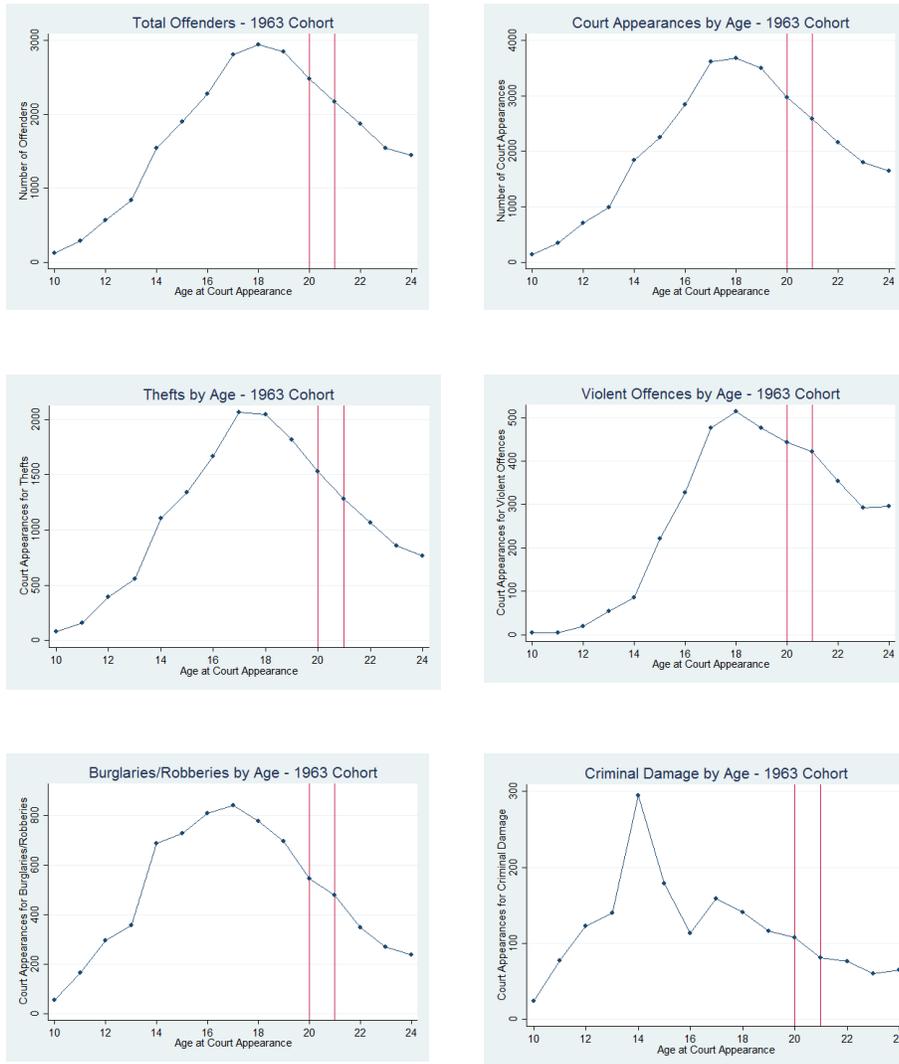
Panel C – 1975 cohort





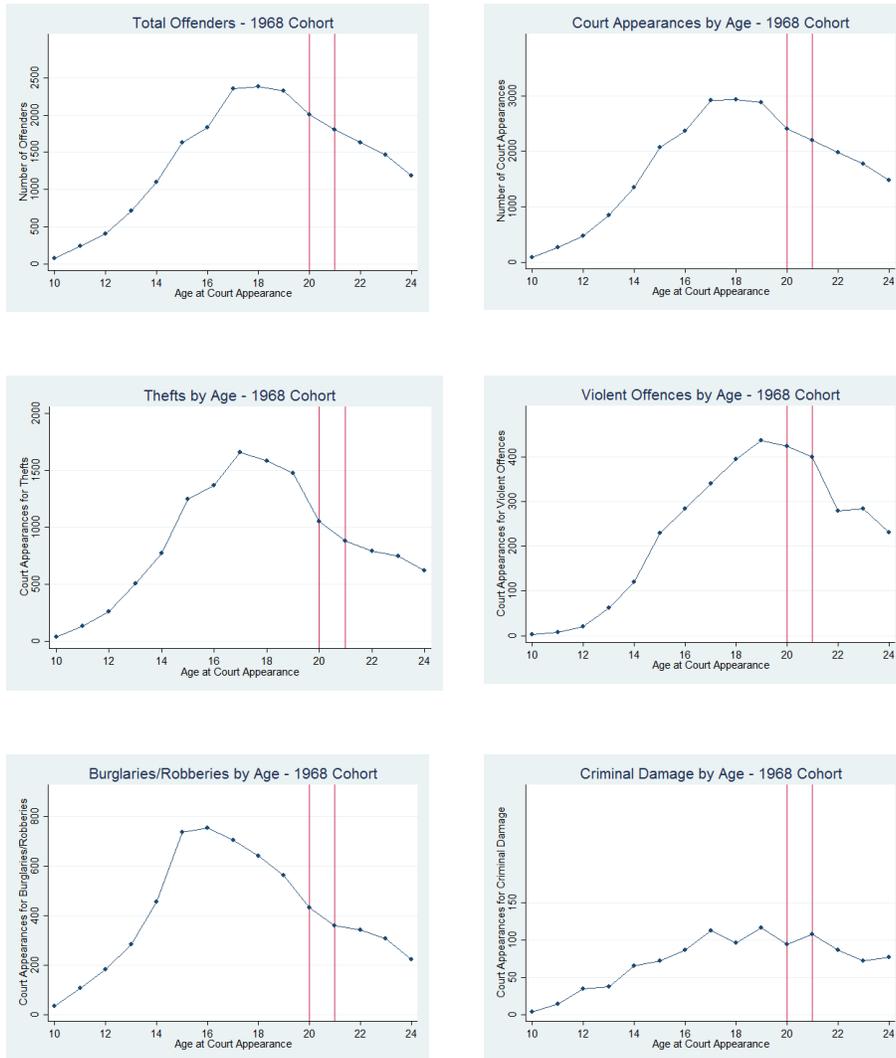
Notes: The figures above refer to the three samples from the 1963 (Panel A) and 1968 (Panel B) cohorts of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate), and the 1975 cohort from the Police National Computer (Ministry of Justice, PNC/Criminal Histories Team Justice Statistics Analytical Services). On the x axis lies the variable age at court appearance, centred at 0 when age at court appearance is 21. Age at court appearance is positive (negative) when young offenders are older (younger) than 21. On the y axis there are the shares of pre-treatment characteristics: gender, month of birth, ethnicity, age at first court appearance, sentence length, proceedings type, plea and type of offence committed when 20/21 years old. The coloured areas represent the 90% confidence intervals around the separate lines of quadratic best fit plotted on the left- and right-hand side of the cut-off. Bins are 20 evenly spaced bins of equal length but different number of observations.

FIGURE A2. CRIME-AGE CURVE BY OFFENCE TYPE IN 1963 COHORT



Notes: The figures above refer to the full 1963 cohorts of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate). On the y axis there is the number of court appearances by type of offence. On the x axis lies the variable age at court appearance.

