

# ‘Closer to Home, Farther from Recidivism?’

## The effect of New York City’s ‘Close to Home’ reform on juveniles

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### Abstract

‘Close to Home (C2H)’ is a juvenile justice reform implemented in the City of New York (NYC) in 2012 that in addition to being more rehabilitative than punitive, placed the juvenile respondents in local facilities in the city instead of sending them off to state facilities located in upstate New York, far away from home, as was formerly the case. In this paper, I measure the impact of this reform on crime rates, placement rates and recidivism rates of juveniles in the city. I examine whether staying closer to home and connected to the community helps reduce the recidivism rates of the juveniles or gives them an opportunity to stay connected to their peer network and increase their recidivism rates due to a decrease in both deterrence and incapacitation. Using New York State’s juvenile court case records, I employ both a pre-post reform comparison of NYC juveniles as well as a difference-in-difference methodology, where juveniles from the City of New York are considered as the treatment group and juveniles from the rest of the state are considered the comparison group. Both the pre-post model as well as the difference-in-difference model show significant reductions in the likelihood of juveniles indulging in escalation of criminal behavior<sup>1</sup>, with the pre-post model showing additional significant reductions in recidivism rates post reform of previous felony offenders. In both the models, the arrest rates and placement rates have significantly gone down while the dismissal rates have gone up for NYC juveniles.

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<sup>1</sup>escalating to non-status (criminal) offenses from status offenses

## I. Introduction

The State of New York is historically significant when we look at the evolution of the youth justice reforms. Not only was it the site of the nation's first youth prison, but also the first state in 1978 to pass one of the harshest laws, the juvenile offender law, that allowed youth that were 13 years or older to be tried as adults if charged with certain violent felonies (Schwartz 1980). Until the passage of 'Close to Home' reform in April 2012, if a juvenile in the State of New York was convicted of their crimes, they were sent away to large facilities that were operated either by the New York State Office of Children and Family Services (OCFS) or by private providers contracted by OCFS, most of which were located in upstate New York, far away from the city (Weissman 2019). The reform stated that juvenile delinquents<sup>2</sup> of New York City (NYC) who were required to go through out-of-home placement would no more be sent to offsite facilities but instead would be assigned to local care and custody of the city.

My aim in this paper is to explore whether juveniles serving their sentences in facilities that are less punitive and more rehabilitative with the added benefit of being closer to their homes are more likely or less likely to recidivate as compared to their counterparts sent to far off locations. The net expected impact of this policy on recidivism is unclear. On one hand, juveniles who stay close to home may have more visitations from family and stay connected to their community that would serve to reduce their chances of future recidivism.<sup>3</sup> On the other hand, this directly leads to a decrease in both deterrence and incapacitation while also keeping them in touch with their peer network or partners in crime, which could lead to an increase in their recidivism rates (Bayer, Hjalmarsson & Pozen 2009). From pre-post analysis of NYC juveniles, I find 51.7% and 11.75% decline in the odds<sup>4</sup> of recidivating in the post-reform period of juveniles who committed status offenses<sup>5</sup> and felonies previously respectively. The odds of getting arrested, detained, and

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<sup>2</sup>a child over 7, but under 16 years of age (this was raised to 18 years effective 10/1/2019), who commits an act that would be a crime if it had been committed by an adult

<sup>3</sup>This is covered more extensively in the literature review section

<sup>4</sup>I use logistic regression to do the pre-post analysis so the results would be in the form of odds ratios

<sup>5</sup>Acts considered offenses due to the age of the juveniles, e.g., underage drinking, truancy, etc.

put into placement have decreased by 44.83%, 41.56% and 18.2% respectively in the post-reform period. The odds of getting dismissed in the post-reform period has increased by 11.95%. From difference-in-difference methodology analysis, I find that the reform is associated with a 23%, 26.87%, and 9.63% increase in the likelihood of recidivating (male NYC juveniles), getting detained and getting dismissed, respectively. It is important to note here that the reform is associated with a 15.39%, 11.21% and 15.34% decline in the likelihood of recidivating by juveniles committing status offenses previously, female juveniles and Black juveniles in the city respectively. The reform is also associated with a 19.95% and 8.06% decline in the likelihood of being put into placement and getting arrested in the post-reform period compared to the untreated respectively.

From the mid-1970s to the mid-1980s, the number of incarcerated youth rose by 45% at the national level (Smith 1999, Annie E. Casey Foundation 2013). During this period, there were allegations of civil rights violations perpetrated by the State Division for Youth (DFY) in the state of New York. This led to a resistance towards the harsh and punitive approach undertaken towards the juveniles in custody. There were also new studies by psychologists and law professors in the later decade that argued that juveniles should not be held to the same standards as that of adults in terms of criminal responsibility because their decision making capabilities are diminished as compared to adults and their character is still undergoing change (Steinberg 2009). There were various reports submitted by advocates and task forces that highlighted the inhumane condition of the New York State OCFS juvenile facilities. In an era where the nation was transitioning from a 'tough-on-crime' stance to a rehabilitative one, these reports along with the news of the death of a 15-year old Bronx boy while in custody served as the final push for the C2H reform (Weissman 2019).

This initiative was proposed in the year 2010, and was passed as legislation in March, 2012 to be effective from September, 2012. It transferred the custody and care of all NYC youth that got adjudicated as juvenile delinquents<sup>6</sup> from the state to the city. It

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<sup>6</sup>kids aged 7-15 in the State of New York that committed an act which would be considered a crime if committed by an adult, a non-status offense

is important to note here however, that juvenile offenders<sup>7</sup> are still sent to the secure facilities handled by the OCFS. Post the implementation of this reform, not only did the number of juvenile offenders being transferred from the city's family court to the youth prisons drastically go down, but also, the juvenile delinquents being placed into the local facilities were now subjected to more home-like settings aimed at rehabilitation over punitive measures (Weissman 2019). The literature on adult recidivism affected by distance finds doubling an inmate's distance from his house reduces his recidivism rate by 3.3 percentage points (Weber 2019). The paper, however, attributes this decrease in recidivism to criminal ties getting cut when the inmate moves from his town to the prison. To the best of my knowledge, there is no such related literature that takes a look at juvenile recidivism and how it might be affected by family visitation or proximity to house. My contribution is to provide a quantitative report on the impact of the C2H reform on juvenile recidivism. Section II provides background about the juvenile justice system and section III covers the literature review of the topic. Section IV describes the data used and section V lays the empirical strategies employed to get the results. Section VI contains the results with section VII concluding the paper with discussion of current paper limitations and scope for future research.

## II. Background

The juvenile justice system is an independent and parallel system of criminal justice that exists to address the charges or convictions of criminal offenses committed by minors. With a few exceptions, in most states in the United States, minors are people under the age of eighteen. The main purpose of a separate justice system for minors is not to remove them from the society through incarceration but to rehabilitate them. Juvenile criminal proceedings are a lot more informal than those of adults. This contrast can be noticed in the way juvenile offenders are addressed as respondents instead of defendants in many jurisdictions. Based on the type of crime committed, the juveniles' punishment could vary anywhere between paying restitution for damages, completing certain educational/vocational programs, abiding by curfews, obeying parents, maintaining school

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<sup>7</sup>youth aged 13-15 charged with committing a serious or violent felony offense

attendance, probation, etc. Even in case of incarceration, this would be at a juvenile detention center which is tailored towards the juvenile's age group. Once the individual becomes an adult, their juvenile criminal records are automatically sealed. Juveniles can be charged for two kinds of criminal offenses. Non-status offenses that are crimes when committed by adults, such as property crimes, motor crimes, and violent crimes. And status offenses, that are considered as crimes committed by the juvenile precisely because of their age, such as truancy, running away from home, underage drinking/driving, breaking curfew, disobeying parents/guardians, etc. Most status offenses are handled by social services rather than juvenile courts. In case of serious crimes, such as murder or aggravated assault, minors can be tried as adults in the adult criminal court.

The history of the juvenile justice system in the United States is a little over a century old, with the first court appearing in 1899 in Illinois, prior to which kids and youth alike were tried and punished as adults. The philosophy 'parens patriae' was first articulated in 1944's *Prince Vs. Massachusetts* that stated a juvenile court could 'act as a parent' and intervene when it felt it was in the best interests of the juvenile. It was advances in the understanding of children's mental development and a push for a more compassionate approach that brought about this change. In 1995, a popular criminologist and political scientist, John Dilulio Jr. published an article in the Washington Examiner, warning us of 'The coming of the Superpredators'. He predicted an incoming wave of remorseless, impulsive teenagers that would indulge in criminal offenses without any intelligible motive. This led to American lawmakers taking tough-on-crime legislative actions to address this danger. Multiple people debunked this theory as a myth (Radice 2018). On the other end of the spectrum were psychologists and law professors like Laurence Steinberg and Elizabeth Scott respectively, who argue that juveniles should not be held to the same standards as that of adults in terms of criminal responsibility because their decision making capabilities are diminished as compared to adults and their character is still undergoing change.

According to the juvenile court statistics report by the National Center for Juvenile Justice (NCJJ), the number of cases handled by the juvenile courts has decreased by

48% between 2009 and 2018. Over this period, cases have declined in every category of offense except criminal homicide and nonviolent sex offenses. According to the Children's Defense Fund, despite such positive trends in child arrests, 1,995 children are arrested in the U.S. each day. According to the Office of Juvenile Justice and Delinquency Prevention (OJJDP) statistics, more than 728,000 children were arrested in 2018, of which more than 60% were white and about 70% were male. About 20% of the youth that are held in juvenile facilities are awaiting trial and they have not yet been found guilty or delinquent. The juvenile arrest rates in the United States have come down from 6,396.6 per 100,000 persons aged 10-17 in 1980 to 2,553 per 100,000 persons aged 10-17 in 2016, peaking at 8,476.2 per 100,000 persons aged 10-17 in 1996. However, the percentage of juveniles arrested for violent crimes over this period reduced from 34.9% in 1980 to 8.6% in 2017, peaking at 52% in 1993. Over this period of the last four decades, multiple states across the country implemented various reforms to better the juvenile justice systems by creating developmentally appropriate models without posing any risks to public safety. The overarching goal of the juvenile justice systems is to minimize both the incarceration as well as the recidivism rates of youth while maintaining/improving public safety. One such reform is the C2H reform whose effect on the recidivism rates of at-risk youth, i.e., youth that have been in prior contact with the justice system is what I intend to measure in this paper.

### **III. Literature Review**

This paper contributes to the literature on economics of juvenile crime, specifically, it attempts to answer whether keeping youth closer to homes can keep them out of the prison system later in the future or unintentionally exacerbates their future recidivism by reducing their deterrence levels. Weber (2019) looks at adult recidivism affected by proximity of prison from home and finds that doubling an inmate's distance from his house reduces his recidivism rate by 3.3 percentage points. The paper attributes this decrease in recidivism to criminal ties getting cut when the inmate moves from his town to the prison. Prior work on juveniles and proximity indicates that the distance from a treatment center is found to increase the likelihood of both treatment non-completion

and recidivism of a juvenile sentenced to community based treatments instead of residential placements (Lockwood 2010). This paper does not look at placements at all. While some studies indicate that the very quality and characteristics of a neighborhood such as presence of public parks, schools, libraries and community centers, voluntary establishments, and detention/police facilities influence recidivism risk, the significance and direction of these effects varied by juvenile population (Thompson-Dyck 2018), others indicate relocation increases recidivism, irrespective of the direction of the move with regard to socioeconomic context (Wolff 2017).

When it comes to incapacitation effects, there are mixed results. Eren & Mocan (2017) finds juvenile incarceration has no impact on future violent crime, but it lowers the propensity to commit property crime. It also increases the propensity of being convicted for a drug offense in adulthood, which is again an effect largely driven by the time spent in prison. Aizer & Doyle (2013) find large increases in the likelihood of adult incarceration if the youth was incarcerated as a juvenile. Coleman et al. (2009) finds that over two thirds of youth placed in New York State's juvenile placement system spent some amount of time in the adult prison system by the time they turned 28. My work is an additional contribution to the work done by this paper. Jacob & Lefgren (2003) look at the effect of incapacitation on crime rates and find that the level of property crime reduces by 14% on school days and the level of violent crime increases by 28% on days when teachers are in service, leaving kids to themselves.

When it comes to the behaviour of youth reacting to changes in deterrence by introduction of sanctions or reforms, the evidence is quite mixed. Arora (2019) finds that the reported offenses/arrest rates of juveniles aged 13-17 increased by 8% of the mean post the implementation of 'Raise the age' reform across various states in the United States. Most of the increase in these crime rates is driven by gang related crimes, reaffirming the criminal accumulation capital theory. While some argue for harsher sanctions to deter crime, others act as proponents for diversion programs such as Becoming a Man program, a community based support and treatment group in the cities of Boston and Chicago. Heller et al (2015) finds a reduction of 28-35% in total arrests, and a reduction

of 45-50% in violent crime arrests during the intervention period. A strong paper that argues against juvenile incarceration is Bayer, Hjalmarsson & Pozen (2009) that shows strong evidence of peer effects for burglary, petty larceny, felony and misdemeanor, drug offenses, aggravated assault, and felony sex offenses. These effects affect individuals who already have some experience in a particular crime category. Imai, Katayama & Krishna (2006) find that previous arrests raise criminal activity for non-criminal type, i.e., someone who does not keep committing criminal offenses. Mocan & Rees (1999) find that juveniles do respond to incentives and sanctions as predicted by economic theory.

The literature has mixed evidence when it comes to the saliency of youth with respect to changes in legislation that affects the punitiveness of their offenses. While some find that there is a change in response in anticipation of reforms such as Raise the Age reform (Arora 2019) or Tort reform (Malani & Reif 2010), others find there is very limited deterrence effect of receiving harsher sentences when juveniles turn 18 and are tried as adults (Lee & McCrary 2009), while some find significant effects of deterrence for the same (Levitt 1998).<sup>8</sup> Since I have data for a couple of years preceding and succeeding the reform implementation, I check for the salience of youth in the period post the implementation of the reform. When the California juvenile justice realignment law was passed in 1996, the cost of juvenile corrections was transferred from the state to the county level, resulting in a drastic drop in the number of juveniles being sent to state facilities (Ouss 2015). For the state of New York however, the city already was paying the state for the juveniles it was sending to the state facilities. ‘Close to Home’ reform merely changed the receptors of these funds from the state to the city. So I do not have to worry about any drastic changes in terms of arrest rates or placement rates being affected due to such cost transfers.

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<sup>8</sup>The last two papers assume implicit salience since the youth would be aware they would be tried as adults at the age of 18

## IV. Data

I use juvenile court records collected by the National Center for Juvenile Justice for New York (statewide case-level data submitted by New York State Office of Court Administration). The records contain demographic details such as sex, race, age at filing, etc. as well as criminal offense and history data such as petition time, prior referrals, count of offenses, filing offenses, disposition outcome, etc. There are a total of 181,083 records of juvenile data spanning petition dates from the year 2005 to 2019 that indicate all the cases that reached the petition stage where the outcome is decided. Of these, 51,404 records are of status offenses. Status offenses are acts that are considered non-criminal but still offenses due to status of the juvenile as a minor. The most common status offenses include acts such as underage drinking, running away from home, absenteeism from school, etc. The rest 129,679 records are non-status offenses. Non-status offenses are acts that would be considered criminal if they'd been committed by adults, such as burglary, theft, sexual misconduct, criminal mischief, etc.

**Table 1:** Demographic Statistics

	Arrests		Comparison group		Treatment group	
	mean	sd	mean	sd	mean	sd
Age at referral	14.2284	(1.2124)	14.1831	(1.2940)	14.2860	(1.0976)
Female	0.2291	(0.4203)	0.2332	(0.4229)	0.2239	(0.4169)
White	0.2182	(0.4130)	0.3033	(0.4597)	0.1085	(0.3110)
Black	0.3378	(0.4730)	0.3107	(0.4628)	0.3727	(0.4835)
Native	0.0034	(0.0580)	0.0050	(0.0708)	0.0012	(0.0349)
Asian/Pacific Islander	0.0067	(0.0817)	0.0033	(0.0577)	0.0111	(0.1046)
Other Race	0.0251	(0.1565)	0.0290	(0.1677)	0.0202	(0.1407)
PostReform (PostR)	0.3098	(0.4624)	0.3350	(0.4720)	0.2773	(0.4477)
NYC	0.4370	(0.4960)				
Observations	129679		73015		56664	

Source: NCJJ Data. Comparison group is rest of the State of New York and treatment group is New York City. Natives are either American or Alaskan natives. NYC is an indicator variable for juveniles charged in NYC and PostR is an indicator variable for the period post reform implementation.

Table 1 provides the demographic statistics of the non-status offenses/arrests. Only about 31% of these offenses are post 2012 showing a constant decline in the number of juvenile cases that reach the hearing stage where the disposition outcome is decided. NYC accounts for almost 44% of these arrests. Almost 23% of these records are of females. Race details are available for about 60% of the total data, of which approximately 37% are White, 57% are Black, 0.6% are American-Indian/Alaskan Native, 1.13% are Asian/Pacific Islanders and 4.25% belonged to other races. When I compare the demographics of NYC with the rest of the state, I see that almost 47% of the comparison group is White, whereas for the treatment group it is slightly over 21%. The proportion of Black youth arrested in NYC is much higher at almost 73% than that of the rest of the state at 47.7%. Only about 28% of NYC juveniles are from the post-reform period as compared to almost 34% for the rest of the state. The average age at filing and percentage of female arrests for both NYC as well as the rest of the state seems to be consistent with the overall averages at 14 years old and 23% respectively.

**Table 2:** Charges & Disposition Statistics

	Arrests		Comparison group		Treatment group	
	mean	sd	mean	sd	mean	sd
Crime types						
Misdemeanor	0.5207	(0.4996)	0.5835	(0.4930)	0.4398	(0.4964)
Felony	0.4793	(0.4996)	0.4165	(0.4930)	0.5602	(0.4964)
Drug charges	0.0217	(0.1457)	0.0082	(0.0901)	0.0391	(0.1939)
Theft charges	0.3699	(0.4828)	0.3559	(0.4788)	0.3880	(0.4873)
Aggression charges	0.2584	(0.4378)	0.2364	(0.4249)	0.2868	(0.4523)
Sexual misconduct charges	0.0423	(0.2012)	0.0523	(0.2227)	0.0293	(0.1686)
Criminal Mischief	0.1326	(0.3391)	0.1472	(0.3543)	0.1137	(0.3175)
Sentencing types						
Detention	0.0802	(0.2715)	0.0741	(0.2620)	0.0879	(0.2832)
Dismissed	0.5081	(0.4999)	0.4936	(0.5000)	0.5269	(0.4993)
Probation	0.3305	(0.4704)	0.3313	(0.4707)	0.3296	(0.4701)
Out-of-home Placement	0.1303	(0.3367)	0.1262	(0.3321)	0.1356	(0.3424)
Observations	129679		73015		56664	

Source: NCJJ Data. Comparison group is rest of the State of New York and treatment group is New York City. Arrests are for non-status offenses only (crimes if committed by adults such as robbery, assault, etc.). Detention here is an indicator variable for whether a juvenile was detained when arrested. For easier grouping, it has been put under sentencing types both here and elsewhere.

Table 2 summarizes the criminal and disposition statistics of our records. Felonies account for 47.93% of these records and 52.07% of these records are for misdemeanors. About 37% of these records are theft related cases comprising of burglary, robbery, larceny, etc. 26% of these records are from serious or violent offenses seen as acts of aggression comprising of assault, menacing, reckless endangerment, etc. Drug related cases are about 2% and cases of sexual misconduct about 4%. Another 13% are cases I categorized as medium level and named as criminal mischief since most of these are considered as misdemeanors such as making graffiti, trespassing, unauthorized use of vehicle without owner's consent, etc. When we look at NYC and the rest of the state separately, we can see that more than 58% of cases in the rest of the state are misdemeanors whereas in NYC, about 56% of the cases are felonies. Unsurprisingly, the proportion of drug related charges in NYC are almost four times the amount for the rest of the state. Sexual misconduct charges seem to be more prevalent in the rest of the state with their proportion being close to almost twice that of the city. The rest of the charges are comparably similar for both the groups. About 8% of the juveniles were detained before their hearing. On average, about 51% of the cases are dismissed at the hearing. One out of three juveniles that get arrested gets put on probation and about 13% of the juveniles are sent for out-of-home placement. These statistics seem to be consistent across NYC and the rest of the state with the overall averages.

Table 3 presents the recidivism rates of the juveniles. Here, I define recidivism as re-offending at any point in future, still as a minor. This means that if a juvenile committed an offense for the second time, and still haven't reached the age of criminal majority, it would count as recidivating. On average, about 24.67% of juveniles recidivate ever (23.31% among NYC juveniles and 25.72% among the rest of the state juveniles). Table 4 shows that about 80% of the juveniles that recidivate do so in the first year, and almost 95% of recidivating juveniles do it within the first two years. These percentages are consistent across offense types. Following the economics of crime literature, for the purpose of analysis henceforth, I have limited recidivism to having re-offended within the first year.<sup>9</sup> Since a lot of juveniles commit a lot of status offenses that are not harmful

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<sup>9</sup>Identical analysis for recidivism within two years present in Table E.1 in Appendix E.

**Table 3:** Recidivism rates and frequency

	Arrests		Comparison group		Treatment group	
	mean	sd	mean	sd	mean	sd
Recidivism	0.2467	(0.4311)	0.2573	(0.4371)	0.2331	(0.4228)
First Year	0.1992	(0.3994)	0.2012	(0.4009)	0.1966	(0.3974)
Second Year	0.0334	(0.1798)	0.0380	(0.1912)	0.0276	(0.1637)
Third year	0.0101	(0.1000)	0.0124	(0.1109)	0.0071	(0.0839)
Later	0.0039	(0.0626)	0.0056	(0.0745)	0.0018	(0.0426)
Observations	129679		73015		56664	

Source: NCJJ Data. Comparison group is rest of the State of New York and treatment group is New York City. Recidivism here is defined as re-offending at any point in time while still being a minor. About 80% of juveniles who ever re-offend do it within the first year and almost 95% of juveniles who ever re-offend do it within the first two years.

to the society at large or of violent nature, for the purpose of my analysis, I only use recidivism that stems from the second offense being a non-status offense irrespective of what the first offense type was. My reasoning behind this is that if a juvenile who committed a status offense previously committed a non-status offense when re-offending, it implies he's escalating in terms of his criminal behavior. If both the previous as well as re-offending offense are non-status, then this recidivism still matters because the juvenile is continuing his criminal behavior. On the other hand, if the juvenile who committed a non-status offense previously re-offended with a status offense, then the juvenile is de-escalating his criminal behavior and since status offenses are never dangerous, I don't count this as recidivism. The same follows for juveniles who keep committing status offenses but nothing else.

## V. Empirical Strategy

I aim to look at mainly three things in this paper. Firstly, I measure the effect of the reform on recidivism rates. Changes in recidivism rates would imply changes in the behavior of juveniles affected by the reform. Secondly, I measure the effect of the

reform on sentencing trends. Changes in sentencing trends would imply the existence of salience and discretionary decision-making among intake officers and judges. Last but not the least, I check for salience among youth by looking at the arrest trends around the time the legislation was introduced, passed and implemented. If there really is salience among youth and if they prefer to be closer to home, then the expectation is that there is an increase in the number of non-status offenses being committed in the post-reform period. While arrest trends in themselves are a combination of juveniles' behavior as well as arresting officers' lenience/bias, I would expect to see a spike in the felony arrest rates in the post-reform implementation period in contrast with the consistently declining arrest rates observed before. This is because, unlike misdemeanors where the arresting officers can and do exercise discretion in choosing whether they want to proceed with an arrest or leave the juvenile with a warning, felony incidents being of a more serious nature require the officer to make an arrest. I go about this in two ways. First method is to use logistic regression to employ a pre-post comparison analysis among the NYC juveniles. I look at the recidivism, detention, dismissal, placement and arrest rates of the youth before and after the reform using a logistic regression:

$$\text{Odds ratio} : \frac{P}{1-P} = e^{(\alpha_1 + \alpha_2 X_{i,c,t} + \alpha_3 \text{PostReform}_{i,c,t} + \gamma_c + \delta_t + \epsilon_{i,c,t})}, \quad (1)$$

$$P = Pr(Y_{i,c,t} = 1 | X_{i,c,t}, \text{PostReform}_{i,c,t})$$

where Y is the indicator outcome variable such as recidivism, detentions, dismissals, placements and arrests, X are demographic variables, PostReform is an indicator variable for whether it is post the reform implementation date or not,  $\gamma_c$  are county fixed effects and  $\delta_t$  are time fixed effects with i, c and t being individual, county and year levels.

Next, I use the difference-in-difference methodology where the treatment group is the City of New York and the comparison group is the rest of the state.<sup>10</sup> I measure the same things here as before. I look at the recidivism rates of the youth before and after the reform and compare those with the rest of the state to extract the impact of the reform specifically on the individual recidivism rates. I also look at the juvenile

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<sup>10</sup>Pre-trends justifying this approach are present graphically in the results section and quantitatively in Table A.3 of the Appendix A

detention, dismissal, placement and arrest rates in the city of New York before and after the reform and compare it with the juvenile detention, dismissal, placement and arrest rates in the rest of the state. If recidivism is indeed going down due to the reform, then the decline in arrest and placement rates, and increase in dismissal rates for the city of New York should be significantly larger than that of the rest of the state. I use the following equation:

$$Y_{i,t} = \alpha_1 + \alpha_2 X_{i,t} + \alpha_3 \text{NYC}_{i,t} + \alpha_4 \text{PostReform}_{i,t} + \alpha_5 (\text{NYC} \times \text{PostReform})_{i,t} + \delta_t + \epsilon_{i,t} \quad (2)$$

where Y is the indicator outcome variable such as recidivism, detentions, dismissals, placements and arrests, X are demographic variables, NYC is an indicator variable for whether they're from the City of New York or not (treatment group), PostReform is an indicator variable for whether it is post the reform implementation date or not (treatment period), NYC  $\times$  PostReform is the difference-in-difference coefficient measuring the impact of the reform, and  $\delta_t$  is time fixed effects with i and t being individual and year levels.

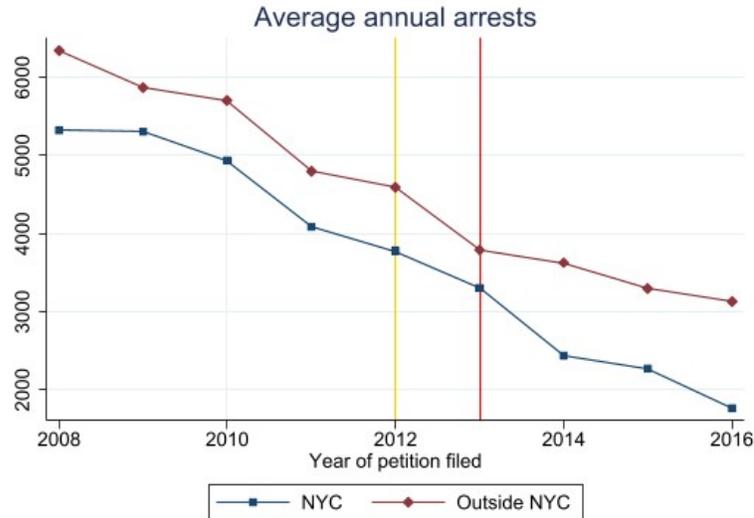
I don't use NYC status offenses as a comparison group to NYC non-status offenses to ensure I am not comparing two extremely different groups of juveniles since the status offenses are milder and cause minimal harm/damage to others as compared to non-status offenses. For instance, almost 91% of status offenses in NYC are dismissed, 0.45% detained and about 6.82% placed out of home, which leaves a sample of hardly 13 thousand juveniles to be compared against over 56 thousand for non-status offenses.<sup>11</sup>

## VI. Results

The number of arrests that reached the petition stage has declined consistently over the years as shown in Figure 1. In our time period of 2008-2016, on average, the 1 year change in arrest rate has gone down by 8% in the pre-reform period and 16.98% in the post-reform period for NYC juveniles as compared to the 7.63% in the pre-reform period and 8.99% in the post-reform period for the rest of the state.<sup>12</sup> We can see that the decline in arrest rates for NYC is almost twice as much for the rest of the state in the

<sup>11</sup>Refer to Table A.1,A.2 in Appendix A

<sup>12</sup>Refer to Figure A.1,A.2 in Appendix A

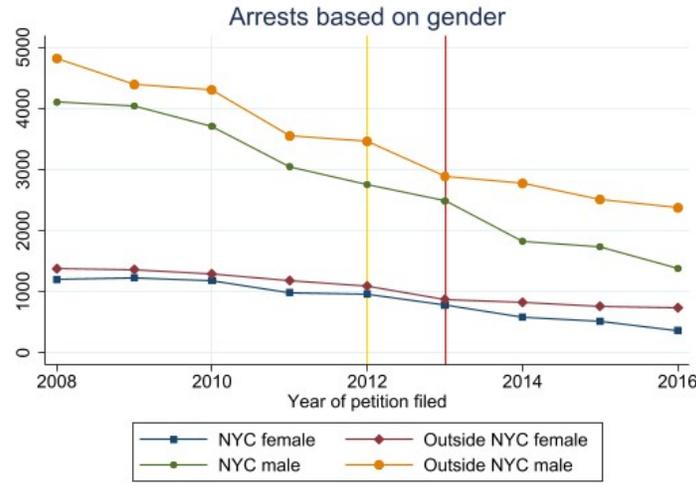


**Figure 1.** Annual arrest rates from 2008-2016

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H reform.

post-reform period while the pre-reform period rates are quite comparable. The 5 year arrest rate has gone down by 27.14% in the pre-reform period and 63.6% in the post-reform period for NYC juveniles as compared to the 34.99% in the pre-reform period and 35.75% in the post-reform period for the rest of the state. The average decline in 5 year arrest rate (measured between 2007-2012 and 2012-2017) seems to be consistent for the rest of the state before and after the reform implementation whereas the 5 year arrest rate decline in NYC post reform is slightly above 2.5 times that of its pre-reform rate.