FIGURE A3. CRIME-AGE CURVE BY OFFENCE TYPE IN 1968 COHORT



Notes: The figures above refer to the full 1968 cohorts of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate). On the y axis there is the number of court appearances by type of offence. On the x axis lies the variable age at court appearance.

TABLE A1. ANNUAL AVERAGE POPULATION IN PRISON DEPARTMENT ESTABLISHMENTS & CERTIFIED NORMAL ACCOMMODATION (CNA) ON 30 JUNE BY TYPE OF ESTABLISHMENT IN ENGLAND & WALES, 1983-1985

Type of Establishment	1983		1984		1985	
	Average Pop.	CNA	Average Pop.	CNA	Average Pop.	CNA
Local Prisons	15,801	10,864	15,219	10,934	16,512	10,949
Open Prisons	3,104	3,246	2,971	3,281	3,194	3,406
Closed Training Prisons	12,368	11,690	12,096	11,821	13,050	12,669
Open Youth Custody Centres	1,425	1,557	1,390	1,613	1,351	1,496
Closed Youth Custody Centres	5,066	5,280	5,244	5,297	5,488	5,375
Senior Detention Centres	1,144	1,550	943	1,459	968	1,341

Notes: The table reports the annual average population in the prison department establishments relevant to the paper and their certified normal accommodation (CNA) on 30th of June in England and Wales in 1983-1985.

Source: Home Office Statistical bulletin, The Prison Population in 1986.

TABLE A2. ANNUAL AVERAGE POPULATION IN PRISON DEPARTMENT ESTABLISHMENTS & CERTIFIED NORMAL ACCOMMODATION (CNA) ON 30 JUNE BY TYPE OF ESTABLISHMENT IN ENGLAND & WALES, 1988-1990

Type of Establishment	1988		1989		1990	
	Average Pop.	CNA	Average Pop.	CNA	Average Pop.	CNA
Local Prisons	17,298	11,237	17,354	12,347	15,551	11,460
Open Prisons	3,141	3,312	3,252	3,700	3,187	3,496
Closed Training Prisons	15,525	16,090	16,543	17,086	16,651	17,073
Juvenile Young Offender Institutions	293	502	330	409	285	398
Short Sentence Young Offender Institutions	438	694	340	570	296	448
Other Open Young Offender Institutions	1,174	1,472	976	1,456	877	1,312
Other Closed Young Offender Institutions	5,102	5,361	4,863	5,191	4,232	4,711

Notes: The table reports the annual average population in the prison department establishments relevant to the paper and their certified normal accommodation (CNA) on 30th of June in England and Wales in 1988-1990. Young offender institutions were established in October 1988, hence their CNA in 1988 is measured on the 30th of December.

Source: Home Office Statistical bulletin, The Prison Population in 1992.

TABLE A3. ANNUAL AVERAGE POPULATION IN PRISON DEPARTMENT ESTABLISHMENTS & CERTIFIED NORMAL ACCOMMODATION (CNA) ON 30 JUNE BY TYPE OF ESTABLISHMENT IN ENGLAND & WALES, 1995-1997

Type Of Establishment	1995		1996		1997	
	Average Pop.	CNA	Average Pop.	CNA	Average Pop.	CNA
Local Prisons	18,484	16,041	19,672	16,359	21,849	17,549
Open Prisons	3,240	3,682	3,576	3,834	3,853	4,068
Closed Training Prisons	19,436	20,314	20,953	21,929	22,308	22,007
Juvenile Young Offender Institutions	1,013	842	1,360	1,088	1,433	1,202
Open Young Offender Institutions	339	450	377	552	423	548
Closed Young Offender Institutions	3,776	3,858	3,964	4,145	4,546	4,508

Notes: The table reports the annual average population in the prison department establishments relevant to the paper and their certified normal accommodation (CNA) on 30th of June in England and Wales in 1995-1997.

Source: Home Office, Prison Statistics England and Wales 2000.

TABLE A4. MONITORED ACTIVITIES OFFERED BY FUNCTIONAL GROUPS OF ESTABLISHMENTS, % OF GROUP OFFERING EACH ACTIVITY IN 1991/2

	Male Local (no London)	Male Dispersal	Male B Trainer (no London)	Male C Trainer	Male D Trainer	Female Local/Remand	Female Trainer	Closed YOI	Open YOI	Male Remand (no London)	London
Daytime Education	100	100	100	85	100	100	100	92	100	100	100
VT Courses	6	75	80	70	57	25	67	75	75	-	-
CIT Courses	18	50	80	70	71	25	-	75	100	-	-
Works Party	94	75	80	100	100	75	67	75	100	10	83
PSIF Workshops	88	100	80	92	86	75	33	58	25	10	67
Farms Party	12	-	40	54	71	25	33	33	50	-	-
Gardens Party	82	100	80	77	86	75	67	75	100	10	67
Kitchens	94	100	100	92	100	75	67	75	100	20	67
Other Domestic	100	100	100	100	100	100	100	100	100	100	100
Induction	29	75	100	77	86	25	67	75	100	30	-
Other (Specify)	88	50	100	92	86	75	100	83	75	70	33
All Other	88	100	100	92	100	75	67	92	100	30	83
PE	100	100	100	92	100	100	100	100	100	100	100
Evening Education	94	100	100	100	86	100	100	83	100	30	100
Chaplaincy	100	100	100	92	100	100	100	92	100	90	100

Notes: The table reports the percentage of functional groups of establishments offering each set of monitored activities in 1991/2. VT and CIT courses are generally courses of bricklaying, plumbing, electrical installation, painting and decorating, motor mechanics, etc. *Work parties* are groups that help the establishments to operate. *Prison Service Industries and Farms (PSIF)* are workshops ranging from sewing mailbags to highly technical (engineering/construction) work. *Gardens Party* and *Kitchens* "have a dual function in most establishments in that they serve both the institution and the inmate by offering training within the networking environment" (Her Majesty's Chief Inspector of Prisons for England and Wales, 1993). *Other domestic* activities indicate other work activities such as cleaning. *Induction* is "the process by which inmates are introduced to the establishment's routines, rules and, in most cases, opportunities" (Her Majesty's Chief Inspector of Prisons for England and Wales, 1993). *Other (specify)* activities are generally "parties, groups or individuals who are trusted to help prison staff run various parts of the establishment" (Her Majesty's Chief Inspector of Prisons for England and Wales, 1993). *All Other* occupations are pre-release courses. *PE* is physical education. *Source:* Her Majesty's Chief Inspector of Prisons for England and Wales (1993), *Doing Time or Using Time, Report of a Review of Regimes in Prison Service Establishments in England and Wales*, London HMSO.

TABLE A5. AVERAGE HOURS OF EDUCATION IN PRISON ESTABLISHMENTS, BY TYPE OF ESTABLISHMENTS IN 1997/9

	Average hours of education and skills training per prisoner per week		
	1997	1998	1999 ⁽³⁾
<i>Adult establishments^{1,2}:</i>			
Local Prisons	2.11	2.56	4.09
Open Training (Cat D)	5.73	5.27	7.64
Closed Training (Cat C)	5.51	5.21	7.04
Closed Training (Cat B)	3.98	3.95	5.18
Closed Training (Dispersal)	4.05	3.82	5.58
<i>Young offender establishments²:</i>			
Open YOI	11.35	12.80	18.80
Closed YOI	6.46	6.31	8.31

(1) Establishments have been categorised according to their main role only. Establishments that have more than one role have been placed in the category that represents the primary function of the prison.

(2) Male offenders only.

(3) From April 2000, includes any work activities containing an educational element.

Source: Home Office, 2000b. *Prison Statistics England and Wales 1999*. London: The Stationery Office.

TABLE A6. EFFECTS OF ADULTS' PRISON VS. YOUTH FACILITIES (IN TWENTY YEARS AFTER CONVICTION)

Independent Variable: Adults' Prison			
	1975		
	<i>Harsher treatment</i>		
	365 days	274 days	183 days
	(1)	(2)	(3)
Likelihood to reoffend	0.051* (0.030)	0.064* (0.035)	0.043 (0.043)
Offences	1.969** (0.852)	2.296** (0.980)	2.587** (1.197)
Times to court	1.520** (0.756)	1.947** (0.239)	2.237** (1.077)
Sentences to prison	1.969** (0.852)	2.296** (0.980)	2.587** (1.197)
Observations	5,440	4,110	2,767

Notes: the table reports the effects of experiencing prison rather than young offender institutions for the 1975 cohort of the Police National Computer (Ministry of Justice, PNC/Criminal Histories Team Justice Statistics Analytical Services) over the next twenty years. The estimation is conducted through a local linear regression constructed with a triangular kernel regression. Each set of rows corresponds to a different outcome variable: the likelihood to reoffend (a dummy equal to 1 if the offender commits at least 1 offence in the future time window), the number of offences the offender commits, the times he/she is brought to court and the times he/she is sentenced to prison again. Each column corresponds to a different bandwidth selection: in columns (1) and (4) the bandwidth is 365 days; in columns (2) and (5) the bandwidth is 274 days; in columns (3) and (6) it is 183 days. Robust standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01.

TABLE A7. EFFECTS OF ADULTS' PRISON VS. FACILITIES (IN THE NEXT THREE YEARS)

Independent Variable: Adults' Prison						
	1963			1968		
	<i>Softer treatment</i>			<i>Harsher treatment</i>		
	365 days	274 days	183 days	365 days	274 days	183 days
	(1)	(2)	(3)	(4)	(5)	(6)
Likelihood to reoffend	-0.470*** (0.113)	-0.538*** (0.129)	-0.558*** (0.170)	0.039 (0.111)	0.064 (0.133)	0.112 (0.172)
Offences	-1.267** (0.630)	-1.331* (0.686)	-1.386 (0.905)	1.099 (1.181)	1.011 (1.292)	0.793 (1.419)
Times to court	-0.856*** (0.296)	-0.957*** (0.332)	-0.919** (0.455)	0.232 (0.372)	0.217 (0.426)	0.145 (0.517)
Sentences to prison	-0.165 (0.446)	-0.197 (0.496)	-0.184 (0.657)	1.831*** (0.611)	1.937*** (0.688)	1.973** (0.864)
Observations	547	448	283	446	367	259

Notes: The table reports the effects of experiencing prison rather than youth custody/detention centres for the 1963 cohort (columns 1-3) and the effects of experiencing prison rather than young offender institutions for the 1968 cohort (columns 4-6) of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate). Both samples are limited to offenders who were given a sentence shorter than three years at 20/21. The time window over which the outcome variables are observed is three years following conviction. Each set of rows corresponds to a different outcome variable: the likelihood to reoffend (a dummy equal to 1 if the offender commits at least 1 offence in the future time window), the number of offences the offender commits, the times he/she is brought to court and the times he/she is sentenced to prison again. The estimation is conducted through a local linear regression constructed with a triangular kernel regression. Each column corresponds to a different bandwidth selection: in columns (1) and (4) the bandwidth is 365 days; in columns (2) and (5) it is 274 days; in columns (3) and (6) it is 183 days. Robust standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01.

TABLE A8. BALANCING TESTS OF PRE-DETERMINED COVARIATES

	1963	1968	1975		1963	1968	1975
	(1)	(2)	(3)		(1)	(2)	(3)
Male	0.115*	-0.003	0.028	Born in	-	-	0.008
	(0.060)	(0.018)	(0.018)	October			(0.022)
White [†]	0.117	-0.210*	0.04	Born in	-	-	-0.007
	(0.097)	(0.121)	(0.026)	November			(0.021)
Afro-Caribbean and other Ethnicity	-0.085**	0.047	-	Born in	-0.093	-0.185*	-0.014
	(0.038)	(0.041)		December	(0.099)	(0.108)	(0.021)
Unknown Ethnicity	-0.032	0.163	-	Apprehension	-0.006	0.020	-
	(0.101)	(0.125)			(0.108)	(0.086)	
Black	-	-	-0.024	High/Crown	-0.078	0.072	-
			(0.021)	Court for trial	(0.116)	(0.108)	
Middle Eastern	-	-	-0.011	Plea: not	0.013	0.004	0.008
			(0.007)	guilty	(0.061)	(0.031)	(0.024)
Oriental	-	-	-0.009	Sentence	-1.432	2.150	-27.564
			(0.015)	length ^{††}	(2.980)	(2.065)	(39.640)
China, Japan, South East Asia	-	-	-0.002	Age at first	0.215	-0.547	-0.074
			(0.003)	offence	(0.505)	(0.719)	(0.214)
Born in January	-	-	0.032	Burglaries/ Robberies	0.041	-0.547	-0.019
			(0.021)		(0.109)	(0.719)	(0.021)
Born in February	-	-	-0.001	Thefts	-0.071	0.128	0.009
			(0.020)		(0.105)	(0.116)	(0.038)
Born in March	0.125	-0.120	0.051*	Violent	0.006	0.040	-0.020
	(0.126)	(0.098)	(0.031)	Offences	(0.089)	(0.110)	(0.030)
Born in April	-	-	-0.028	Sexual	0.013	-0.046	-0.010
			(0.024)	Offences	(0.032)	(0.094)	(0.007)
Born in May	-	-	-0.052**	Minor	0.000	0.043	0.011
			(0.021)	Offences	(0.036)	(0.036)	(0.012)
Born in June	-	-	-0.006	Frauds	-0.013	-0.050	0.004
			(0.023)		(0.057)	(0.048)	(0.010)
Born in July	-	-	0.027	Criminal	0.027	-0.039	-0.017
			(0.021)	Damage	(0.017)	(0.031)	(0.025)
Born in August	-	-	-0.013	Drug Offences	-0.059	-0.031	-0.019
			(0.021)		(0.040)	(0.026)	(0.021)
Born in September	-	-	0.021	Motoring	0.004	-0.019	-
			(0.024)	Offences	(0.023)	(0.040)	
Born in Sept/Oct	-0.032	0.264**	-0.045	Other	0.053	-0.042	0.043
	(0.110)	(0.107)	(0.162)	Offences	(0.037)	(0.028)	(0.031)
Observations	558	446	5,440		558	446	5,440

Notes: The table reports the estimated discontinuities on pre-treatment characteristics of offenders who experienced youth custody/detention centres/young offender institutions and of offenders who experienced prison for the 1963 cohort (column 1), the 1968 cohort (column 2) and the 1975 cohort (column 3). Data for the 1963 and 1968 cohorts comes from the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate). The 1963 sample includes offenders who committed their first offence when older than 14. The 1968 sample is restricted to offenders who were given a sentence shorter than three years at 20/21. Data for the 1975 cohort comes from the Police National Computer (Ministry of Justice). Each row corresponds to a different pre-treatment variable. The estimation is conducted through a local linear regression with a triangular kernel regression with a bandwidth selection of 365 days. Robust standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01. [†] White is White European for the 1963 and 1968 cohorts. ^{††} Sentence length is in months.