The C2H was passed into law in April 2012 and was implemented starting September 2012, where the youth already in custody of OFCS were transferred to NYC facilities by Spring 2013. Yet, we see a decline of about 12.57% in the arrest records in the year 2013 as compared to 2012. Even when we look at the years 2010-2012, the period in which people were aware of the legislation to be passed into law in the future, 2010 saw a reduction of 6.97%, 2011 17.17% and 2012 7.56% among NYC juveniles, putting to rest the theory of anticipation in the wake of future reform. This is quite understandable as most juveniles

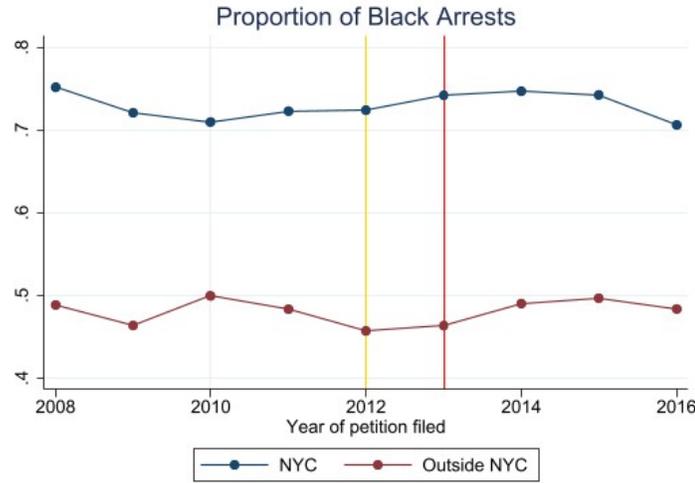


**Figure 2.** Annual arrest rates based on gender from 2008 to 2016

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H reform.

committing acts that are non-status offenses are not criminal masterminds who outweigh the pros and cons of committing a certain act. While the theory of behavioral changes in pre-treatment period due to anticipation of said treatment is viable for rational adults capable of weighing the consequences (Malani & Reif 2015), this is not necessarily true for juveniles.

On average, females account for about 23.86% of the total arrest records in the pre-reform period and 23.16% in the post-reform period as shown in the left hand-side of Figure 2. There doesn't seem to be any drastic changes in the demographics of the arrests between pre and post reform data. The average 1 year percentage change in arrest rates over the period has gone down by 4.95% for NYC females as compared to 9.29% among NYC males in the pre-reform period. This rate goes down by 21.24% among NYC females as compared to the 15.43% for NYC males in the post-reform period. The 5 year percentage change is higher for NYC males at a decline of 33.24% as compared to 7.11% for NYC females in the pre-reform period. However, this reverses in the post-reform period where the 5 year percentage change is 59.96% decline in arrest rates for males and 73.5% for females.

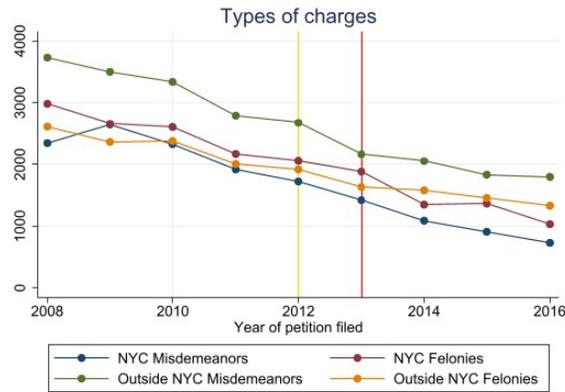


**Figure 3.** Annual arrest rates of Black juveniles proportional to total from 2008 to 2016  
 Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H reform.

A statistic that’s of concern is the proportion of Black kids arrested as compared to others as seen in Figure 3. On average, this proportion seems to be constant between 70-75% for NYC and 45-50% for the rest of the state, heavily exceeding the demographic proportions for the same. An interesting observation here is that Black juveniles’ arrest rate increased by slightly over 206% in NYC between 2008 and 2009 as compared to 2.02% for the rest of the state. While I see slight spikes in arrest rates in 2009 across all demographics, Black juveniles in NYC seem to be most impacted by this. Excluding this outlier, when I look at the average annual arrest trends for Black juveniles, they went down by 3.54% in NYC and 2.57% in the rest of the state in the pre-reform period. In the post-reform period, this rate goes down further by 12.19% for NYC but goes up by 1.83% for the rest of the state. The 5 year percentage change in the pre-reform period increased by 412.83% for NYC and decreased by 6.33% in the rest of the state. However, this rate went down by 55.63% for NYC and 9.18% for the rest of the state in the post-reform period.

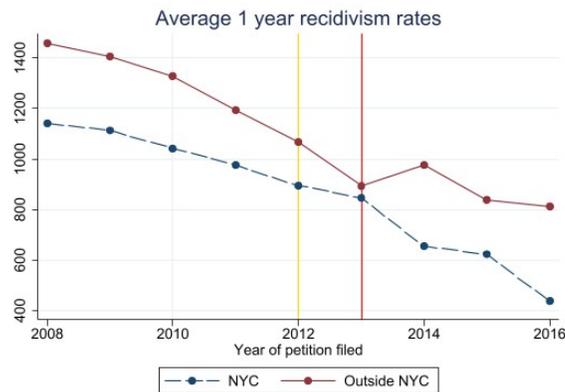
The decline in arrest trends is also consistent among both misdemeanors as well as felonies that reached petition stage as seen in Figure 4, with misdemeanors seeing a

decline of 6.74%, 19.27%, 22.34% and 69.26% in NYC and 7.85%, 9.15%, 35.92% and 37.62% in the rest of the state in the 1 year pre-reform period, 1 year post-reform period, 5 years pre-reform period and 5 years post-reform period respectively. The corresponding values for felonies (decrease in arrest rates) are 8.67%, 14.94%, 30.73% and 58.85% for NYC and 7.29%, 8.69%, 33.64% and 33.12% for the rest of the state respectively.



**Figure 4.** Arrest rates based on offense type

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H reform.



**Figure 5.** Average Recidivism rates within NYC Vs rest of the state

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H reform.

Figure 5 shows the average recidivism rates in NYC and the rest of the state over the period 2008-2016. It also acts as a graphical justification for our parallel trends assumption required to do the difference-in-difference analysis using the rest of the state as a comparison group for NYC.<sup>13</sup> We can see that in both the cases, recidivism has been declining consistently over the years.

I use three subsamples of the population data. The population data is called “Overall” data. The dataset created after dropping all the observations with missing race data is called “Main” data. I make this distinction because the race demographics are missing on average for about 40% of the records in the overall dataset and to look at specific race effects, I can’t include records that contain missing race data.<sup>14</sup> The “Main” sample data will be the primary dataset I will be looking at when explaining the effect of the reform on our main outcome of interest (PostReform (PostR) for pre-post analysis, and NYC  $\times$  PostReform (DiD) for difference-in-difference analysis). To account for heterogeneity of treatment, I also look at how this varies for female juveniles, Black juveniles, juveniles who committed status offenses previously and juveniles who committed felonies previously (PostR  $\times$  Female, PostR  $\times$  Black, PostR  $\times$  Status offenses, and PostR  $\times$  Felony for pre-post analysis, and DiD  $\times$  Female, DiD  $\times$  Black, DiD  $\times$  Status offenses, and DiD  $\times$  Felony for difference-in-difference analysis). To look at the impact of the reform on the juveniles affected by placements directly, I create a dataset consisting of juveniles that were put in placement and call this “Placement” dataset. Finally, since I look at both one-year recidivism and two-year recidivism, I create a dataset of juveniles in the age range of 11-14. I choose 11 as the lower bound because juveniles are hardly ever put into placement when they are younger than this age and 14 as the upper bound to ensure all the juveniles reoffending are being accounted for while measuring recidivism.<sup>15</sup> It is important to note here that I am focusing only on the results in the main dataset

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<sup>13</sup>The quantitative comparison between NYC and rest of the state is present in Table A.3 in Appendix A

<sup>14</sup>The missing race data seems to be randomly scattered mostly in the pre-reform period between both NYC and the rest of the state quite evenly

<sup>15</sup>For instance, a 15 year old would not show up in the records if he recidivated after one year since he would enter the adult justice system then

section and all the other samples are used as either a baseline to check the coefficients against or to ensure consistency of estimators across the various samples.

## VI.I Pre-Post reform analysis results for NYC juveniles

### Recidivism:

Firstly, I look at the city of New York and measure the average effect of the treatment on the juveniles' recidivism rates post reform implementation. Table 4 presents the odds ratios<sup>16</sup> of recidivism rates once I control for demographic factors such as age, sex and race, case specific characteristics such as whether the previous offense was a status offense or a felony and interact these variables with the post reform indicator variable.<sup>17</sup> There is no significant change in the odds of recidivating for juveniles who previously committed a misdemeanor, in the post-reform period. This value doesn't vary for females or Black juveniles either. The odds of a juvenile who previously committed a status offense recidivating declines by 51.7% in the post-reform period. This shows that there is a sharp reduction in the likelihood of juveniles that commit escalation of criminal behaviour. The odds of a juvenile who previously committed a felony recidivating declines by 11.75% in the post-reform period. This shows that there is a significant reduction in the likelihood of juveniles who previously committed felonies to continue their criminal behavior.

While I have accounted for other control variables in the previous regression, this data also spans all the five counties of New York City over a period of 12 years. Hence I run regressions to account for both county and year fixed effects, the results of which are presented in Table C.2 in Appendix C. While there seems to be no significant changes in the likelihood of a male juvenile recidivating in the post-reform period, there is an 8.94% (2.15% points) increase in the likelihood of a female juvenile recidivating in the

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<sup>16</sup>Note that since I am calculating the odds ratios, the coefficient for constant wouldn't be present here as well as in the next few tables.

<sup>17</sup>The extended version with all the control variables used for regression can be found in Table C.1 in Appendix C

**Table 4:** Odds ratios of recidivism rates - Pre-post NYC

	Overall	Main	Placement	Ages 11-14
Recidivism				
PostReform (PostR)	1.3920*** (0.08)	1.0579 (0.07)	1.0658 (0.21)	1.0262 (0.10)
PostR × Female	1.0870 (0.07)	1.0868 (0.08)	1.0802 (0.24)	1.0601 (0.10)
PostR × Black	0.7584*** (0.04)	1.0014 (0.07)	1.0855 (0.20)	0.9839 (0.09)
PostR × Status offenses	0.5482*** (0.05)	0.4830*** (0.05)	0.5156 (0.18)	0.4737*** (0.07)
PostR × Felony	0.8552** (0.04)	0.8825* (0.05)	1.0268 (0.17)	0.8510* (0.07)
Observations	58379	32091	3697	15034

Exponentiated coefficients. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation. I check for treatment heterogeneity among females and Black juveniles by interacting PostR with these indicator variables. PostR × Status offenses indicates the effect of the reform on recidivism rates of juveniles who previously only committed a status offense but recidivated to a non-status offense (crimes if committed by adults such as robbery, assault, etc.). PostR × Felony indicates the effect of the reform on recidivism rates of juveniles who previously committed a felony offense and recidivated again to a non-status offense (either misdemeanor or felony). Standard errors provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

post-reform period.<sup>18</sup> Similar to our logistic regression results, the likelihood of juveniles who previously committed a status offense recidivating also sees a decline (27.02% or 6.5% points).

### **Pre-trial detention and sentencing trends:**

Next, I look at the changes in detention and sentencing trends pre-reform and post-reform in NYC. Detention here is an indicator variable with the value 1 if a juvenile was detained prior to their trial/disposition hearing. There are primarily two types of sentences at dispositions that I look at. First, if a case was dismissed, meaning the juvenile is free to go. Second, if the juvenile got placed as a result of the disposition. Panel A of Table 5 presents the odds ratios for the likelihood of a juvenile getting detained when arrested.<sup>19</sup> It shows us that the odds of a juvenile being detained reduced by 41.56% in the post-reform period. There seems to be no statistically significant difference in the effect for female juveniles as well as Black juveniles.