TABLE A9. EFFECTS OF ADULTS' PRISON VS. YOUTH CUSTODY/DETENTION CENTRES (IN THE NEXT EIGHT YEARS) - PARAMETRIC APPROACH

Independent Variable: Adults' Prison								
	1963				1975			
	<i>Softer treatment</i>				<i>Harsher treatment</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Likelihood to reoffend	-0.248** (0.100)	-0.190** (0.088)	-0.260* (0.146)	-0.220* (0.128)	0.023 (0.030)	0.003 (0.027)	0.066 (0.046)	0.020 (0.042)
Offences	-2.573** (1.228)	-2.264* (1.196)	-2.451 (1.560)	-2.117 (1.527)	1.210* (0.715)	0.988 (0.669)	2.949*** (1.064)	2.286** (1.005)
Times to court	-1.280** (0.579)	-1.210** (0.551)	-1.437* (0.801)	-1.371* (0.763)	0.493 (0.311)	0.381 (0.288)	1.119** (0.473)	0.774* (0.438)
Sentences to prison	-0.640 (0.741)	-0.536 (0.756)	-1.509 (0.944)	-1.405 (0.961)	0.945** (0.430)	0.838** (0.407)	1.723*** (0.643)	1.372** (0.614)
Age at Court	X	X	X	X	X	X	X	X
Age*prison	X	X	X	X	X	X	X	X
Age ² *prison			X	X			X	X
Age at Court ²			X	X			X	X
Controls		X		X		X		X
Observations	558	557	558	557	5,440	5,352	5,440	5,352

Notes: Columns (1)-(4) report the effects of experiencing prison rather than youth custody/detention centres for the 1963 cohort of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate) over the next eight years. Columns (5)-(8) report the effects of experiencing prison rather than young offender institutions for the 1975 cohort of the Police National Computer (Ministry of Justice, PNC/Criminal Histories Team Justice Statistics Analytical Services) over the next eight years. The 1963 sample includes offenders who were sentenced to either youth custody/detention centres or adults' prisons when being age 20/21 at the date of court appearance and who committed their first offence when older than 14. The estimation is conducted through a parametric approach using a polynomial up to the second order. I also allow the treatment to have a different impact before and after the cut-off by including an interaction of the centred variable and the treatment variable (age at court*prison). Robust Standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01. The control variables in the even columns include gender, sentence length, ethnicity, plea, proceedings, month of birth, type of offence, age at which the offender committed the first offence.

TABLE A10. EFFECTS OF ADULTS' PRISON VS. YOUTH CUSTODY/DETENTION CENTRES (IN THE NEXT EIGHT YEARS) BY OFFENCE TYPE - PARAMETRIC

Independent Variable: Adults' Prison								
	1963				1975			
	<i>Softer treatment</i>				<i>Harsher treatment</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Thefts	-0.573 (0.580)	-0.373 (0.579)	-0.991 (0.663)	-0.818 (0.671)	0.626 (0.469)	0.524 (0.445)	1.470** (0.697)	1.140* (0.668)
Violent offences	-0.793*** (0.281)	-0.880*** (0.289)	-0.748 (0.463)	-0.850* (0.474)	0.063 (0.066)	0.044 (0.064)	0.159 (0.101)	0.119 (0.099)
Sexual offences	-0.016 (0.053)	-0.031 (0.059)	-0.029 (0.054)	-0.032 (0.060)	-0.003 (0.018)	-0.001 (0.018)	0.012 (0.025)	0.014 (0.025)
Burglary/robbery	-0.220 (0.306)	-0.171 (0.308)	-0.392 (0.351)	-0.321 (0.357)	-0.043 (0.036)	-0.038 (0.036)	-0.067 (0.060)	-0.065 (0.060)
Minor offences	-0.428 (0.296)	-0.426 (0.298)	-0.375 (0.500)	-0.409 (0.509)				
Fraud	-0.221 (0.245)	-0.167 (0.246)	0.337 (0.257)	0.449 (0.277)	-0.029 (0.089)	-0.025 (0.089)	0.156 (0.130)	0.150 (0.133)
Criminal damage	-0.259*** (0.089)	-0.257*** (0.095)	-0.103 (0.124)	-0.081 (0.134)	0.075* (0.044)	0.060 (0.044)	0.096 (0.069)	0.079 (0.070)
Drug offences	0.208* (0.124)	0.268** (0.129)	0.082 (0.147)	0.149 (0.155)	0.035 (0.117)	0.027 (0.116)	0.207 (0.177)	0.150 (0.177)
Motoring offences	-0.017 (0.116)	-0.031 (0.122)	-0.067 (0.111)	-0.090 (0.117)				
Other offences†	-0.339 (0.212)	-0.288 (0.218)	-0.251 (0.242)	-0.210 (0.251)	0.485** (0.219)	0.397* (0.209)	0.916*** (0.324)	0.700** (0.311)
Age at Court	X	X	X	X	X	X	X	X
Age*prison	X	X	X	X	X	X	X	X
Age ² *prison			X	X			X	X
Age at Court ²			X	X			X	X
Controls		X		X		X		X
Observations	558	557	558	557	5,440	5,352	5,440	5,352

Notes: Columns (1)-(4) report the effects of experiencing prison rather than youth custody/detention centres for the 1963 cohort of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate) over the next eight years. Columns (5)-(8) report the effects of experiencing prison rather than young offender institutions for the 1975 cohort of the Police National Computer (Ministry of Justice, PNC/Criminal Histories Team Justice Statistics Analytical Services) over the next eight years. The 1963 sample includes offenders who were sentenced to either youth custody/detention centres or adults' prisons when being age 20/21 at the date of court appearance and who committed their first offence when older than 14. The estimation is conducted through a parametric approach using a polynomial up to the second order. I also allow the treatment to have a different impact before and after the cut-off by including an interaction of the centred variable and the treatment variable (age at court*prison). Robust Standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01. The control variables in the even columns include gender, sentence length, ethnicity, plea, proceedings, month of birth, type of offence, age at which the offender committed the first offence. † Other offences include mainly: failing to surrender to bail, going equipped for stealing, and other offences against the state or public order.

TABLE A11. DIFFERENCES FULL SAMPLE AND SELECTED WEEKS (COHORTS 1963, 1968)

	1963				1968			
	Full Sample (1)	Selected Weeks (2)	Difference In Means (3)	Standard Error (4)	Full Sample (5)	Selected Weeks (6)	Difference In Means (7)	Standard Error (8)
<i>i. Offenders Characteristics</i>								
Male	0.953	0.941	0.012	0.011	0.958	0.978	-0.020**	0.010
Asian	0.017	0.010	0.007	0.007	0.023	0.016	0.007	0.007
Black	0.111	0.115	-0.004	0.018	0.087	0.070	0.018	0.014
Chinese, Japanese, South East Asian	0.000	0.006	-0.006***	0.002	0.001	0.000	0.001	0.002
Middle Eastern	0.002	0.000	0.002	0.003	0.001	0.000	0.001	0.002
White	0.870	0.869	0.000	0.020	0.888	0.915	-0.027*	0.015
Age at first offence	15.804	15.845	-0.041	0.156	15.970	15.656	0.314**	0.142
<i>i. Offence Characteristics</i>								
Custody sentence (days)	297.298	291.652	5.645	19.739	389.147	409.288	-20.141	22.720
Burglary/robbery	0.056	0.051	0.005	0.012	0.073	0.057	0.016	0.013
Theft	0.544	0.524	0.019	0.027	0.441	0.488	-0.047*	0.024
Violent Offence	0.163	0.176	-0.013	0.020	0.220	0.205	0.016	0.020
Sexual Offence	0.013	0.013	-0.001	0.006	0.018	0.017	0.001	0.007
Fraud	0.053	0.091	-0.038***	0.012	0.037	0.031	0.006	0.009
Criminal Damage	0.039	0.024	0.015	0.010	0.042	0.044	-0.002	0.010
Drug Offence	0.031	0.021	0.010	0.009	0.039	0.039	-0.000	0.009
Other Offence	0.102	0.099	0.003	0.016	0.130	0.120	0.010	0.016
Observations	5,742	374			5,294	459		

Notes. The table above shows the differences in pre-treatment variables for the full cohort of offenders born in 1963 and 1968 and the sample of offenders born in selected weeks of the same year available in the Police National Computer. Columns (1) and (5) report the averages for each pre-treatment variable in the full cohort of offenders born in 1963 and 1968, respectively. Columns (2) and (6) report the averages for each pre-treatment variable for the offenders born in selected weeks for cohorts born in 1963 and 1968, respectively. The selected weeks for the 1963 cohort are 3rd-9th March, 28th September-4th October, 17th-23rd December. The selected weeks for the 1968 cohort are 3rd-9th March, 28th September-4th October, 17th-23rd December and 19th-25th June. Columns (3) and (7) show the difference in means between offenders born in selected weeks and the full cohort, for 1963 and 1968 respectively. * p < 0.1, ** p < 0.05, *** p < 0.01. Columns (4) and (8) report the standard errors of the difference in means. Most of the plea values are missing for these cohorts. Hence, even if they were not significantly different between the groups, they are not reported in the table.

TABLE A12. DIFFERENCES CENSUS AND SELECTED MONTHS (COHORTS 1963, 1968)

Panel A. 1963 cohort

	<i>Full</i>		<i>Panel A1. March</i>		<i>Panel A2. September</i>			<i>Panel A3. December</i>		
	Full Cohort	Born in March	Diff.	Standard Error	Born in Sept.	Diff.	Standard Error	Born in Dec.	Diff.	Standard Error
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Active in the labour market	0.877	0.877	0.000	0.001	0.877	-0.001	0.001	0.876	0.000	0.001
Chief Executives	0.002	0.002	0.000	0.000	0.002	0.000	0.000	0.002	0.000	0.000
Managers and Directors	0.119	0.118	0.001	0.001	0.119	0.000	0.001	0.117	0.002*	0.001
Professionals	0.151	0.153	-0.002	0.001	0.156	-0.005***	0.002	0.155	-0.004**	0.002
Technicians	0.013	0.014	0.000	0.000	0.014	0.000	0.001	0.014	0.000	0.001
Associate professionals	0.096	0.097	-0.001	0.001	0.098	-0.002	0.001	0.096	0.000	0.001
Administrative staff	0.123	0.121	0.003**	0.001	0.121	0.002	0.001	0.123	0.000	0.001
Trade	0.120	0.124	-0.004***	0.001	0.117	0.004***	0.001	0.117	0.003**	0.001
Services	0.095	0.093	0.002**	0.001	0.097	-0.002*	0.001	0.095	0.000	0.001
Sales	0.065	0.065	0.000	0.001	0.062	0.003***	0.001	0.064	0.002	0.001
Operatives	0.085	0.085	0.001	0.001	0.085	0.001	0.001	0.086	-0.001	0.001
Elementary Workers	0.108	0.108	0.000	0.001	0.107	0.000	0.001	0.110	-0.002	0.001
Never worked	0.021	0.021	0.000	0.001	0.022	-0.001**	0.001	0.022	-0.001*	0.001

Notes: The table above shows the averages of labour market indicators from the 2011 of the Census for England and Wales provided by the Office of National Statistics. Panel A: Column (1) shows the averages for all individuals born in 1963. Columns (2), (5) and (8) show the averages of selected labour market indicators for individuals born in March, September, and December, respectively. Columns (3), (6), and (9) show the difference between the averages of individuals the full cohort and those born in March, September, and December, respectively: * p < 0.1, ** p < 0.05, *** p < 0.01. Columns (4), (7) and (10) show the standard errors of the difference in means.

Panel B. 1968 cohort

	<i>Full</i>	<i>Panel B1. March</i>			<i>Panel B2. September</i>			<i>Panel B3. September</i>			<i>Panel B4. December</i>		
	Full Cohort	Born in March	Diff.	Stand. Error	Born in June	Diff.	Stand. Error	Born in Sept.	Diff.	Stand. Error	Born in Dec.	Diff.	Stand. Error
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Active in the labour market	0.874	0.874	0.000	0.001	0.874	0.000	0.001	0.875	-0.001	0.001	0.872	0.002	0.001
Chief Executives	0.002	0.002	0.000	0.000	0.001	0.000*	0.000	0.001	0.000	0.000	0.002	0.000	0.000
Managers and Directors	0.118	0.121	-0.003**	0.001	0.117	0.002	0.001	0.120	-0.002	0.001	0.117	0.002	0.001
Professionals	0.154	0.156	-0.001	0.002	0.153	0.001	0.002	0.159	-0.005***	0.002	0.156	-0.001	0.002
Technicians	0.014	0.014	0.000	0.001	0.014	0.001	0.001	0.015	0.000	0.001	0.015	-0.001	0.001
Associate professionals	0.106	0.108	-0.002	0.001	0.104	0.002*	0.001	0.107	-0.001	0.001	0.105	0.001	0.001
Administrative staff	0.120	0.123	-0.003**	0.001	0.118	0.003*	0.001	0.121	-0.001	0.001	0.118	0.002	0.001
Trade	0.115	0.115	0.000	0.001	0.119	-0.004***	0.001	0.112	0.004**	0.001	0.116	-0.001	0.001
Services	0.096	0.094	0.002	0.001	0.098	-0.002	0.001	0.095	0.001	0.001	0.097	-0.001	0.001
Sales	0.065	0.065	0.000	0.001	0.066	-0.001	0.001	0.063	0.002	0.001	0.065	0.000	0.001
Operatives	0.080	0.079	0.002	0.001	0.080	0.000	0.001	0.078	0.002	0.001	0.080	0.000	0.001
Elementary Workers	0.105	0.101	0.003***	0.001	0.105	0.000	0.001	0.102	0.002*	0.001	0.104	0.000	0.001
Never worked	0.024	0.023	0.001*	0.001	0.025	-0.001	0.001	0.025	-0.001	0.001	0.025	-0.001*	0.001

Notes: The table above shows the averages of labour market indicators from the 2011 of the Census for England and Wales provided by the Office of National Statistics. Panel B: Column (1) shows the averages for all individuals born in 1968. Columns (2), (5), (8) and (11) show the averages of selected labour market indicators for individuals born in March, June, September, and December, respectively. Columns (3), (6), (9) and (12) show the difference between the averages of individuals the full cohort and those born in March, June, September, and December, respectively: * p < 0.1, ** p < 0.05, *** p < 0.01. Columns (4), (7), (10) and (13) show the standard errors of the difference in means.