Once I start looking at sentencing trends, I have to remove the placement dataset from my results. Panel B of Table 5 presents the results for dismissals.<sup>20</sup> The odds of a juvenile's case getting dismissed increased by 11.95%. The impact of the effect doesn't seem to vary for female juveniles or Black juveniles. Panel C of Table 5 presents placement trends. The odds of being put into placement for male juveniles in the post-reform period reduced by 18.2%. Surprisingly, the odds of a female juvenile being put into placement in the post-reform period increased by about 24.5%. The massive decline in detention and placement rates along with significant increase in dismissal rates in the post-reform period indicates a very high level of salience as well as rehabilitative leaning tendencies among NYC judges that make the decision.

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<sup>18</sup>Baseline pre-period means provided in Table B.1 in Appendix B

<sup>19</sup>The extended version with all the control variables used for regression can be found in Table C.3 in Appendix C

<sup>20</sup>The extended version with all the control variables used for regression can be found in Table C.4 in Appendix C

**Table 5:** Odds ratios of pre-trial detention and sentencing types

	Overall	Main Dataset	Placement	Ages 11-14
Panel A: Detention				
PostReform (PostR)	0.4454*** (0.04)	0.5844*** (0.06)	0.4749** (0.12)	0.6303** (0.10)
PostR × Female	0.9631 (0.10)	1.1191 (0.15)	1.0333 (0.30)	0.9339 (0.18)
PostR × Black	1.4819*** (0.15)	1.0895 (0.13)	1.2257 (0.33)	1.0511 (0.19)
Panel B: Dismissed				
PostReform (PostR)	1.1842*** (0.04)	1.1195* (0.05)		1.0737 (0.08)
PostR × Female	0.9828 (0.05)	0.9438 (0.05)		0.9021 (0.07)
PostR × Black	0.9519 (0.04)	1.0137 (0.05)		1.0445 (0.08)
Panel C: Out-of-home Placement				
PostReform (PostR)	0.6605*** (0.04)	0.8180* (0.07)		0.9098 (0.11)
PostR × Female	1.2375** (0.09)	1.2538* (0.12)		1.2643 (0.17)
PostR × Black	1.1346 (0.08)	0.9144 (0.08)		0.7275* (0.10)
Observations	58379	32091	3697	15034

Exponentiated coefficients. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation. I check for treatment heterogeneity among females and Black juveniles by interacting PostR with these indicator variables. Standard errors provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

**Table 6:** Odds ratios of arrests

	Overall	Main Dataset	Placement	Ages 11-14
Panel A: Non-status				
PostReform (PostR)	0.5426*** (0.02)	0.5517*** (0.04)	0.3488*** (0.10)	0.5453*** (0.07)
PostR × Female	0.9963 (0.06)	0.9150 (0.07)	1.2411 (0.31)	0.8225 (0.10)
PostR × Black	1.7500*** (0.11)	1.7907*** (0.14)	2.1287** (0.62)	1.7684*** (0.23)
Panel B: Felony				
PostReform (PostR)	0.8511*** (0.03)	1.0072 (0.05)	0.9448 (0.14)	0.9430 (0.07)
PostR × Female	0.9766 (0.04)	0.9106 (0.05)	1.0865 (0.19)	0.9123 (0.07)
PostR × Black	1.4281*** (0.06)	1.2198*** (0.06)	1.0473 (0.17)	1.3111*** (0.10)
Observations	58379	32091	3697	15034

Exponentiated coefficients. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation. I check for treatment heterogeneity among females and Black juveniles by interacting PostR with these indicator variables. Standard errors provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

**Arrest trends:**

The last thing I look at before moving on to the difference-in-difference analysis is the arrest trends. Panel A of Table 6 presents the odds ratios of getting arrested.<sup>21</sup> The odds of getting arrested in the post-reform period went down by 44.83%. While there seems to be no variation in the effect of the reform for female juveniles, the odds of getting arrested for Black juveniles increased by about 79.07%. One of the limitations to talking about arrest rates and using them as a proxy for crime rates is that people might argue, rightfully so, that arrest rates don't always necessarily reflect crime incidence rates of a place. Especially if the city is going through a reformative phase of juvenile justice, it is very likely that the police officers are more lenient about making arrests, if they think a case (based on an offense which isn't too serious) won't be taken further by the prosecutors, they might decide not to make an arrest at all. So to differentiate between the decline in arrests due to other factors such as police or prosecutor attitudes, I look at felony arrests. This is because, unlike a misdemeanor, felonies are more serious in nature and the officers have no other option but to arrest the juvenile who committed the felony. Panel B of Table 6 looks at the odds of getting arrested for felonies in the post-reform period. There is no statistical change in the odds of getting arrested for either male or female juveniles in the post-reform period. For Black juveniles however, the odds of getting arrested for a felony offense increases by 21.98% in the post-reform period. Table 6 shows that while most of the decline in arrest rates can be attributed to police behavior towards juveniles, there hasn't been any rise in violent crime in the city in the post-reform period since this would be reflected in the felony arrest trends during that period.

From the pre-post model results, I conclude that there is a significant reduction in the escalation of criminal behavior by juveniles, i.e., juveniles recidivating with a non-status offense when the prior offense was just a status offense. While there seems to be no significant change in the recidivism rates of juveniles who previously committed misdemeanors, there is a significant reduction in the likelihood of previous felony offenders

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<sup>21</sup>The extended version with all the control variables used for regression can be found in Table C.5 in Appendix C

recidivating, implying a decline in continuation of serious criminal behavior. There is also a drastic decline in detention and placement rates as well as an increase in dismissal rates implying the existence of salience and lenient decision making among intake officers and judges. The significant decline in overall arrests also leads to the same conclusion about arresting officers. The felony arrests that don't change significantly allude to the lack of salience among juveniles as well as the fact that there has been no increase in serious crimes committed by juveniles in the city.

## **VI.II Difference-in-difference analysis results for NYC juveniles compared to the rest of the state**

While the results above are quite optimistic, these trends are consistent across the country in this time period. To differentiate the effect of the reform from the overall trend of the juvenile justice moving towards more rehabilitative practices across the nation, I use the difference-in-difference approach using NYC as the treatment group and the rest of New York state as the comparison group. Since there were no other major judicial reforms that happen in the state of New York during the timeline that I'm looking at, I'm not worried about other reforms affecting my results.<sup>22</sup> This is also the reason I do not use another metropolitan city from a different state, which one might argue would be a better comparison group, since I wouldn't be able to account for the effect of different judicial reforms that might have occurred in that state over this period.

### **Recidivism:**

Similar to the structure followed in the pre-post analysis results section, I am first looking at the changes in recidivism rates of NYC juveniles treated by the reform compared to the juveniles in the rest of the state, followed by the changes in their detention and sentencing rates and finish up with the arrest trends. Table 7 presents the difference-in-

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<sup>22</sup>The next major reform in the state of New York is 'Raise the age' reform that is effective October 1st, 2018

**Table 7:** Recidivism rates - Difference-in-difference

	Overall	Main	Placement	Ages 11-14
PostReform (PostR)	-0.0102*** (0.00)	-0.0188*** (0.00)	-0.0111 (0.01)	-0.0302*** (0.01)
NYC	-0.0017 (0.00)	0.0139*** (0.00)	0.0305** (0.01)	0.0196** (0.01)
NYC $\times$ PostR (DiD)	0.0573*** (0.01)	0.0441*** (0.01)	0.0166 (0.03)	0.0628*** (0.02)
DiD $\times$ Female	-0.0230*** (0.01)	-0.0215** (0.01)	-0.0203 (0.03)	-0.0339** (0.01)
DiD $\times$ Black	-0.0346*** (0.01)	-0.0294*** (0.01)	-0.0027 (0.02)	-0.0544*** (0.01)
DiD $\times$ Status offenses	-0.0382*** (0.01)	-0.0295** (0.01)	-0.0495 (0.04)	-0.0283 (0.02)
DiD $\times$ Felony	-0.0122 (0.01)	-0.0075 (0.01)	0.0375 (0.02)	-0.0083 (0.01)
Observations	146510	92821	11960	42716

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation (treatment period). NYC is an indicator variable for juveniles charged/arrested in NYC (treatment group). The effect of the reform is given by interacting these two variables NYC  $\times$  PostR (DiD). I check for treatment heterogeneity among NYC's female and Black juveniles by interacting DiD with these indicator variables. DiD  $\times$  Status offenses indicates the effect of the reform on recidivism rates of NYC juveniles who previously only committed a status offense but recidivated to a non-status offense (crimes if committed by adults such as robbery, assault, etc.) compared to their untreated counterparts. DiD  $\times$  Felony indicates the effect of the reform on recidivism rates of NYC juveniles who previously committed a felony offense and recidivated again to a non-status offense (either misdemeanor or felony) compared to their untreated counterparts. Standard errors provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

difference results where I run a robust regression with all the available controls.<sup>23</sup> On average, the recidivism rates of juveniles across the state in the post-reform period went down by 9.81% (1.88% points). NYC juveniles, on average, are 7.25% (1.39% points) more likely to recidivate as compared to the rest of the state. On average, the recidivism rates of male NYC juveniles has increased by 23% (4.41% points) in the post-reform period compared to juveniles from the rest of the state. On the other hand, compared to female juveniles outside the city, the recidivism rates of female NYC juveniles reduced further by 11.21% (2.15% points) in the post-reform period. Similarly, compared to Black juveniles outside the city, the recidivism rates of Black NYC juveniles reduced further by 15.34% (2.94% points) in the post-reform period. The likelihood of a NYC juvenile who previously committed a status offense recidivating has decreased by 15.39% (2.95% points) as compared to their counterparts from outside the city. There is no significant difference in the likelihood of a NYC juvenile who previously committed a felony recidivating as compared to their counterparts from outside the city.

Table D.2 in Appendix D looks at the recidivism rates while accounting for year fixed effects. The results from this table are similar to our previous table in terms of both magnitude as well as significance. In terms of recidivism, Table 7 and Table D.2 indicate that the demographic groups that are affected most positively by the reform are female and Black city juveniles. These two tables, similar to Table 4 from pre-post analysis show that there is a significant reduction in the likelihood of NYC juveniles committing escalation of criminal behavior in the post-reform period. But there seems to be no significant difference in the likelihood of NYC juveniles who committed felonies previously continuing their criminal behavior when compared with the rest of the state.

### **Pre-trial detention and sentencing trends:**

Panel A of Table 8 looks at the pre-trial detention rates.<sup>24</sup> The likelihood of getting

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<sup>23</sup>The extended version with all the control variables used for regression can be found in Table D.1 in Appendix D

<sup>24</sup>The extended version with all the control variables used for regression can be found in Table D.3 in Appendix D

**Table 8:** Pre-trial detention and sentencing rates - Difference-in-difference

	Overall	Main Dataset	Placement	Ages 11-14
Panel A: Detention				
PostReform (PostR)	-0.0200*** (0.00)	-0.0185*** (0.00)	-0.0485*** (0.01)	-0.0229*** (0.00)
NYC	0.0057*** (0.00)	-0.0159*** (0.00)	-0.0103 (0.01)	-0.0221*** (0.00)
PostR × NYC (DiD)	-0.0122*** (0.00)	0.0151*** (0.00)	0.0089 (0.02)	0.0227*** (0.01)
DiD × Female	0.0124** (0.00)	0.0110** (0.00)	0.0088 (0.02)	0.0088 (0.01)
DiD × Black	-0.0169*** (0.00)	-0.0292*** (0.00)	-0.0209 (0.02)	-0.0324*** (0.01)
Panel B: Dismissed				
PostReform (PostR)	0.0026 (0.00)	-0.0027 (0.00)		0.0102 (0.01)
NYC	0.1129*** (0.00)	0.0851*** (0.00)		0.0923*** (0.01)
PostR × NYC (DiD)	0.0435*** (0.01)	0.0493*** (0.01)		0.0231 (0.02)
DiD × Female	0.0625*** (0.01)	0.0750*** (0.01)		0.0721*** (0.01)
DiD × Black	-0.0609*** (0.01)	-0.0493*** (0.01)		-0.0371** (0.01)
Panel C: Out-of-home Placement				
PostReform (PostR)	0.0120*** (0.00)	0.0087** (0.00)		0.0044 (0.00)
NYC	0.0007 (0.00)	-0.0154*** (0.00)		-0.0268*** (0.00)
PostR × NYC (DiD)	-0.0435*** (0.01)	-0.0263*** (0.01)		-0.0152 (0.01)
DiD × Female	-0.0038 (0.01)	-0.0068 (0.01)		-0.0008 (0.01)
DiD × Black	-0.0006 (0.01)	-0.0035 (0.01)		-0.0239* (0.01)
Observations	146510	92821	11960	42716

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation (treatment period). NYC is an indicator variable for juveniles charged/arrested in NYC (treatment group). The effect of the reform is given by interacting these two variables NYC × PostR (DiD). I check for treatment heterogeneity among NYC's female and Black juveniles by interacting DiD with these indicator variables. Standard errors provided in parentheses. (p-value < 0.05 - \*, < 0.01 - \*\*, < 0.001 - \*\*\*)

detained decreases by 32.91% (1.85% points) in the post-reform period across the state. NYC juveniles on average are 28.29% (1.59% points) less likely to be detained compared to the rest of the state. Compared to the rest of the state, in the post-reform period however, male NYC juveniles are 26.86% (1.51% points) more likely to be detained. Female NYC juveniles seem to follow a similar trend of being 19.57% (1.1% points) more likely to be detained in the post-reform period compared to female juveniles from the rest of the state. Black juveniles in the city on the other hand, are 51.96% (2.9% points) less likely to be detained compared to Black juveniles from the rest of the state in the post-reform period. This along with Table 5 from pre-post analysis indicates that there is salience and rehabilitative leaning tendencies among the judges making the decision across the state and this phenomenon isn't exclusive to the city since most of the reduction seems to be coming from the PostR indicator, although there seems to be definite improvement in the case of Black city juveniles.