TABLE A13. EFFECTS OF ADULTS' PRISON VS. YOUTH FACILITIES (IN THE FOUR YEARS AFTER RELEASE)

Independent Variable: Adults' Prison						
	1963			1975		
	<i>Softer treatment</i>			<i>Harsher treatment</i>		
	365 days (1)	274 days (2)	183 days (3)	365 days (4)	274 days (5)	183 days (6)
Likelihood to reoffend	-0.419*** (0.108)	-0.450*** (0.123)	-0.421** (0.166)	0.044 (0.036)	0.049 (0.042)	0.017 (0.051)
Offences	-2.120** (0.854)	-2.038** (0.932)	-1.613 (1.210)	1.124** (0.493)	1.444*** (0.555)	1.563** (0.648)
Times to court	-1.136*** (0.384)	-1.131*** (0.436)	-0.895 (0.603)	0.338 (0.209)	0.464* (0.239)	0.483* (0.288)
Sentences to prison	-0.564 (0.548)	-0.518 (0.592)	-0.121 (0.738)	0.696** (0.300)	0.748** (0.339)	0.725* (0.400)
Observations	558	457	288	5,440	4,110	2,767

Notes: Columns (1)-(3) report the effects of experiencing prison rather than youth custody/detention centres for the 1963 cohort of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate) over the four years after release. The 1963 sample includes offenders who committed their first offence when older than 14. Columns (4)-(6) report the effects of experiencing prison rather than young offender institutions for the 1975 cohort of the Police National Computer (Ministry of Justice, PNC/Criminal Histories Team Justice Statistics Analytical Services) over the four years after release. The estimation is conducted through a local linear regression constructed with a triangular kernel regression. Each set of rows corresponds to a different outcome variable: the likelihood to reoffend (a dummy equal to 1 if the offender commits at least 1 offence in the future time window), the number of offences the offender commits, the times he/she is brought to court and the times he/she is sentenced to prison again. The estimation is conducted through a local linear regression constructed with a triangular kernel regression. Each column corresponds to a different bandwidth selection: in columns (1) and (4) the bandwidth is 365 days; in columns (2) and (5) the bandwidth is 274 days; in column (3) and (6) it is 183 days. Robust standard errors are reported in parentheses: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A14. EFFECTS OF ADULTS' PRISON VS. YOUTH CUSTODY/DETENTION CENTRES & VS. YOUNG OFFENDER INSTITUTIONS (IN THE TWO YEARS AFTER RELEASE)

Independent Variable: Adults' Prison						
	1963			1968		
	<i>Softer treatment</i>			<i>Harsher treatment</i>		
	365 days	274 days	183 days	365 days	274 days	183 days
	(1)	(2)	(3)	(4)	(5)	(6)
Likelihood to reoffend	-0.421*** (0.145)	-0.445*** (0.169)	-0.350 (0.232)	0.184 (0.142)	0.213 (0.174)	0.259 (0.240)
Offences	-1.166* (0.664)	-0.994 (0.766)	-0.797 (1.064)	1.462 (0.957)	1.462 (1.117)	1.108 (1.468)
Times to court	-0.507 (0.333)	-0.486 (0.398)	-0.318 (0.580)	0.425 (0.329)	0.485 (0.393)	0.450 (0.528)
Sentences to prison	-0.593 (0.392)	-0.518 (0.458)	-0.451 (0.653)	0.979 (0.655)	1.063 (0.787)	1.147 (1.103)
Observations	445	364	228	326	266	182

Notes: The table reports the effects of experiencing prison rather than youth custody/detention centres for the 1963 cohort (Panel A) and the effects of experiencing prison rather than young offender institutions for the 1968 cohort (Panel B) of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate). Both samples are limited to offenders who were given a sentence shorter than one year at 20/21. The time window over which the outcome variables are observed is two years following release. Each set of rows corresponds to a different outcome variable: the likelihood to reoffend (a dummy equal to 1 if the offender commits at least 1 offence in the future time window), the number of offences the offender commits, the times he/she is brought to court and the times he/she is sentenced to prison again. The estimation is conducted through a local linear regression constructed with a triangular kernel regression. Each column corresponds to a different bandwidth selection: in columns (1) and (4) the bandwidth is 365 days; in columns (2) and (5) it is 274 days; in columns (3) and (6) it is 183 days. Robust standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01.

TABLE A15. EFFECTS OF ADULTS' PRISON VS. YOUTH CUSTODY/DETENTION CENTRES (IN THE NEXT EIGHT YEARS) - FULL SAMPLE

	Independent Variable: Adults' Prison		
	1963		
	<i>Softer treatment</i>		
	365 days	274 days	183 days
	(1)	(2)	(3)
Likelihood to reoffend	-0.245*** (0.088)	-0.238** (0.099)	-0.189 (0.122)
Offences	-4.083*** (1.109)	-4.044*** (1.182)	-4.641*** (1.526)
Times to court	-1.979*** (0.541)	-2.099*** (0.595)	-2.473*** (0.764)
Sentences to prison	-1.808*** (0.595)	-1.798*** (0.612)	-1.686** (0.721)
Observations	707	579	383

Notes: The table reports the effects of experiencing prison rather than youth custody/detention centres for the 1963 cohort of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate). The 1963 sample includes offenders who were sentenced to either youth custody/detention centres or adults' prisons when being age 20/21 at the date of court appearance and as a robustness check I also include offenders who committed their first offence when younger than 14. The time window over which the outcome variables are observed is eight years. Each set of rows corresponds to a different outcome variable: the likelihood to reoffend (a dummy equal to 1 if the offender commits at least 1 offence in the future time window), the number of offences the offender commits, the times he/she is brought to court and the times he/she is sentenced to prison again. The estimation is conducted through a local linear regression constructed with a triangular kernel regression. Each column corresponds to a different bandwidth selection: in column (1) the bandwidth is 365 days; in column (2) it is 274 days; in column (3) it is 183 days. Robust standard errors are reported in parentheses: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A16.DEATHS IN PRISON CUSTODY BY CALENDAR YEAR, ENGLAND AND WALES, 1983-1997

Year	DEATHS PER 1000 PRISONERS								
	Homi- cides	Natural Causes	Self- inflicted	Other ¹	All deaths	Natural Causes	Self- inflicted	Other	All deaths
Panel A. Experiment 1									
1983	0	37	27	0	64	0.85	0.62	0.00	1.47
1984	1	35	27	2	65	0.81	0.62	0.05	1.50
1985	0	27	29	3	59	0.58	0.63	0.06	1.28
1986	2	29	21	5	57	0.62	0.45	0.11	1.22
1987	0	35	46	0	81	0.72	0.95	0.00	1.67
Panel B. Experiment 2									
1988	0	44	37	1	82	0.90	0.76	0.02	1.68
1989	0	31	49	2	82	0.64	1.01	0.04	1.69
1990	4	39	51	3	97	0.87	1.13	0.07	2.16
1991	3	21	43	4	71	0.47	0.96	0.09	1.58
1992	3	34	41	3	81	0.76	0.92	0.07	1.81
1993	2	39	48	2	91	0.88	1.08	0.04	2.04
1994	3	38	62	5	108	0.78	1.28	0.10	2.22
Panel C. Experiment 3									
1995	3	52	59	3	117	1.02	1.16	0.06	2.30
1996	2	53	65	2	122	0.96	1.18	0.04	2.21
1997	2	47	68	1	118	0.77	1.11	0.02	1.93

Notes: Numbers and classification of deaths are reviewed annually to ensure accuracy and consistency over time. Deaths in prison custody figures include all deaths of prisoners arising from incidents during prison custody. They include deaths of prisoners while released on temporary license (ROTL) for medical reasons but exclude other types of ROTL where the state has less direct responsibility. In recent years, approximately one half of the overall deaths in prison custody actually occur in hospitals or hospices. The self-inflicted deaths category includes a wider range of deaths than suicides. Similarly, the homicide category includes a wider range of deaths than murder. When comparing figures with other sources it is important to determine whether the narrower suicide or broader self-inflicted deaths approach is in use. Populations are based on the population at 30 June each year.

Source: Ministry of Justice, *Safety in Custody statistics: Deaths in prison custody, 1978-2012*, available at: <https://www.gov.uk/government/publications/safety-in-custody>

TABLE A17. EFFECTS OF ADULTS' PRISON VS. YOUTH FACILITIES (IN THE FOUR YEARS FOLLOWING RELEASE)

Independent Variable: Adults' Prison	1963			1975		
	<i>Softer treatment</i>			<i>Harsher treatment</i>		
	365 days	274 days	183 days	365 days	274 days	183 days
	(1)	(2)	(3)	(4)	(5)	(6)
Likelihood to reoffend	-0.419*** (0.108)	-0.450*** (0.123)	-0.421** (0.166)	0.044 (0.036)	0.049 (0.042)	0.017 (0.051)
Offences	-2.120** (0.854)	-2.038** (0.932)	-1.613 (1.210)	1.124** (0.493)	1.444*** (0.555)	1.563** (0.648)
Times to court	-1.136*** (0.384)	-1.131*** (0.436)	-0.895 (0.603)	0.338 (0.209)	0.464* (0.239)	0.483* (0.288)
Sentences to prison	-0.564 (0.548)	-0.518 (0.592)	-0.121 (0.738)	0.696** (0.300)	0.748** (0.339)	0.725* (0.400)
Observations	558	457	288	5,440	4,110	2,767

Notes: Columns (1)-(3) report the effects of experiencing prison rather than youth custody/detention centres for the 1963 cohort of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate) over the next four years after release. The 1963 sample includes offenders who committed their first offence when older than 14. Columns (4)-(6) report the effects of experiencing prison rather than young offender institutions for the 1975 cohort of the Police National Computer (Ministry of Justice, PNC/Criminal Histories Team Justice Statistics Analytical Services) over the next four years after release. The estimation is conducted through a local linear regression constructed with a triangular kernel regression. Each set of rows corresponds to a different outcome variable: the likelihood to reoffend (a dummy equal to 1 if the offender commits at least 1 offence in the future time window), the number of offences the offender commits, the times he/she is brought to court and the times he/she is sentenced to prison again. Each column corresponds to a different bandwidth selection: in columns (1) and (4) the bandwidth is 365 days; in columns (2) and (5) the bandwidth is 274 days; in columns (3) and (6) it is 183 days. Robust standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01.

TABLE A18. EFFECTS OF ADULTS' PRISON VS. YOUTH FACILITIES (IN THE TWO YEARS FOLLOWING RELEASE)

Independent Variable: Adults' Prison	1963			1968		
	<i>Softer treatment</i>			<i>Harsher treatment</i>		
	365 days	274 days	183 days	365 days	274 days	183 days
	(1)	(2)	(3)	(4)	(5)	(6)
Likelihood to reoffend	-0.421*** (0.145)	-0.445*** (0.169)	-0.350 (0.232)	0.184 (0.142)	0.213 (0.174)	0.259 (0.240)
Offences	-1.166 [†] (0.664)	-0.994 (0.766)	-0.797 (1.064)	1.462 (0.957)	1.462 (1.117)	1.108 (1.468)
Times to court	-0.507 (0.333)	-0.486 (0.398)	-0.318 (0.580)	0.425 (0.329)	0.485 (0.393)	0.450 (0.528)
Sentences to prison	-0.593 (0.392)	-0.518 (0.458)	-0.451 (0.653)	0.979 (0.655)	1.063 (0.787)	1.147 (1.103)
Observations	445	364	228	326	266	182

Notes: The table reports the effects of experiencing prison rather than youth custody/detention centres for the 1963 cohort of the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate). The 1963 sample includes offenders who were sentenced to either youth custody/detention centres or adults' prisons when being age 20/21 at the date of court appearance and who committed their first offence when older than 14. Both cohorts are restricted to offenders with sentences up to one year when age 20/21. The time window over which the outcome variables are observed is two years after release. Each set of rows corresponds to a different outcome variable: the likelihood to reoffend (a dummy equal to 1 if the offender commits at least 1 offence in the future time window), the number of offences the offender commits, the times he/she is brought to court and the times he/she is sentenced to prison again. The estimation is conducted through a local linear regression constructed with a triangular kernel regression. Each column corresponds to a different bandwidth selection: in columns (1) and (4) the bandwidth is 365 days; in columns (2) and (5) the bandwidth is 274 days; in columns (3) and (6) it is 183 days. Robust standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01.