Panels B and C of Table 8 provide the regression results for dismissals and placements respectively and hence don't have the placements dataset.<sup>25</sup> Looking at Panel B of Table 8, NYC juveniles on average are 16.62% (8.51% points) more likely to be dismissed compared to the rest of the state. This effect is stronger in the post-reform period when the male NYC juveniles are further 9.63% (4.93% points) more likely to be dismissed compared to juveniles from the rest of the state. The effect is even stronger among female juveniles who are 14.65% (7.5% points) more likely to be dismissed when compared to female juveniles outside the city. Black juveniles on the other hand, are 9.63% (4.93% points) less likely to be dismissed as compared to Black juveniles from the rest of the state. Panel C of Table 8 looks at the placement rates and how the reform affected those over the years. On average, juveniles were 6.6% (0.87% points) more likely to be put into placement in the post-reform period across the state. NYC juveniles on the other hand, are on average, 11.68% (1.54% points) less likely to be put into placement. The reform is associated with a 19.95% (2.63% points) decline in placements of NYC juveniles compared to the rest of the state. This effect doesn't seem to vary for females or Black

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<sup>25</sup>The extended version with all the control variables used for regression can be found in Table D.4 in Appendix D

**Table 9:** Arrest rates - Difference-in-difference

	Overall	Main Dataset	Placement	Ages 11-14
Panel A: Non-status				
PostReform (PostR)	-0.0333*** (0.00)	-0.0137*** (0.00)	-0.0109 (0.01)	-0.0165*** (0.00)
NYC	0.1340*** (0.00)	0.1689*** (0.00)	0.2004*** (0.01)	0.1528*** (0.01)
PostR $\times$ NYC (DiD)	-0.0667*** (0.01)	-0.0538*** (0.01)	-0.0202 (0.02)	-0.0416*** (0.01)
DiD $\times$ Female	-0.0264*** (0.01)	-0.0060 (0.01)	0.0957*** (0.02)	-0.0056 (0.01)
DiD $\times$ Black	0.1123*** (0.01)	0.0556*** (0.01)	-0.0164 (0.02)	0.0398*** (0.01)
Panel B: Felony				
PostReform (PostR)	-0.0018 (0.00)	0.0041 (0.00)	0.0026 (0.01)	0.0104 (0.01)
NYC	0.1597*** (0.00)	0.1624*** (0.00)	0.2027*** (0.01)	0.1933*** (0.01)
PostR $\times$ NYC (DiD)	-0.0376*** (0.01)	-0.0154 (0.01)	0.0093 (0.03)	-0.0204 (0.01)
DiD $\times$ Female	-0.0074 (0.01)	0.0046 (0.01)	0.0204 (0.03)	0.0069 (0.01)
DiD $\times$ Black	0.0837*** (0.01)	0.0521*** (0.01)	-0.0258 (0.03)	0.0476*** (0.01)
Observations	146510	92821	11960	42716

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation (treatment period). NYC is an indicator variable for juveniles charged/arrested in NYC (treatment group). The effect of the reform is given by interacting these two variables NYC  $\times$  PostR (DiD). I check for treatment heterogeneity among NYC's female and Black juveniles by interacting DiD with these indicator variables. Standard errors provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

juveniles. Table 8 along with Table 5 from pre-post analysis indicate that in terms of both dismissals as well as placements, the city judges are executing more rehabilitative leaning decisions as compared to the judges outside of the city. However, this leniency isn't being extended towards Black juveniles when it comes to dismissal of cases.

**Arrest trends:**

I look at arrest trends to check for crime rate trends over the years. I additionally look at felony arrests that act as better proxies for crime trends to eliminate officers' bias/leniency in making arrests. Panel A of Table 9 provides the results for arrests arising from non-status offenses.<sup>26</sup> I see that on average, arrest rates have gone down by 2.05% (1.37% points) in the post-reform period. NYC juveniles are 25.3% (16.89% points) more likely to be arrested compared to juveniles outside the city. The reform is associated with a 8.06% (5.38% points) decline in arrest rates of NYC juveniles compared to rest of the state. Black juveniles in the city however are 8.33% (5.56% points) more likely to be arrested compared to other Black juveniles outside the city. Panel B of Table 9 looks at felony arrests made over the years. NYC juveniles are on average 58.33% (16.24%) more likely to be arrested for felonies as compared to the rest of the state. There seems to be no significant effect of the reform on the arrest rates of male or female juveniles in the city. Black city juveniles on the other hand are 18.71% (5.21% points) more likely to be arrested for felonies as compared to Black juveniles outside the city. Table 9 along with Table 6 from pre-post analysis indicate that while most of the decline in arrest rates can be attributed to police behavior towards juveniles, there hasn't been any rise in violent crime in the city in the post-reform period since this would be reflected in the felony arrest trends during that period.

From the difference-in-difference model results, I conclude that the reform had a positive impact (decline in recidivism) among female and black juveniles in terms of recidivism. Similar to the pre-post model, there is a significant reduction in the escalation of criminal behavior by juveniles, i.e., juveniles recidivating with a non-status offense

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<sup>26</sup>The extended version with all the control variables used for regression can be found in Table D.5 in Appendix D

when the prior offense was just a status offense. Again, similar to the pre-post model, there is a reduction in the likelihood of previous felony offenders recidivating, implying a decline in continuation of serious criminal behavior, although this isn't statistically significant. However, unlike the pre-post model, the detention rates here have gone up, showcasing that the decline in detention rates from pre-post model is associated more with the trend of juvenile justice moving towards rehabilitative approach rather than the effect of the reform. The decline in arrest and placement rates as well as an increase in dismissal rates from the difference-in-difference model are consistent with the pre-post model results, both implying the existence of salience and lenient decision making among arresting officers and judges. The felony arrests that don't change significantly (similar to pre-post model results) allude to the lack of salience among juveniles as well as the fact that there has been no increase in serious crimes committed by juveniles in the city. Unlike the pre-post model results, the difference-in-difference model results show a lot of heterogeneity in the effect of the reform among various demographics.

An advantage of using a pre-post model is the assurance that the composition of juveniles' demographics, offense types and offense severity are comparable in the pre-reform and post-reform period. The limitation of this method is it fails to isolate the effect of the reform from the overall trend of juvenile justice moving towards rehabilitative phase. This limitation is addressed by using the difference-in-difference model that lets us use a comparison group to look at and isolate the effect of the reform. However, difference-in-difference model comes with its own limitation where it's really hard to justify the comparison group being a good comparison group. I choose the rest of New York state as opposed to a different metropolitan city to remove the risk of other reforms or changes happening in the new comparison city I wouldn't be able to account for.

## VII. Conclusion

This paper looks at the Close to Home (C2H) reform implemented in the city of New York in the year 2012. The reform transferred the care and custody of NYC juveniles to the city of New York instead of the state as was formerly the case. The expected overall

impact of this reform on recidivism would be unclear since the proximity and attachment to the community could have both positive as well as negative impact on the juveniles' chances of recidivating. By staying closer to home, assuming the juvenile has a stable house/family, and connected to the community, assuming it is beneficial for the juvenile, the juvenile would deter from committing future offenses. However, if the juvenile didn't have a stable house/family, and/or stays connected to a community that has their peer network of partner/s in crime, this would only inevitably lead to higher recidivism post the implementation of reform. Without even these indirect effects, the very fact that the law now dictates the juveniles get to stay in the city close to home instead of being sent far off might act as a decrease in their deterrence levels.

Using pre-post analysis of NYC juveniles, I find that there is a significant decline in the proportion of juveniles indulging in both escalation of criminal behavior (of almost 52%) as well as continuation of criminal behavior by felony offenders (of almost 12%). Using difference-in-difference methodology, and using NYC juveniles as my treatment group with the rest of the state as the comparison group, I find the net impact of the reform leads to an increase in the recidivism rates of the male juveniles (by 23%) getting treated but a decrease in the recidivism rates of both female (by 11.21%) and Black juveniles (by 15.34%) getting the same treatment. I also find that there is a significant decline in the likelihood of treated juveniles indulging in escalation of criminal behavior (of 15.39%).

It is clear from the above results as well as Figures A.4-A.6 in Appendix A that while there is no salience among juveniles when it comes to committing offenses, there is clear salience and conscious choices by the justice system to better the arrest, detention and sentencing trends in favor of juveniles (Decrease in arrests, detentions and placements and increase in dismissals). For instance, the State of New York has been gradually moving from a punitive approach to a more inclusive, rehabilitatory approach towards juveniles in the last decade. This is reflected in the various stages of a juvenile being processed through a justice system where we see juveniles being directed away from the justice system towards other ways of treatments. Police officers are arresting fewer juveniles by

the year accounting for the number of incidents reported in a year. Juveniles may be put on probation or community service instead of being placed out-of-home. Unless the charges are serious enough, most judges are moving away from sentencing the juveniles to harsh punishments.

An advantage to using both pre-post comparison and difference-in-difference analysis is that we can deduce not just what's happening in the city in the post-reform period but also compare it with what's going on in the rest of the state. We can see that not only has the escalation of criminal behavior gone down in the post-reform period in the city, it has gone down by a lot more compared to its comparison group. While detention rates have gone down in the post-reform period in the city and NYC juveniles in general are less likely to be detained as compared to the rest of the state, judges from outside the city seem to be way more lenient compared to the city judges when making the call on detention. Except in the case of Black juveniles, where city judges seem to be more lenient as compared to judges outside. The reverse is true when it comes to dismissals, where the dismissal rates have gone up in the post-reform period in the city, and in general are higher for NYC juveniles on average, but they have gone down for Black city juveniles as compared to their counterparts outside. This indicates that while judges outside the city are way more likely to detain a Black juvenile as compared to a city judge, they are also more likely to dismiss a Black juvenile as compared to a city judge. The story of placements and arrests are quite similar in the sense that both the placement as well as arrest rates haven't just gone down in the post-reform period in the city, they have gone down by a lot more compared to the comparison group. This indicates that the reduction in these arrests stem from both police officers' attitude towards juveniles as well as juveniles' behavior. It is important to note here that we cannot attribute the changes in recidivism in the paper to the singular concept of staying closer to home but to the umbrella that also covers the rehabilitative nature of the reform as well as the decisions made by the judicial people who are trying to keep the spirit of the reform by altering their choices in making detention calls and sentencing choices. Based on the results, I would say that while the reform itself seems to be helping the city juveniles across most vulnerable demographics such as female and Black juveniles, a few things

to explore the story behind would be the decrease in the likelihood of getting a case dismissal among Black juveniles, the increase in likelihood of placement for females in the post-reform period, and the increase in the likelihood of getting arrested for Black juveniles that is much higher than the rest for both non-status offenses as well as felonies. There are also data limitations in the paper such as 40% of the records having missing race information, and no information on the actual distance between the juvenile's home and the facility the juvenile is being sent to. The initial estimates of the paper incentivize me to pursue this topic further, to find both, more comprehensive data and better ways of answering the research question. In future research, I hope to get more precise results with additional data by using distance as an instrumental variable for recidivism.

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### Appendix A

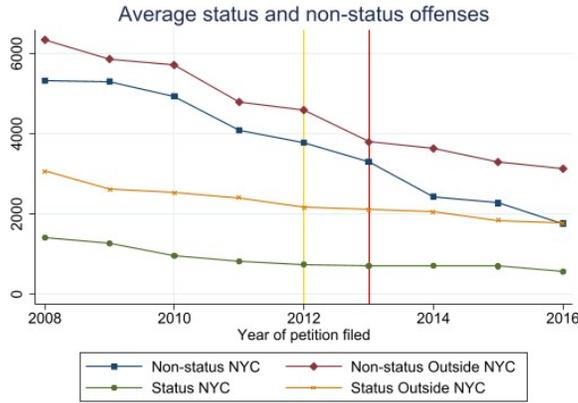


Figure A.1 Average status and non-status offenses

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H

Table A.1: Demographic Statistics

	Status offenses		Non-status offenses	
	mean	sd	mean	sd
Age at referral	14.8911	(1.3567)	14.2284	(1.2124)
Female	0.5507	(0.4974)	0.2291	(0.4203)
White	0.2557	(0.4363)	0.2182	(0.4130)
Black	0.2726	(0.4453)	0.3378	(0.4730)
Native	0.0049	(0.0696)	0.0034	(0.0580)
Asian/Pacific Islander	0.0068	(0.0822)	0.0067	(0.0817)
Other Race	0.0619	(0.2411)	0.0251	(0.1565)
PostR	0.3301	(0.4703)	0.3098	(0.4624)
NYC	0.2584	(0.4378)	0.4370	(0.4960)
Observations	51404		129679	

Source: NCJJ Data. Status offenses are offenses due to age such as truancy, underage drinking/driving, etc. Non-status offenses are crimes if committed by adults such as robbery, assault, etc. Natives are either American or Alaskan natives. NYC is an indicator variable for juveniles charged/arrested in NYC and PostR is an indicator variable for period post reform implementation.

**Table A.2:** Sentencing statistics - NYC

	Status offenses		Non-status offenses	
	mean	sd	mean	sd
Detention	0.0053	(0.0729)	0.0879	(0.2832)
Dismissed	0.9042	(0.2943)	0.5269	(0.4993)
Probation	0.0190	(0.1367)	0.3296	(0.4701)
Out-of-home Placement	0.0708	(0.2565)	0.1356	(0.3424)
Observations	13282		56664	

Source: NCJJ Data. Status offenses are offenses due to age such as truancy, underage drinking/driving, etc. Non-status offenses are crimes if committed by adults such as robbery, assault, etc.