TABLE A19. CORRELATES OF ASSIGNMENT TO TOO HARSH OR TOO LENIENT PUNISHMENTS

	1963 Cohort		1968 Cohort		1975 Cohort	
	Non-compliers at 20 (1)	Non-compliers at 21 (2)	Non-compliers at 20 (3)	Non-compliers at 21 (4)	Non-compliers at 20 (5)	Non-compliers at 21 (6)
Age at Court (in days)	0.000 (0.000)	-0.000*** (0.000)	0.000*** (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000*** (0.000)
Ethnicity: unknown	0.128 (0.126)	-0.053 (0.199)	-0.022 (0.167)	0.055 (0.140)		
Ethnicity: White European	0.145 (0.129)	-0.035 (0.199)	-0.033 (0.166)	-0.001 (0.139)	-0.003 (0.042)	-0.033** (0.016)
Ethnicity: Dark European	0.000 (.)	-0.046 (0.206)	0.000 (.)	-0.077 (0.202)		
Ethnicity: Afro-Caribbean	0.000 (.)	0.000 (.)	-0.051 (0.174)	0.158 (0.158)	-0.003 (0.049)	-0.009 (0.020)
Ethnicity: Asian	0.000 (.)	-0.065 (0.283)	-0.012 (0.234)	0.000 (.)	-0.192 (0.168)	-0.066 (0.076)
Ethnicity: Middle-Eastern					0.165 (0.127)	-0.050 (0.051)
Male	-0.031 (0.068)	0.061 (0.049)	-0.002 (0.070)	0.110 (0.117)	-0.060 (0.037)	-0.005 (0.014)
Born in March	-0.033 (0.044)	0.030 (0.029)	0.000 (.)	0.039 (0.040)	0.024 (0.037)	-0.011 (0.016)
Born in June			0.062 (0.039)	0.000 (.)	0.048 (0.036)	-0.008 (0.016)
Born in Sept/Oct	0.000 (.)	0.042 (0.035)	0.072* (0.040)	-0.022 (0.042)	-0.035 (0.037)	-0.017 (0.016)
Born in December	0.022 (0.048)	0.000 (.)	0.055 (0.037)	-0.016 (0.046)	-0.013 (0.036)	-0.032* (0.016)
Age at first court appearance	-0.008 (0.009)	-0.000 (0.006)	-0.002 (0.004)	-0.004 (0.004)	-0.007* (0.004)	0.006*** (0.002)
Sentence length (days)	0.003 (0.002)	-0.002 (0.001)	-0.000 (0.001)	-0.000 (0.002)	-0.000*** (0.000)	0.000 (0.000)
Plea Guilty	0.106* (0.063)	0.034 (0.039)	0.040 (0.165)	-0.011 (0.046)		
Burglaries/robberies	-0.033* (0.019)	-0.002 (0.013)	0.037 (0.055)	0.056 (0.068)	-0.026 (0.032)	0.003 (0.015)
Thefts	-0.026* (0.014)	0.006 (0.010)	-0.018 (0.058)	0.061 (0.070)		
Frauds	-0.022 (0.037)	-0.015 (0.017)	-0.004 (0.085)	0.023 (0.108)	0.001 (0.050)	-0.003 (0.018)
Violent Offences	-0.024 (0.032)	-0.023 (0.015)	0.009 (0.056)	0.048 (0.071)	-0.082*** (0.023)	-0.001 (0.010)
Sexual Offences	0.038 (0.116)	-0.025 (0.083)	-0.058 (0.173)	0.031 (0.130)	-0.072 (0.067)	-0.041 (0.030)
Criminal Damage	0.024 (0.058)	0.097** (0.038)	-0.014 (0.109)	0.033 (0.109)	0.006 (0.050)	-0.031 (0.022)
Drugs	-0.025 (0.052)	0.027 (0.035)	-0.014 (0.092)	0.262** (0.115)	-0.029 (0.029)	-0.008 (0.011)
Motoring Offences	-0.031 (0.027)	-0.025 (0.024)	0.120 (0.078)	0.011 (0.202)		
Minor Offences	-0.034 (0.054)	-0.012 (0.023)	-0.032 (0.078)	0.039 (0.079)		
Observations	248	309	229	217	2,725	2,627

Notes: The table reports the results from running a linear probability model of being a non-complier against a set of covariates. For simplicity I am not showing the effects of each month of birth for the 1975 cohort, but all the estimated coefficients are not significantly different from zero. Please is not considered as a covariate for the 1975 cohort because of the many missing values. Each Column refers to a different group of non-compliers: in column (1) non-compliers are the offenders who were born in 1963 and when 20 were erroneously assigned to adult prisons; in column (2) non-compliers are the offenders who were born in 1963 and when 21 were erroneously assigned to youth custody/detention centres; in column (3) non-compliers are the offenders who were born in 1968 and when 20 were erroneously assigned to adult prisons; in column (4) non-compliers are the offenders who were born in 1968 and when 21 were erroneously assigned to young offender institutions; in column (5) non-compliers are the offenders who were born in 1975 and when 20 were erroneously assigned to adult prisons; in column (6) non-compliers are the offenders who were born in 1975 and when 21 were erroneously assigned to young offender institutions. Standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01.

TABLE A20. BALANCING TESTS OF TYPES OF OFFENCES ACROSS COHORTS

Treatment: Adults' Prison						
	Treatment: offenders born in 1968 Control: offenders born in 1963			Treatment: offenders born in 1963 Control: offenders born in 1968		
	365 days (1)	274 days (2)	183 days (3)	365 days (4)	274 days (5)	183 days (6)
Thefts	0.083 (0.096)	0.052 (0.116)	-0.020 (0.151)	-0.055 (0.105)	-0.003 (0.153)	-0.027 (0.149)
Violent offences	-0.126 (0.091)	-0.141 (0.109)	-0.159 (0.144)	0.089 (0.079)	-0.100 (0.130)	0.024 (0.098)
Sexual offences	0.021 (0.025)	0.032 (0.029)	0.058 (0.037)	0.063 (0.046)	0.061 (0.040)	0.106 (0.068)
Burglaries/ robberies	0.090 (0.101)	0.091 (0.117)	0.078 (0.148)	0.034 (0.111)	-0.015 (0.153)	0.084 (0.159)
Minor offences	-0.039 (0.041)	-0.035 (0.048)	-0.009 (0.063)	-0.012 (0.038)	-0.002 (0.060)	-0.028 (0.048)
Frauds	-0.001 (0.040)	-0.003 (0.046)	0.002 (0.055)	-0.101** (0.044)	0.013 (0.067)	-0.123* (0.067)
Criminal Damage	-0.005 (0.028)	-0.006 (0.033)	-0.029 (0.042)	-0.006 (0.011)	-0.000 (0.007)	-0.004 (0.004)
Drug offences	-0.046 (0.034)	-0.036 (0.039)	0.003 (0.049)	-0.016 (0.039)	-0.093 (0.076)	-0.030 (0.067)
Motoring Offences	-0.024 (0.032)	-0.015 (0.037)	-0.010 (0.046)	-0.034* (0.018)	0.027 (0.019)	-0.018 (0.014)
Other offences [†]	0.047 (0.047)	0.061 (0.054)	0.086 (0.065)	0.038 (0.032)	0.113* (0.066)	0.016 (0.023)
Observations	596	479	332	576	288	321

Notes: Columns (1)-(3) report the estimated discontinuities on types of offences for offenders born in 1963 who experienced youth custody/detention centres and offenders born in 1968 who experienced prison. Columns (4)-(6) report the estimated discontinuities on types of offences for offenders born in 1968 who experienced young offender institutions and offenders born in 1963 who experienced prison. Data for the 1963 and 1968 cohorts comes from the Offenders Index Cohort Data (Home Office Research, Development and Statistics Directorate). Each row corresponds to the main offence for which offenders were sentenced to custody at 20/21. The estimation is conducted through a local linear regression with a triangular kernel regression. Each column corresponds to a different bandwidth selection: in columns (1) and (4) the bandwidth is 365 days; in columns (2) and (5) the bandwidth is 274 days; in columns (3) and (6) it is 183 days. Robust standard errors are reported in parentheses: * p < 0.1, ** p < 0.05, *** p < 0.01. † Other offences include mainly: failing to surrender to bail, going equipped for stealing, and other offences against the state or public order (6.55%).