**Table A.3:** Pre-trends in recidivism rates (1 year recidivism)

	Comparison group	Treatment group	Difference
Recidivism - Overall	0.1574 (0.3642)	0.1606 (0.3671)	-0.0032 (-1.4953)
Recidivism - Main	0.1576 (0.3643)	0.1612 (0.3678)	-0.0037 (-1.7186)
Recidivism - Placement	0.1768 (0.3815)	0.1783 (0.3828)	-0.0015 (-0.2409)
Recidivism - Age-specific	0.2257 (0.4181)	0.2298 (0.4207)	-0.0040 (-1.1056)

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. t-statistics provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

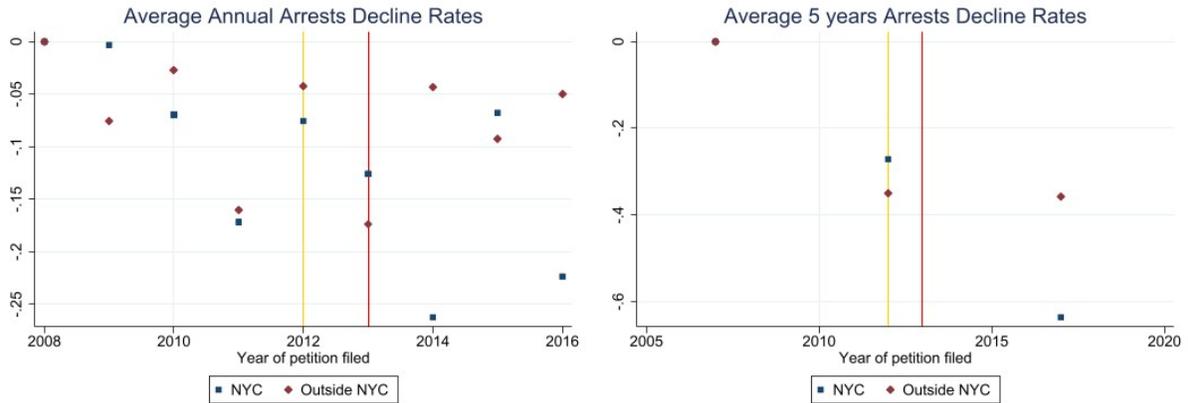


Figure A.2 Arrest rates trends

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H

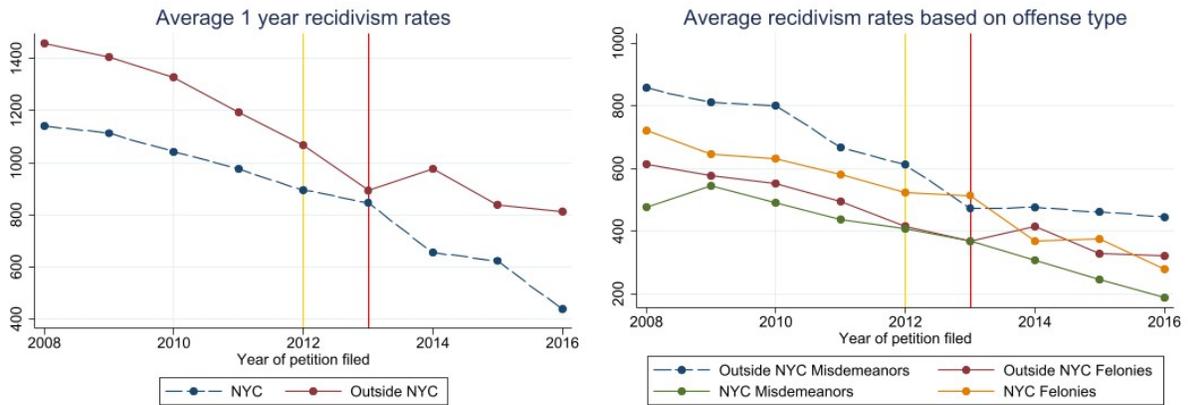


Figure A.3 Average recidivism rates and recidivism rates based on offense type

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H

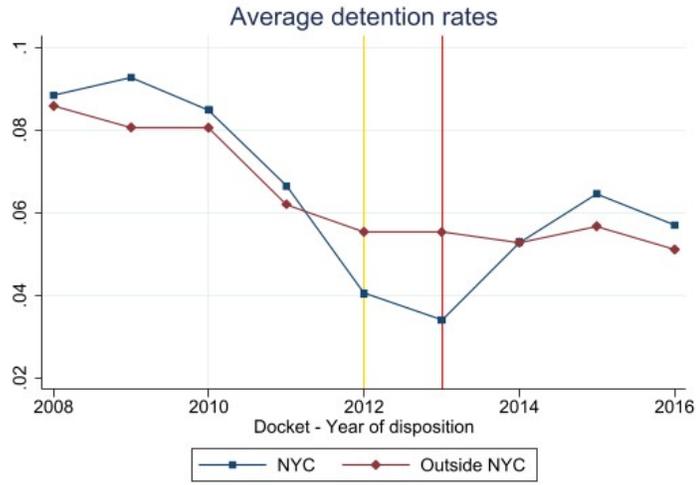


Figure A.4 Average pre-trial detention rates

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H

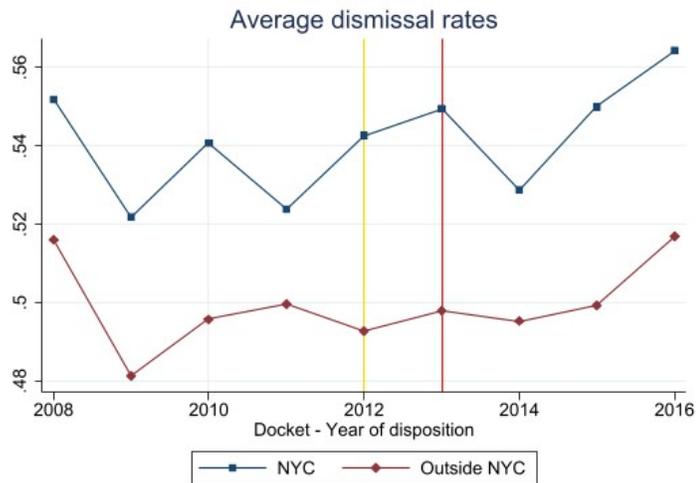


Figure A.5 Average dismissal rates

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H

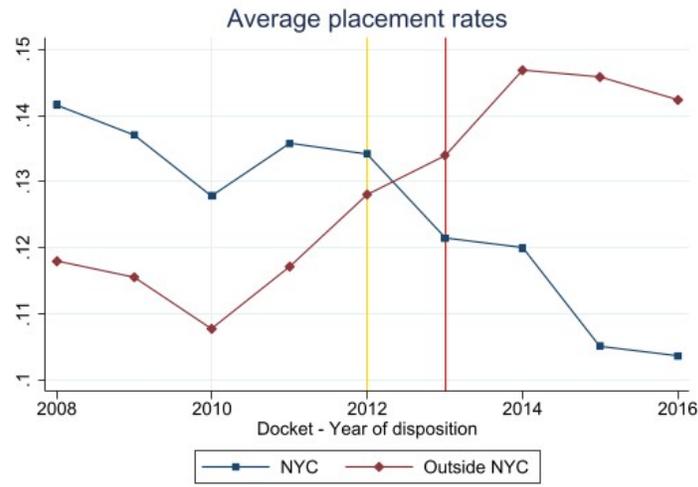


Figure A.6 Average placement rates

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H

**Appendix B: Baseline means****Table B.1:** Baseline means

Pre-period means	Overall		Main		Placement		Ages 11-14	
Arrests	0.8175	(0.39)	0.8714	(0.33)	0.9304	(0.25)	0.9099	(0.29)
Misdemeanor	0.3755	(0.48)	0.4081	(0.49)	0.3619	(0.48)	0.3990	(0.49)
Felony	0.4420	(0.50)	0.4633	(0.50)	0.5686	(0.50)	0.5110	(0.50)
Detention	0.0731	(0.26)	0.0617	(0.24)	0.1361	(0.34)	0.0638	(0.24)
Dismissed	0.5929	(0.49)	0.5712	(0.49)	0.0000	(0.00)	0.5565	(0.50)
Out-of-home Placement	0.1255	(0.33)	0.1263	(0.33)	1.0000	(0.00)	0.1255	(0.33)
Recidivism	0.1662	(0.37)	0.2406	(0.43)	0.2643	(0.44)	0.3269	(0.47)
Observations	40433		15814		1998		7838	

Control means	Overall		Main		Placement		Ages 11-14	
Arrests	0.6768	(0.47)	0.6675	(0.47)	0.6813	(0.47)	0.7433	(0.44)
Misdemeanor	0.3988	(0.49)	0.3891	(0.49)	0.3550	(0.48)	0.4353	(0.50)
Felony	0.2779	(0.45)	0.2784	(0.45)	0.3263	(0.47)	0.3080	(0.46)
Detention	0.0559	(0.23)	0.0562	(0.23)	0.1080	(0.31)	0.0650	(0.25)
Dismissed	0.5071	(0.50)	0.5121	(0.50)	0.0000	(0.00)	0.4786	(0.50)
Probation	0.3385	(0.47)	0.3304	(0.47)	0.0000	(0.00)	0.3507	(0.48)
Out-of-home Placement	0.1199	(0.32)	0.1318	(0.34)	1.0000	(0.00)	0.1452	(0.35)
Recidivism	0.1590	(0.37)	0.1917	(0.39)	0.2056	(0.40)	0.2742	(0.45)
Observations	56190		30992		4085		14053	

## Appendix C: Additional Pre-post analysis results

**Table C.1:** Odds ratios of recidivism rates - Pre-post NYC

	Overall	Main	Placement	Ages 11-14
Recidivism				
PostReform (PostR)	1.3920*** (0.08)	1.0579 (0.07)	1.0658 (0.21)	1.0262 (0.10)
Female	0.5007*** (0.02)	0.5033*** (0.03)	0.5763*** (0.09)	0.4930*** (0.03)
PostR × Female	1.0870 (0.07)	1.0868 (0.08)	1.0802 (0.24)	1.0601 (0.10)
Black	2.1351*** (0.06)	1.3651*** (0.06)	1.2413 (0.15)	1.3646*** (0.08)
PostR × Black	0.7584*** (0.04)	1.0014 (0.07)	1.0855 (0.20)	0.9839 (0.09)
Status offenses	0.8149*** (0.04)	1.0676 (0.08)	0.9215 (0.23)	1.5564*** (0.15)
PostR × Status offenses	0.5482*** (0.05)	0.4830*** (0.05)	0.5156 (0.18)	0.4737*** (0.07)
Felony	1.0639* (0.03)	1.0269 (0.04)	1.0953 (0.12)	1.0807 (0.06)
PostR × Felony	0.8552** (0.04)	0.8825* (0.05)	1.0268 (0.17)	0.8510* (0.07)
Age at referral	0.7433*** (0.01)	0.7326*** (0.01)	0.6588*** (0.02)	1.1225*** (0.03)
Detention	0.9853 (0.05)	1.1398* (0.07)	0.9907 (0.13)	1.0193 (0.08)
Dismissed	2.4097*** (0.47)	1.1305 (0.27)	1.0000 (.)	1.3610 (0.45)
Probation	3.5414*** (0.69)	1.6528* (0.39)	1.0000 (.)	2.3007* (0.77)
Out-of-home Placement	3.2367*** (0.63)	1.5102 (0.36)	1.0000 (.)	1.9763* (0.66)
Observations	58379	32091	3697	15034

Exponentiated coefficients. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation. I check for treatment heterogeneity among females and Black juveniles by interacting PostR with these indicator variables. PostR × Status offenses indicates the effect of the reform on recidivism rates of juveniles who previously only committed a status offense but recidivated to a non-status offense (crimes if committed by adults such as robbery, assault, etc.). PostR × Felony indicates the effect of the reform on recidivism rates of juveniles who previously committed a felony offense and recidivated again to a non-status offense (either misdemeanor or felony). Standard errors provided in parentheses. (p-value < 0.05 - \*, < 0.01 - \*\*, < 0.001 - \*\*\*)

**Table C.2:** Recidivism rates - Pre-post NYC (With fixed effects)

	Overall	Main	Placement	Ages 11-14
PostReform (PostR)	0.0622*** (0.01)	0.0228 (0.02)	0.0216 (0.06)	0.0052 (0.03)
Female	-0.0806*** (0.00)	-0.1101*** (0.01)	-0.0966*** (0.02)	-0.1409*** (0.01)
PostR × Female	-0.0016 (0.01)	0.0215* (0.01)	0.0230 (0.03)	0.0183 (0.02)
Black	0.1110*** (0.00)	0.0462*** (0.01)	0.0288 (0.02)	0.0553*** (0.01)
PostR × Black	-0.0489*** (0.01)	-0.0077 (0.01)	0.0219 (0.03)	-0.0088 (0.02)
Status offenses	-0.0036 (0.00)	0.0106 (0.01)	0.0111 (0.04)	0.0738*** (0.02)
PostR × Status offenses	-0.0641*** (0.01)	-0.0650*** (0.01)	-0.0864 (0.05)	-0.1108*** (0.03)
Felony	0.0092* (0.00)	0.0068 (0.01)	0.0168 (0.02)	0.0175 (0.01)
PostR × Felony	-0.0197* (0.01)	-0.0188 (0.01)	0.0217 (0.03)	-0.0250 (0.02)
Age at referral	-0.0422*** (0.00)	-0.0534*** (0.00)	-0.0815*** (0.01)	0.0246*** (0.00)
Detention	-0.0057 (0.01)	0.0175 (0.01)	-0.0046 (0.02)	-0.0049 (0.02)
Dismissed	0.0753*** (0.01)	0.0254 (0.03)	0.0000 (.)	0.0695 (0.05)
Probation	0.1375*** (0.01)	0.0983** (0.03)	0.0000 (.)	0.1906*** (0.05)
Out-of-home Placement	0.1168*** (0.01)	0.0758* (0.03)	0.0000 (.)	0.1533** (0.05)
Constant	0.6660*** (0.02)	0.9366*** (0.05)	1.4029*** (0.11)	-0.1387 (0.08)
Observations	58379	32091	3697	15034

Controlling for county/borough and year fixed effects. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation. I check for treatment heterogeneity among females and Black juveniles by interacting PostR with these indicator variables. PostR × Status offenses indicates the effect of the reform on recidivism rates of juveniles who previously only committed a status offense but recidivated to a non-status offense (crimes if committed by adults such as robbery, assault, etc.). PostR × Felony indicates the effect of the reform on recidivism rates of juveniles who previously committed a felony offense and recidivated again to a non-status offense (either misdemeanor or felony). Standard errors provided in parentheses. (p-value < 0.05 - \*, < 0.01 - \*\*, < 0.001 - \*\*\*)

**Table C.3:** Odds ratios of pre-trial detention

	Overall	Main Dataset	Placement	Ages 11-14
Detention				
PostReform (PostR)	0.4454*** (0.04)	0.5844*** (0.06)	0.4749** (0.12)	0.6303** (0.10)
Female	0.8729** (0.04)	0.7586** (0.07)	1.0544 (0.19)	0.8001 (0.10)
PostR × Female	0.9631 (0.10)	1.1191 (0.15)	1.0333 (0.30)	0.9339 (0.18)
Black	0.7188*** (0.04)	1.0013 (0.08)	1.0038 (0.16)	0.9951 (0.11)
PostR × Black	1.4819*** (0.15)	1.0895 (0.13)	1.2257 (0.33)	1.0511 (0.19)
Status offenses	0.0555*** (0.01)	0.0635*** (0.02)	0.0244*** (0.02)	0.0854*** (0.03)
Felony	0.9676 (0.03)	1.0385 (0.06)	1.0682 (0.12)	1.1465 (0.09)
Age at referral	1.0268 (0.02)	1.0304 (0.02)	0.9796 (0.05)	1.1810*** (0.06)
Observations	58379	32091	3697	15034

Exponentiated coefficients. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation. I check for treatment heterogeneity among females and Black juveniles by interacting PostR with these indicator variables. Standard errors provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

**Table C.4:** Odds ratios of sentencing

	Overall	Main Dataset	Ages 11-14
Panel A: Dismissed			
PostReform (PostR)	1.1842*** (0.04)	1.1195* (0.05)	1.0737 (0.08)
Female	1.4357*** (0.04)	1.4795*** (0.06)	1.5221*** (0.09)
PostR × Female	0.9828 (0.05)	0.9438 (0.05)	0.9021 (0.07)
Black	0.9841 (0.02)	1.0118 (0.04)	1.0076 (0.05)
PostR × Black	0.9519 (0.04)	1.0137 (0.05)	1.0445 (0.08)
Status offenses	6.3784*** (0.24)	6.3843*** (0.35)	5.2544*** (0.46)
Felony	0.7279*** (0.01)	0.7135*** (0.02)	0.7226*** (0.03)
Age at referral	0.9723*** (0.01)	1.0040 (0.01)	0.9186*** (0.02)
Panel B: Out-of-home Placement			
PostReform (PostR)	0.6605*** (0.04)	0.8180* (0.07)	0.9098 (0.11)
Female	0.6457*** (0.03)	0.6275*** (0.04)	0.6540*** (0.06)
PostR × Female	1.2375** (0.09)	1.2538* (0.12)	1.2643 (0.17)
Black	1.0741 (0.04)	1.2562*** (0.08)	1.2511* (0.12)
PostR × Black	1.1346 (0.08)	0.9144 (0.08)	0.7275* (0.10)
Status offenses	0.6247*** (0.03)	0.6787*** (0.05)	0.8325 (0.09)
Felony	1.2768*** (0.04)	1.3290*** (0.05)	1.2538*** (0.07)
Age at referral	1.0975*** (0.01)	1.0733*** (0.02)	1.1980*** (0.05)
Observations	58379	32091	15034

Exponentiated coefficients. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation. I check for treatment heterogeneity among females and Black juveniles by interacting PostR with these indicator variables. Standard errors provided in parentheses. (p-value < 0.05 - \*, < 0.01 - \*\*, < 0.001 - \*\*\*)

**Table C.5:** Odds ratios of arrests

	Overall	Main Dataset	Placement	Ages 11-14
Panel A: Non-status				
PostReform (PostR)	0.5426*** (0.02)	0.5517*** (0.04)	0.3488*** (0.10)	0.5453*** (0.07)
Female	0.1538*** (0.00)	0.1752*** (0.01)	0.1209*** (0.02)	0.1665*** (0.02)
PostR × Female	0.9963 (0.06)	0.9150 (0.07)	1.2411 (0.31)	0.8225 (0.10)
Black	1.6934*** (0.07)	1.1969** (0.07)	0.7113 (0.16)	1.1107 (0.11)
PostR × Black	1.7500*** (0.11)	1.7907*** (0.14)	2.1287** (0.62)	1.7684*** (0.23)
Age at referral	0.4580*** (0.01)	0.5014*** (0.01)	0.5457*** (0.05)	0.8365*** (0.03)
Panel B: Felony				
PostReform (PostR)	0.8511*** (0.03)	1.0072 (0.05)	0.9448 (0.14)	0.9430 (0.07)
Female	0.4950*** (0.01)	0.5726*** (0.02)	0.4057*** (0.05)	0.5978*** (0.03)
PostR × Female	0.9766 (0.04)	0.9106 (0.05)	1.0865 (0.19)	0.9123 (0.07)
Black	1.1285*** (0.03)	1.1761*** (0.04)	1.1072 (0.12)	1.0400 (0.06)
PostR × Black	1.4281*** (0.06)	1.2198*** (0.06)	1.0473 (0.17)	1.3111*** (0.10)
Age at referral	0.7516*** (0.01)	0.7908*** (0.01)	0.8537*** (0.03)	0.8678*** (0.02)
Observations	58379	32091	3697	15034

Exponentiated coefficients. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation. I check for treatment heterogeneity among females and Black juveniles by interacting PostR with these indicator variables. Standard errors provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

**Appendix D: Additional Difference-in-difference results**

**Table D.1: Recidivism rates - Difference-in-difference**

	Overall	Main	Placement	Ages 11-14
PostReform (PostR)	-0.0102*** (0.00)	-0.0188*** (0.00)	-0.0111 (0.01)	-0.0302*** (0.01)
NYC	-0.0017 (0.00)	0.0139*** (0.00)	0.0305** (0.01)	0.0196** (0.01)
NYC × PostR (DiD)	0.0573*** (0.01)	0.0441*** (0.01)	0.0166 (0.03)	0.0628*** (0.02)
DiD × Female	-0.0230*** (0.01)	-0.0215** (0.01)	-0.0203 (0.03)	-0.0339** (0.01)
DiD × Black	-0.0346*** (0.01)	-0.0294*** (0.01)	-0.0027 (0.02)	-0.0544*** (0.01)
DiD × Status offenses	-0.0382*** (0.01)	-0.0295** (0.01)	-0.0495 (0.04)	-0.0283 (0.02)
DiD × Felony	-0.0122 (0.01)	-0.0075 (0.01)	0.0375 (0.02)	-0.0083 (0.01)
Female	-0.0605*** (0.00)	-0.0684*** (0.00)	-0.0586*** (0.01)	-0.0924*** (0.01)
Black	0.1018*** (0.00)	0.0759*** (0.00)	0.0552*** (0.01)	0.1105*** (0.00)
Status offenses	-0.0442*** (0.00)	-0.0475*** (0.00)	-0.0431*** (0.01)	-0.0349*** (0.01)
Felony	0.0017 (0.00)	-0.0046 (0.00)	-0.0122 (0.01)	-0.0047 (0.01)
Age at referral	-0.0342*** (0.00)	-0.0409*** (0.00)	-0.0514*** (0.00)	0.0210*** (0.00)
Detention	0.0190*** (0.00)	0.0395*** (0.01)	0.0012 (0.01)	0.0352*** (0.01)
Dismissed	0.0625*** (0.01)	0.0575*** (0.01)	0.0000 (.)	0.0919*** (0.01)
Probation	0.0883*** (0.01)	0.0861*** (0.01)	0.0000 (.)	0.1395*** (0.02)
Out-of-home Placement	0.0865*** (0.01)	0.0803*** (0.01)	0.0000 (.)	0.1195*** (0.02)
Constant	0.5852*** (0.01)	0.7137*** (0.02)	0.9481*** (0.05)	-0.1349*** (0.04)
Observations	146510	92821	11960	42716

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation (treatment period). NYC is an indicator variable for juveniles charged/arrested in NYC (treatment group). The effect of the reform is given by interacting these two variables NYC × PostR (DiD). I check for treatment heterogeneity among NYC's female and Black juveniles by interacting DiD with these indicator variables. DiD × Status offenses indicates the effect of the reform on recidivism rates of NYC juveniles who previously only committed a status offense but recidivated to a non-status offense (crimes if committed by adults such as robbery, assault, etc.) compared to their untreated counterparts. DiD × Felony indicates the effect of the reform on recidivism rates of NYC juveniles who previously committed a felony offense and recidivated again to a non-status offense (either misdemeanor or felony) compared to their untreated counterparts. Standard errors provided in parentheses. (p-value < 0.05 - \*, < 0.01 - \*\*, < 0.001 - \*\*\*)

**Table D.2:** Recidivism rates - Difference-in-difference (With fixed effects)

	Overall	Main	Placement	Ages 11-14
NYC	-0.0005 (0.00)	0.0141** (0.00)	0.0287* (0.01)	0.0207** (0.01)
PostReform (PostR)	0.0034 (0.01)	0.0159 (0.01)	0.0632* (0.02)	0.0378* (0.02)
NYC X PostR (DiD)	0.0530*** (0.01)	0.0396*** (0.01)	-0.0029 (0.03)	0.0514** (0.02)
Female	-0.0609*** (0.00)	-0.0684*** (0.00)	-0.0583*** (0.01)	-0.0924*** (0.01)
DiD × Female	-0.0235*** (0.01)	-0.0227** (0.01)	-0.0172 (0.03)	-0.0349** (0.01)
Black	0.1019*** (0.00)	0.0759*** (0.00)	0.0541*** (0.01)	0.1103*** (0.00)
DiD × Black	-0.0351*** (0.01)	-0.0306*** (0.01)	-0.0015 (0.02)	-0.0564*** (0.01)
Status offenses	-0.0440*** (0.00)	-0.0472*** (0.00)	-0.0440*** (0.01)	-0.0346*** (0.01)
DiD × Status offenses	-0.0350*** (0.01)	-0.0233** (0.01)	-0.0381 (0.03)	-0.0166 (0.02)
Felony	0.0012 (0.00)	-0.0039 (0.00)	-0.0138 (0.01)	-0.0040 (0.01)
DiD × Felony	-0.0074 (0.01)	-0.0030 (0.01)	0.0576* (0.03)	0.0013 (0.01)
Age at referral	-0.0343*** (0.00)	-0.0409*** (0.00)	-0.0507*** (0.00)	0.0209*** (0.00)
Detention	0.0201*** (0.00)	0.0378*** (0.01)	0.0025 (0.01)	0.0359*** (0.01)
Dismissed	0.0566*** (0.01)	0.0562*** (0.01)	0.0000 (.)	0.0931*** (0.01)
Probation	0.0818*** (0.01)	0.0848*** (0.01)	0.0000 (.)	0.1416*** (0.01)
Out-of-home Placement	0.0779*** (0.01)	0.0773*** (0.01)	0.0000 (.)	0.1177*** (0.01)
Constant	0.5882*** (0.01)	0.6983*** (0.02)	0.9028*** (0.05)	-0.1670*** (0.04)
Observations	146095	92809	11960	42711

Controlling for year level fixed effects. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation (treatment period). NYC is an indicator variable for juveniles charged/arrested in NYC (treatment group). The effect of the reform is given by interacting these two variables NYC × PostR (DiD). I check for treatment heterogeneity among NYC's female and Black juveniles by interacting DiD with these indicator variables. DiD × Status offenses indicates the effect of the reform on recidivism rates of NYC juveniles who previously only committed a status offense but recidivated to a non-status offense (crimes if committed by adults such as robbery, assault, etc.) compared to their untreated counterparts. DiD × Felony indicates the effect of the reform on recidivism rates of NYC juveniles who previously committed a felony offense and recidivated again to a non-status offense (either misdemeanor or felony) compared to their untreated counterparts. Standard errors provided in parentheses. (p-value < 0.05 - \*, < 0.01 - \*\*, < 0.001 - \*\*\*)

**Table D.3:** Pre-trial detention rates - Difference-in-difference

	Overall	Main Dataset	Placement	Ages 11-14
PostReform (PostR)	-0.0200*** (0.00)	-0.0185*** (0.00)	-0.0485*** (0.01)	-0.0229*** (0.00)
NYC	0.0057*** (0.00)	-0.0159*** (0.00)	-0.0103 (0.01)	-0.0221*** (0.00)
PostR $\times$ NYC (DiD)	-0.0122*** (0.00)	0.0151*** (0.00)	0.0089 (0.02)	0.0227*** (0.01)
DiD $\times$ Female	0.0124** (0.00)	0.0110** (0.00)	0.0088 (0.02)	0.0088 (0.01)
DiD $\times$ Black	-0.0169*** (0.00)	-0.0292*** (0.00)	-0.0209 (0.02)	-0.0324*** (0.01)
Female	-0.0101*** (0.00)	-0.0110*** (0.00)	0.0043 (0.01)	-0.0137*** (0.00)
Black	0.0143*** (0.00)	0.0295*** (0.00)	0.0333*** (0.01)	0.0320*** (0.00)
Status offenses	-0.0607*** (0.00)	-0.0509*** (0.00)	-0.0999*** (0.01)	-0.0492*** (0.00)
Felony	0.0115*** (0.00)	0.0171*** (0.00)	0.0209*** (0.01)	0.0218*** (0.00)
Age at referral	0.0019*** (0.00)	0.0014* (0.00)	-0.0022 (0.00)	0.0079*** (0.00)
Constant	0.0452*** (0.01)	0.0380*** (0.01)	0.1465*** (0.03)	-0.0466** (0.02)
Observations	146510	92821	11960	42716

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation (treatment period). NYC is an indicator variable for juveniles charged/arrested in NYC (treatment group). The effect of the reform is given by interacting these two variables NYC  $\times$  PostR (DiD). I check for treatment heterogeneity among NYC's female and Black juveniles by interacting DiD with these indicator variables.

Standard errors provided in parentheses. (p-value < 0.05 - \*, < 0.01 - \*\*, < 0.001 - \*\*\*)

**Table D.4:** Sentencing rates - Difference-in-difference

	Overall	Main Dataset	Ages 11-14
Panel A: Dismissed			
PostReform (PostR)	0.0026 (0.00)	-0.0027 (0.00)	0.0102 (0.01)
NYC	0.1129*** (0.00)	0.0851*** (0.00)	0.0923*** (0.01)
PostR × NYC (DiD)	0.0435*** (0.01)	0.0493*** (0.01)	0.0231 (0.02)
DiD × Female	0.0625*** (0.01)	0.0750*** (0.01)	0.0721*** (0.01)
DiD × Black	-0.0609*** (0.01)	-0.0493*** (0.01)	-0.0371** (0.01)
Female	0.0667*** (0.00)	0.0561*** (0.00)	0.0608*** (0.01)
Black	0.0151*** (0.00)	0.0310*** (0.00)	0.0295*** (0.01)
Status offenses	0.0817*** (0.00)	0.0654*** (0.00)	0.0169* (0.01)
Felony	-0.0864*** (0.00)	-0.0881*** (0.00)	-0.0879*** (0.01)
Age at referral	0.0076*** (0.00)	0.0103*** (0.00)	-0.0150*** (0.00)
Constant	0.3692*** (0.01)	0.3330*** (0.02)	0.6686*** (0.04)
Panel B: Out-of-home Placement			
PostReform (PostR)	0.0120*** (0.00)	0.0087** (0.00)	0.0044 (0.00)
NYC	0.0007 (0.00)	-0.0154*** (0.00)	-0.0268*** (0.00)
PostR × NYC (DiD)	-0.0435*** (0.01)	-0.0263*** (0.01)	-0.0152 (0.01)
DiD × Female	-0.0038 (0.01)	-0.0068 (0.01)	-0.0008 (0.01)
DiD × Black	-0.0006 (0.01)	-0.0035 (0.01)	-0.0239* (0.01)
Female	-0.0237*** (0.00)	-0.0215*** (0.00)	-0.0223*** (0.00)
Black	0.0213*** (0.00)	0.0176*** (0.00)	0.0171*** (0.00)
Status offenses	0.0038 (0.00)	0.0065* (0.00)	0.0239*** (0.00)
Felony	0.0269*** (0.00)	0.0316*** (0.00)	0.0332*** (0.00)
Age at referral	-0.0013 (0.00)	-0.0023** (0.00)	0.0088*** (0.00)
Constant	0.1321*** (0.01)	0.1533*** (0.01)	0.0096 (0.03)
Observations	146510	92821	42716

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation (treatment period). NYC is an indicator variable for juveniles charged/arrested in NYC (treatment group). The effect of the reform is given by interacting these two variables NYC × PostR (DiD). I check for treatment heterogeneity among NYC's female and Black juveniles by interacting DiD with these indicator variables. Standard errors provided in parentheses. (p-value < 0.05 - \*, < 0.01 - \*\*, < 0.001 - \*\*\*)

**Table D.5:** Non-status arrest rates - Difference-in-difference

	Overall	Main Dataset	Placement	Ages 11-14
Panel A: Non-status				
PostReform (PostR)	-0.0333*** (0.00)	-0.0137*** (0.00)	-0.0109 (0.01)	-0.0165*** (0.00)
NYC	0.1340*** (0.00)	0.1689*** (0.00)	0.2004*** (0.01)	0.1528*** (0.01)
PostR × NYC (DiD)	-0.0667*** (0.01)	-0.0538*** (0.01)	-0.0202 (0.02)	-0.0416*** (0.01)
DiD × Female	-0.0264*** (0.01)	-0.0060 (0.01)	0.0957*** (0.02)	-0.0056 (0.01)
DiD × Black	0.1123*** (0.01)	0.0556*** (0.01)	-0.0164 (0.02)	0.0398*** (0.01)
Female	-0.2690*** (0.00)	-0.2647*** (0.00)	-0.3272*** (0.01)	-0.2350*** (0.00)
Black	0.0470*** (0.00)	0.0472*** (0.00)	0.0530*** (0.01)	0.0352*** (0.00)
Age at referral	-0.0765*** (0.00)	-0.0712*** (0.00)	-0.0467*** (0.00)	-0.0125*** (0.00)
Constant	1.8532*** (0.01)	1.7590*** (0.02)	1.4200*** (0.04)	0.9639*** (0.03)
Panel B: Felony				
PostReform (PostR)	-0.0018 (0.00)	0.0041 (0.00)	0.0026 (0.01)	0.0104 (0.01)
NYC	0.1597*** (0.00)	0.1624*** (0.00)	0.2027*** (0.01)	0.1933*** (0.01)
PostR × NYC (DiD)	-0.0376*** (0.01)	-0.0154 (0.01)	0.0093 (0.03)	-0.0204 (0.01)
DiD × Female	-0.0074 (0.01)	0.0046 (0.01)	0.0204 (0.03)	0.0069 (0.01)
DiD × Black	0.0837*** (0.01)	0.0521*** (0.01)	-0.0258 (0.03)	0.0476*** (0.01)
Female	-0.1641*** (0.00)	-0.1623*** (0.00)	-0.2214*** (0.01)	-0.1569*** (0.01)
Black	0.0327*** (0.00)	0.0369*** (0.00)	0.0610*** (0.01)	0.0286*** (0.01)
Age at referral	-0.0411*** (0.00)	-0.0379*** (0.00)	-0.0263*** (0.00)	-0.0187*** (0.00)
Constant	0.9149*** (0.01)	0.8610*** (0.02)	0.7377*** (0.05)	0.5904*** (0.04)
Observations	146510	92821	11960	42716

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation (treatment period). NYC is an indicator variable for juveniles charged/arrested in NYC (treatment group). The effect of the reform is given by interacting these two variables NYC × PostR (DiD). I check for treatment heterogeneity among NYC's female and Black juveniles by interacting DiD with these indicator variables. Standard errors provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

## Appendix E: Two year recidivism results

### Two year recidivism pretrends

**Table E.1:** Pre-trends in recidivism rates (2 years recidivism)

	Comparison group	Treatment group	Difference
Recidivism - Overall	0.1834 (0.3870)	0.1830 (0.3867)	0.0004 (0.1822)
Recidivism - Main	0.1836 (0.3872)	0.1838 (0.3873)	-0.0001 (-0.0655)
Recidivism - Placement	0.2158 (0.4114)	0.2105 (0.4077)	0.0053 (0.7876)
Recidivism - Age specific	0.2819 (0.4499)	0.2785 (0.4483)	0.0034 (0.8643)

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. t-statistics provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

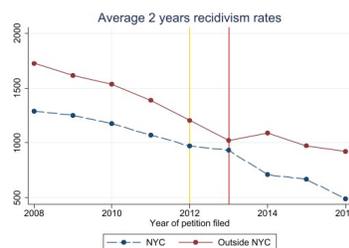


Figure E.1 Average two year recidivism rates

Grey line represents proposal of C2H legislation. Yellow represents C2H passed into law. Red represents the implementation of C2H

**Table E.2:** Baseline means

Pre-period means	Overall		Main		Placement		Ages 11-14	
Arrests	0.8175	(0.39)	0.8714	(0.33)	0.9304	(0.25)	0.9099	(0.29)
Misdemeanor	0.3755	(0.48)	0.4081	(0.49)	0.3619	(0.48)	0.3990	(0.49)
Felony	0.4420	(0.50)	0.4633	(0.50)	0.5686	(0.50)	0.5110	(0.50)
Detention	0.0731	(0.26)	0.0617	(0.24)	0.1361	(0.34)	0.0638	(0.24)
Dismissed	0.5929	(0.49)	0.5712	(0.49)	0.0000	(0.00)	0.5565	(0.50)
Probation	0.2718	(0.44)	0.2982	(0.46)	0.0000	(0.00)	0.3136	(0.46)
Out-of-home Placement	0.1255	(0.33)	0.1263	(0.33)	1.0000	(0.00)	0.1255	(0.33)
Recidivism	0.1884	(0.39)	0.2761	(0.45)	0.3178	(0.47)	0.3970	(0.49)
Observations	40433		15814		1998		7838	

Control means	Overall		Main		Placement		Ages 11-14	
Arrests	0.6768	(0.47)	0.6675	(0.47)	0.6813	(0.47)	0.7433	(0.44)
Misdemeanor	0.3988	(0.49)	0.3891	(0.49)	0.3550	(0.48)	0.4353	(0.50)
Felony	0.2779	(0.45)	0.2784	(0.45)	0.3263	(0.47)	0.3080	(0.46)
Detention	0.0559	(0.23)	0.0562	(0.23)	0.1080	(0.31)	0.0650	(0.25)
Dismissed	0.5071	(0.50)	0.5121	(0.50)	0.0000	(0.00)	0.4786	(0.50)
Probation	0.3385	(0.47)	0.3304	(0.47)	0.0000	(0.00)	0.3507	(0.48)
Out-of-home Placement	0.1199	(0.32)	0.1318	(0.34)	1.0000	(0.00)	0.1452	(0.35)
Recidivism	0.1851	(0.39)	0.2245	(0.42)	0.2539	(0.44)	0.3445	(0.48)
Observations	56190		30992		4085		14053	

## Pre-Post Analysis

Table E.3: Odds ratios of recidivism rates - Pre-post NYC

	Overall	Main	Placement	Ages 11-14
Recidivism				
PostReform (PostR)	1.3766*** (0.08)	1.0250 (0.07)	1.1192 (0.22)	0.9592 (0.09)
Female	0.4950*** (0.02)	0.4931*** (0.02)	0.5470*** (0.08)	0.4773*** (0.03)
PostR × Female	1.0779 (0.07)	1.0847 (0.08)	1.0409 (0.23)	1.0708 (0.10)
Black	2.2631*** (0.07)	1.3848*** (0.06)	1.2939* (0.15)	1.3953*** (0.08)
PostR × Black	0.7322*** (0.04)	0.9986 (0.07)	1.0512 (0.19)	0.9865 (0.09)
Status offenses	0.8291*** (0.04)	1.1054 (0.08)	1.0092 (0.24)	1.5169*** (0.14)
PostR × Status offenses	0.5739*** (0.05)	0.4988*** (0.05)	0.4586* (0.16)	0.4924*** (0.07)
Felony	1.0936** (0.03)	1.0785 (0.04)	1.1940 (0.13)	1.1531** (0.06)
PostR × Felony	0.8260*** (0.04)	0.8334** (0.05)	0.9255 (0.15)	0.7865** (0.06)
Age at referral	0.6611*** (0.01)	0.6435*** (0.01)	0.5117*** (0.02)	0.9524* (0.02)
Detention	0.9927 (0.04)	1.1181 (0.07)	0.9010 (0.11)	0.9875 (0.08)
Dismissed	2.5629*** (0.49)	1.1547 (0.27)	1.0000 (.)	1.3866 (0.44)
Probation	3.7822*** (0.72)	1.7036* (0.40)	1.0000 (.)	2.3504** (0.74)
Out-of-home Placement	3.7040*** (0.71)	1.6878* (0.40)	1.0000 (.)	2.3270** (0.74)
Observations	58379	32091	3697	15034

Exponentiated coefficients. Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation. I check for treatment heterogeneity among females and Black juveniles by interacting PostR with these indicator variables. PostR × Status offenses indicates the effect of the reform on recidivism rates of juveniles who previously only committed a status offense but recidivated to a non-status offense (crimes if committed by adults such as robbery, assault, etc.). PostR × Felony indicates the effect of the reform on recidivism rates of juveniles who previously committed a felony offense and recidivated again to a non-status offense (either misdemeanor or felony). Standard errors provided in parentheses. (p-value < 0.05 - \* , < 0.01 - \*\* , < 0.001 - \*\*\*)

## Difference-in-difference results

Table E.4: Recidivism rates - Difference-in-difference

	Overall	Main	Placement	Ages 11-14
PostReform (PostR)	-0.0171*** (0.00)	-0.0300*** (0.00)	-0.0258** (0.01)	-0.0538*** (0.01)
NYC	-0.0045 (0.00)	0.0092* (0.00)	0.0039 (0.01)	0.0097 (0.01)
PostR × NYC (DiD)	0.0600*** (0.01)	0.0452*** (0.01)	0.0365 (0.03)	0.0640*** (0.02)
DiD X Female	-0.0217** (0.01)	-0.0196* (0.01)	-0.0251 (0.03)	-0.0255 (0.01)
DiD X Black	-0.0426*** (0.01)	-0.0339*** (0.01)	-0.0113 (0.02)	-0.0615*** (0.01)
DiD X Status offenses	-0.0315*** (0.01)	-0.0200 (0.01)	-0.0754* (0.04)	-0.0163 (0.02)
DiD X Felony	-0.0130 (0.01)	-0.0104 (0.01)	0.0310 (0.02)	-0.0144 (0.01)
Female	-0.0691*** (0.00)	-0.0787*** (0.00)	-0.0736*** (0.01)	-0.1163*** (0.01)
Black	0.1154*** (0.00)	0.0837*** (0.00)	0.0660*** (0.01)	0.1263*** (0.01)
Status offenses	-0.0444*** (0.00)	-0.0485*** (0.00)	-0.0588*** (0.01)	-0.0512*** (0.01)
Felony	0.0015 (0.00)	-0.0034 (0.00)	-0.0037 (0.01)	-0.0039 (0.01)
Age at referral	-0.0529*** (0.00)	-0.0626*** (0.00)	-0.0864*** (0.00)	-0.0062* (0.00)
Months to disposition	0.0001 (0.00)	0.0016*** (0.00)	0.0136*** (0.00)	0.0034*** (0.00)
Detention	0.0192*** (0.00)	0.0394*** (0.01)	-0.0101 (0.01)	0.0348*** (0.01)
Dismissed	0.0697*** (0.01)	0.0686*** (0.01)	0.0000 (.)	0.1141*** (0.02)
Probation	0.0989*** (0.01)	0.0996*** (0.01)	0.0000 (.)	0.1676*** (0.02)
Out-of-home Placement	0.1061*** (0.01)	0.1056*** (0.01)	0.0000 (.)	0.1714*** (0.02)
Constant	0.8702*** (0.01)	1.0414*** (0.02)	1.4596*** (0.05)	0.2646*** (0.04)
Observations	146069	92804	11960	42710

Overall sample is all the available records. Main sample is all records without any missing race data. Placement sample is limited to the kids that were put into placement. Ages 11-14 as the name suggests includes only juveniles in the age group. PostR is an indicator variable for the period post reform implementation (treatment period). NYC is an indicator variable for juveniles charged/arrested in NYC (treatment group). The effect of the reform is given by interacting these two variables NYC × PostR (DiD). I check for treatment heterogeneity among NYC's female and Black juveniles by interacting DiD with these indicator variables. DiD × Status offenses indicates the effect of the reform on recidivism rates of NYC juveniles who previously only committed a status offense but recidivated to a non-status offense (crimes if committed by adults such as robbery, assault, etc.) compared to their untreated counterparts. DiD × Felony indicates the effect of the reform on recidivism rates of NYC juveniles who previously committed a felony offense and recidivated again to a non-status offense (either misdemeanor or felony) compared to their untreated counterparts. Standard errors provided in parentheses. (p-value < 0.05 - \*, < 0.01 - \*\*, < 0.001 - \*\*\*)